

Parves Sultan *Editor*

Innovation, Leadership and Governance in Higher Education

Perspectives on the Covid-19 Recovery
Strategies

 Springer

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ISBN 978-981-19-7298-0 ISBN 978-981-19-7299-7 (eBook)
<https://doi.org/10.1007/978-981-19-7299-7>

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Preface

The higher education sector witnessed a sudden shift from classical face-to-face education to an online environment due to the Covid-19 pandemic and maintaining the social restriction requirements in early 2020. During 2020–2022, universities following managerialism and capitalism perspectives, driven mainly by revenue models, and heavily dependent on international student tuition fees have experienced massive job cuts to meet the expected ‘revenue’ model. However, universities in some developing countries adopted available and accessible technologies and social media platforms to deliver online/offline classes and to adhere to the social restriction policy and practices. Nevertheless, the anxieties and uncertainties faced by the learning and teaching communities across the globe are beyond measurable. We have lost our students, colleagues, friends, and relatives in the last 2 years. We have also seen high depression and suicidal rates during this period.

Covid-19 was a unique situation affecting global higher education operationalisation, including student travel. It was a unique situation for every university, and there was no previous knowledge and experience about how to cope with this situation and how higher education can sustain itself during and after the Covid-19 period. This book proposal was approved by Springer Nature during a high crisis when many universities had faced a turbulent time of minimising cost, maintaining projected revenues and growth, juggling teaching vs research, keeping experienced-vs-novice staff, or upholding social commitments to education and building communities. Thus, this book aims to share a common platform of higher education cases in innovation, leadership, and governance across some developed and developing countries and to inform what worked well and what did not during the Covid-19 period. The cases and evidence from research aim to contribute to future research, formulate strategic priority plans for higher education institutions, and overcome similar challenges.

The book has service innovation and service management perspectives and is founded upon three significant features. First, the book includes the authors’ original and scholarly contributions, including case studies explaining the currency and debate of existing theories and current practices to mitigate the Covid-19 challenges

affecting the higher education institutions in their respective countries. Second, the book chapters included innovation strategies and tactics, leadership styles, and governance practices and explained what worked well and what did not during the Covid-19 period. Third, the book chapters provide a better understanding of a case independently and through cross-comparison across cultures or institutions and help formulate the post-Covid-19 recovery plan or strategies for higher education innovation, leadership, and governance.

The book has 22 chapters and 57 contributing authors. The chapters showcase empirical evidence from Australia, the USA, China, Turkey, India, South Africa, Bangladesh, Pakistan, and Fiji. The chapters are organised into five parts. The introductory part of this book defines its core concepts and scopes and is founded upon reviews of current literature, challenges, SDGs, and recovery strategies. The chapters in this part help understand and identify the global best practices to formulate a Covid-19 recovery plan for higher education institutions. The second part is Innovation in Higher Education, where chapters on gamification, preference to study abroad destination, open innovation, technology integration and technology shock, virtual inquiry-based teaching and learning, blended learning, and learning management systems (LMSs) are laid out with empirical evidence. Covid-19 challenged the traditional classroom learning environment and the traditional way of designing curriculum, operationalisation and delivery, pedagogy, classroom layout, learning skills, and learning outcomes. A major pedagogical shift, moving to online learning, teaching through third parties, outsourcing, and video conferencing/communication tools are examples of innovations to short-term responses to Covid-19 teaching and delivery challenges. In developing countries, the challenges are even more, including slow Internet speed, lack of consistent electricity supply, and inadequate personal or institutional computers. Besides, ongoing challenges include student engagement and scientific experimentation in cloud-based teaching and delivery. This part includes theories, empirical evidence, and cases of strategic innovations to address the Covid-19 challenges. Part three is Leadership in Higher Education. The university leadership team still faces increased challenges in meeting the fixed and operational costs. A sudden investment in online infrastructure, training, technology acceptance and resistance, government budget cuts, quality assurance, change management, and delivery remain other critical challenges. Universities that depend more on international student fees must rethink the funding model. Thus, a leader's priority has shifted towards low-cost higher education delivery. Given the numerous challenges the higher education sector has faced since 2020, including the Covid-19 pandemic, global economic recession, political crisis, war, and aggression, higher education leaders seek creative and sustainable solutions and stay flexible when continuous changes are a must. This part includes relevant leadership theories with empirical evidence on leadership styles that could work well in the higher education context. Part four is Governance in Higher Education, where major governance issues, job cuts/redundancies, financial models and sustainability, information dissemination and information confusion, working for home, and a World Bank-funded capacity building project have been discussed.

The final part is a conclusion, which includes higher education value propositions and a book summary highlighting the paradigm shifts after the Covid-19 pandemic.

The book is easy to follow and a good read for everyone. It is a helpful guide to academics, researchers, higher education leaders, and managers. The book is for enthusiastic readers and aspiring leaders, managers, and practitioners of education, leadership and management, corporate governance, management studies, business ethics, organisational studies, marketing education, public and nonprofit management, strategic management, and technology and innovation management.

Contents

Part I Introduction

- 1 The Roles of Innovation, Leadership, and Governance in Higher Education for the Covid-19 Recovery: A Review 3**
Parves Sultan
- 2 The COVID-19 Dilemma: A Roadmap to Surmount Future Challenges in Higher Education 25**
Samantha A. Thompson and Mary W. Johnson
- 3 Is the UN’s Quality Education Goal for Tertiary Level (SDG-4.3) at Stake Due to the Covid-19 Pandemic? 45**
Tasmiha Tarafder and Sehrish Shahid
- 4 Challenges, Recovery Strategies and Solutions to the Covid-19 Pandemic in Universities: An Exploratory Literature Review 61**
Bethuel Sibongiseni Ngcamu and Evangelos Mantzaris

Part II Innovation in Higher Education

- 5 Gamification: Teacher Proactive Support and Student Engagement During Covid-19 and Beyond 85**
J Irudhaya Rajesh, Vipul Pare, Sharif Rasel, Frank Nyamrunda, Prikshat Verma, and Adela McMurray
- 6 Choosing Higher Education Institution and Study Abroad Destination: What Mainland Chinese Parents and Students Rate Important in the Post-pandemic World? 101**
Isaac Cheah and Anwar Sadat Shimul
- 7 Leveraging the Power of Open Innovation and Dynamic Capabilities to Recover from COVID-19 Impacts: A Study of Higher Education Institutions of Pakistan 119**
Abdul Salam, Shahid Hussain, Wasim Abbas Awan, and Hina Amin

8	Re-envision of Learning by Integrating Technology in Higher Education	139
	Sunpreet Kaur Sahni	
9	Preparing STEM and Education Undergraduates for Career Readiness Using Virtual Inquiry-Based Teaching and Learning	159
	Luria Young and William Katzman	
10	Perceived Readiness and Factors Influencing the Adoption of Online Learning Management Systems: The Case of Rajshahi University, Bangladesh.	171
	Amitav Saha, K. M. Sabbir Hasan, Md. Anum Shahriar Rabbi, Arabinda Saha, and Md. Rabiul Awal	
11	Blended Approach Learning in Leading Private Universities of Bangladesh During COVID-19 Pandemic: Opportunities, Challenges and Strategies.	197
	Mohammad Shahidul Islam and Tania Akter	
12	Technological Shock in Digital Transformation of Higher Education in Bangladesh.	213
	Shahreen Sonia, Marvin Razi Mebin, Tina Ummia Hussain, Md. Muzakkeerul Huda, and Md. Abid Hasan	
Part III Leadership in Higher Education		
13	The Leadership in Tackling the Unforeseen Consequences of the Covid-19 Pandemic: Who Is the Emergent Leader?	235
	Deniz Palalar Alkan, Mustafa F. Özbilgin, and Rifat Kamasak	
14	Navigating the Crucible of Crisis: Effective Leadership Strategies for Higher Education COVID-19 Recovery	257
	Samantha Thompson and Xavier Hoy	
15	The Relationship Between Leadership Styles and Crisis Management Strategies: The Context of University Education in Bangladesh During the Covid-19 Pandemic.	277
	Tania Akter and Mohammad Shahidul Islam	
16	Leadership in Higher Education During COVID-19 in Australia: A Critical Reflection	297
	Nilufa Khanom	
Part IV Governance in Higher Education		
17	Financial Sustainability, Cost-Saving Strategies and Contingency Plans in Higher Educational Institutions During the COVID-19 Pandemic.	317
	IKM Mokhtarul Wadud	

18 Information Dissemination During the COVID-19 Outbreak Among the Students at the Tertiary Level in Bangladesh. 335
Syed Mahbubur Rahman, Mahreen Mamoon, Afdalin Bin Haque, Md. Joynal Abedin, Rezwanul Haque, Rezbin Nahar, Md. Nasir Uddin, and Md. Shamimul Islam

19 Working from Home for Academics in Higher Education: An Evidable Reality in the ‘New Norm’ 351
Wahab Ali

20 An Evaluation of HEQEP in Capacity Building of University of Rajshahi and Lessons Learned During the COVID-19 Pandemic. 371
Md. Shawan Uddin and Md. Sohel Rana

Part V Conclusion

21 Reinventing the Higher Education Value Proposition After Covid-19. 395
Michael Shaw, Sardana Islam Khan, and Priyantha Bandara

22 Will a Paradigm Shift Emerge in Higher Education Institutions After Covid-19? 413
Parves Sultan, Masud Khan, Sang Hoon Lee, and Aman Maung Than Oo

About the Editor

Parves Sultan has a Ph.D. (Australia), an M.Sc. (research) (Japan), an MBA, and a BBS (Hons) with first classes and academic excellence awards, including the University Award and the University Gold Medal. He is currently the Managing Director of the Australian Consultants for Capacity Building and a registered independent consultant to TEQSA. He has experience and expertise in Quality Assessment and Accreditation, including AQF, CRICOS, and ASQA. Dr. Sultan has over 22 years of academic and leadership experience in higher education, including over 14 years of teaching, academic leadership, and research experience in Australian Higher Education institutions. Dr. Sultan served in academic and leadership positions, including Professor of Marketing and Director (Research) at BRAC Business School, BRAC University, Bangladesh; Professor and Dean at the Southern Cross Higher Education Institute, Melbourne, Australia; Head of Marketing Discipline and Director (Head) of Programs/Courses at Central Queensland University and the University of Canberra in Australia; and Program Director (BBA and MBA) at Southeast University and Open University in Bangladesh. While serving at Australian universities, Dr. Sultan was awarded the Vice-Chancellor’s Educator of the Year Award, the Dean’s Platinum Award, the Excellence in Research Award from the Emerald Literati Network, the Best Paper Awards, and the like. Dr. Sultan is the author/editor of the book “Innovation, Leadership, and Governance in Higher Education: Perspectives on the Covid-19 Recovery Strategies,” published by Springer Nature. He has published over 110 research papers in reputable journals, refereed proceedings, books, and newspapers. His research articles have been published in many scholarly and top-ranked journals (ABDC–A, SCImago Q1, etc.), including the *Journal of Cleaner Production*, *Food Quality and Preference*, *Journal of Brand Management*, *Managing Service Quality/Journal of Service Theory and Practice*, *Journal of Business and Industrial Marketing*, *Asia Pacific Journal of Marketing and Logistics*, *International Journal of Bank Marketing*, *Journal of Food Products Marketing*, *Quality Assurance in Education*, *International Journal of Quality and Service Sciences*, *Accountability in Research*, *International Journal on Disability and Human Development*, and *Australasian Journal of Regional Studies*,

and the like. He presented papers at reputable international conferences, including AMA, ANZMAC, ANZAM, and ANZRSAI. Dr. Sultan supervised and completed 6 PhDs, 1 Master of Communication (research), and over 44 honors and graduate projects. He has expertise in qualitative and quantitative research methods, including statistical modeling and data analytics. Dr. Sultan was awarded and completed research projects valued at A\$262,000.00. Dr. Sultan published widely in Higher Education, Student Experience, Quality and Performance Measurements, Branding, Green Consumption, and Attitude–Behavior areas. He is a multidisciplinary researcher, and his research interests include Behavioral Sciences, Consumer Psychology, CSR, Governance and Wellbeing, Marketing, Organizational Performance, Internationalization, Entrepreneurship, technology-industry 4.0, and SDGs relating to Education, Health, and Environment.

Part I
Introduction

Chapter 1

The Roles of Innovation, Leadership, and Governance in Higher Education for the Covid-19 Recovery: A Review



Parves Sultan

Abstract This chapter explores the critical aspects of innovation, leadership, and governance strategies adopted during the Covid-19 pandemic between 2020 and 2022 in the higher education (HE) sector. For this purpose, the key and relevant literatures were sourced from Scopus, Google Scholar, and other electronic sources to identify and discuss the key themes and challenges. The reviews included perspectives from countries on various aspects of HE innovation, leadership styles, and governance practices adopted during this pandemic. This introductory chapter discusses strategies that helped institutions to survive during Covid-19. The chapter also identifies future research directions covering HE innovation, leadership, and governance.

Keywords Innovation · Leadership · Governance · University · Covid-19

1 Background

The Covid-19 outbreak in late December 2019 caused severe disruptions in society, economy, and human lives. The World Health Organization (WHO) declared this a pandemic with a Public Health Emergency of International Concern on 30 January 2020 (WHO, 2021). Over 328.2 million people were affected, and 5.5 million died due to the Covid-19 pandemic as of 18 January 2022 (BBC, 2022). The most affected countries by published data include the USA and some EU countries, Brazil, and India. Previous coronaviruses, such as SARS in 2002 and MERS in 2012 (DH, 2021), gave researchers and top companies to head start and successfully developed the Covid-19 vaccines by early 2021. Over 17 January 2022, over 4.72

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_1

billion people received their first dose of a Covid-19 vaccine globally, about 61.5% of the world's total population (Holder, 2022).

The Covid-19 disruption affected the higher education industry adversely. There were about 1,075,496 international students in the USA in 2019–2020, most of whom were from China (33.7%) and India (17.5%). In 2020–2021, the student number was 15% lower to 914,095 compared to the previous year (Moody, 2021). In Australia, a similar trend has been observed. There were 440,667 higher education (HE) students in 2019, mainly from China (38.4%) and India (19%), and in 2020, this number dropped to 418,168, a 5.1% decline compared to the HE student number in 2019 (Ferguson & Spinks, 2021). It was predicted that there could be a shortfall of up to 4.5 billion dollars in the Australian universities' revenues due to declining student numbers by up to 50% (Bradley, 2020).

The impacts of Covid-19 on student learning and progression, social mobilities, and personal and psychological well-being have been enormous. For example, findings of a cross-country study revealed that HE students across Thailand, Taiwan, and Indonesia have a high level of anxiety and that their anxiety leads to suicidal thoughts mainly being influenced by their level of confidence in pandemic control, the sufficiency of resources, and Covid-19 information (Pramukti et al., 2020). In Japan, it was reported that the suicide rate among undergraduate students in Japanese universities was the highest in 2020–2021, compared to the last six years, due to increased mental anxiety and loss of income (Fuse-Nagase et al., 2021).

The Covid-19 pandemic affected employment in some countries. The Australian context in this regard was hostile. For example, Australian public universities cut over 41,000 academic and administrative jobs in 2020–2021 (MacGregor, 2021). Due to extreme stresses, uncertainties, and job losses, Australia has seen unprecedented growth in mental health issues during the pandemic period. Australia processed over 17.6 million subsidized Medicare Benefits Schedule (MBS) targeting mental-health-related services in just 15 months, between 16 March 2020 and 27 June 2021, when Covid-19 was spreading fast (AIHW, 2021).

Like the Australian universities, the American University in Nigeria also laid off 400 staff members in the name of restructuring for sustainability (Adeyanju et al., 2022). Besides, every two out of five lost their jobs in Nigeria. Contrastingly, a UNESCO report found that most countries in their samples did not reduce the employment of academic staff ($n = 35$ countries), administrative staff ($n = 38$ countries), and the salaries of academic staff ($n = 38$ countries) and administrative staff ($n = 41$ countries) because of Covid-19 (UNESCO, 2021). This contrasting evidence shows the difference in leadership and governance practices across many universities.

The Covid-19 pandemic has adversely affected socioeconomic conditions in each country. Millions of international students, both new and existing visa holders, are waiting for international travel to pursue HE studies, and those who stay back face a travel ban, job loss, visa-related complications, and financial distress. Many universities in developed countries quickly adopted online delivery of lecture and tutorial services and submission of student assessments. For example, over 1300 institutions across 50 states in the USA stopped face-to-face delivery of teaching

and moved online (McNamara, 2021). In the UK and Australia, we have seen similar examples. Besides, some universities have opened their international campuses crossing their local boundaries between 2020 and 2022. With such a massive shake during the Covid-19 period, HE in the post-Covid-19 era brings innovations in course development and delivery, market reach and expansion; proactive and resilient leadership; and improved governance to combat revenue deficit and establish sustainability. This introductory chapter discusses the critical aspects of innovation, leadership, and governance adopted during the Covid-19 period in the HE sectors and appraises how those could help meet post-Covid-19 challenges.

2 Method

Bibliometric analysis has been widely used in studies like academic misconduct (Ali et al., 2021), corporate universities (Singh et al., 2020), marketing (Sultan et al., 2018), and the like. This chapter included studies and online articles printed in English and comprised of peer-reviewed journal articles, books, book chapters, and news articles published between 2020 and 2022. The database/sources included Scopus and Google Scholar. The Scopus database was used primarily to find relevant studies in higher education in global innovation, leadership, and governance research. The abstract, title, and author keywords are used in the search processes. This search process revealed only a limited number of studies. Each study has limitations, including an in-depth analysis of the topics of interest related to the present chapter.

The Google Scholar search produced several relevant peer-reviewed papers, and for this purpose, similar keywords used in the Scopus search process are applied. After removing duplicate studies, only relevant abstracts and related papers were included and reviewed. The literature search and filtration process findings indicate that the impacts and changes of the Covid-19 pandemic on innovation, leadership, and governance in higher education are evolving. The review findings guided us in developing several research agendas for future researchers. Figure 1.1 shows the search and filtration processes applied in the Scopus search process. Table 1.1 shows the frequencies/occurrences of keywords. Figures 1.2a, 1.2b, and 1.2c shows the keyword association for each search string outlined in Fig. 1.1.

Figures 1.2a, 1.2b, and 1.2c shows the network of the keywords listed by authors and the association between keywords within and across the research studies published between 2020 and 2022 (used Scopus search string). The more the occurrences (see Table 1.1), the more prominent the circles. The thicker the lines between the circles, the stronger the association. In summary, (i) the co-occurrence of the author keywords with at least five occurrences of a keyword found 40 studies met the threshold and formed 6 clusters for the innovation string, (ii) the co-occurrence of the author keywords with at least five occurrences of a keyword found 12 studies met the threshold and formed 4 clusters for the leadership string, and (iii) the co-occurrence of the author keywords with at least two occurrences (due to limited

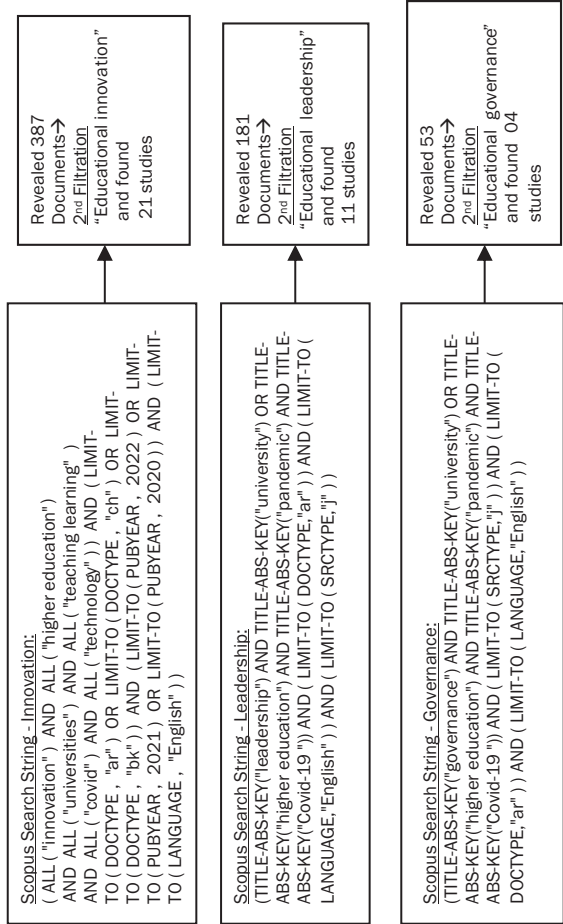


Fig. 1.1 Literature search and filtration process

Table 1.1 Frequency or occurrences of authors' keywords

Innovation in HE		Leadership in HE		Governance in HE	
Keyword	Occurrence ≥ 5	Keyword	Occurrence ≥ 5	Keyword	Occurrence ≥ 2
Covid-19	117	Covid-19	73	Covid-19	31
Higher education	62	Leadership	23	Higher Education	12
Online learning	37	Pandemic	22	Governance	4
E-learning	23	Higher education	16	Pandemic	4
Covid-19 pandemic	23	Covid-19 pandemic	11	Leadership	2
Education	19	Crisis	9	Digital Learning	2
Blended learning	16	Students	7	Digital transformation	2
Online teaching	12	Educational leadership	7	Crisis	2
Distance learning	10	Collaboration	5	Shared governance	2
Online education	8	Communication	5	Clinical governance	2
Technology	8	Online learning	5	University governance	2
Engagement	8	Research	5	Ethics	2

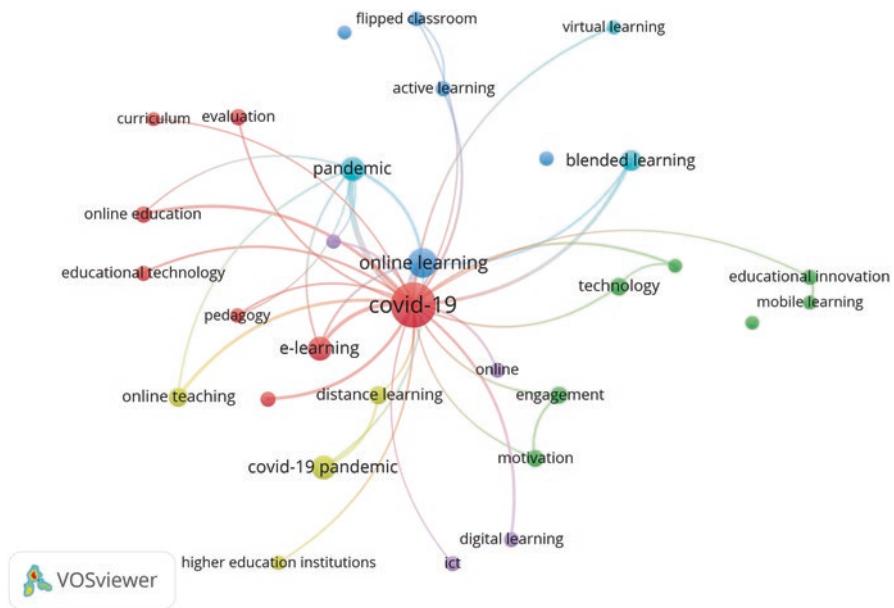


Fig. 1.2a Network of keyword occurrences: Innovation in higher education

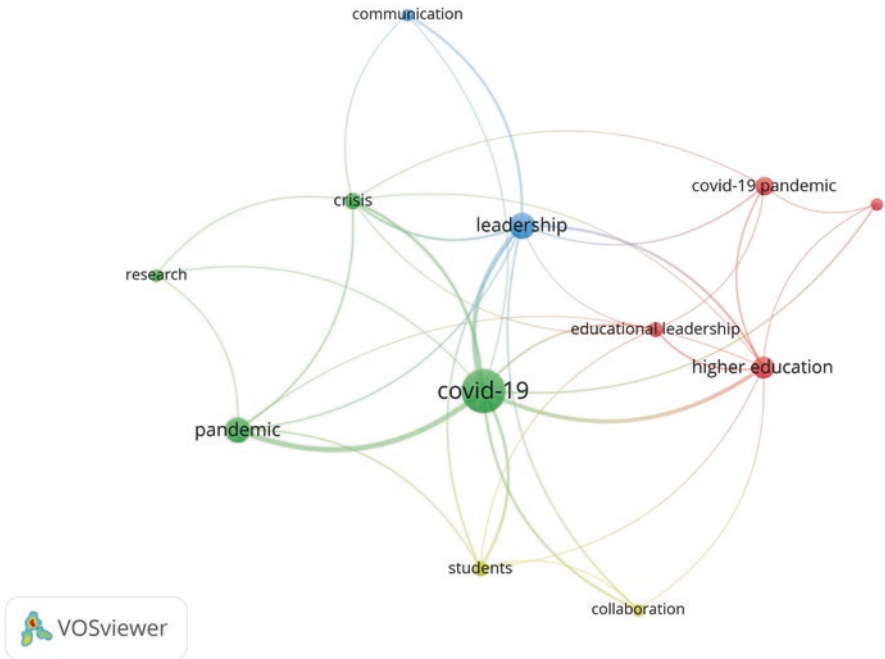


Fig. 1.2b Network of keyword occurrences: Leadership in higher education

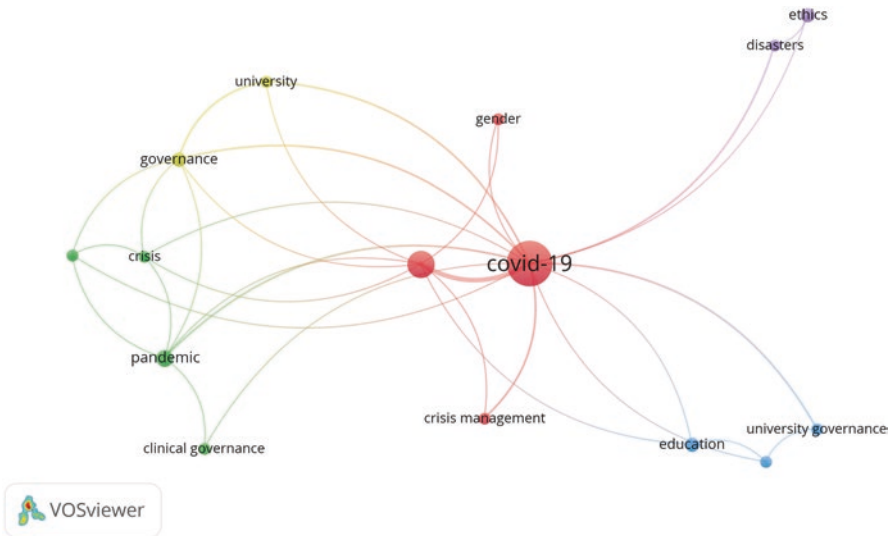


Fig. 1.2c Network of keyword occurrences: Governance in higher education

studies) of a keyword found 15 studies met the threshold and formed 5 clusters for the governance string. VOSViewer was used to explore occurrences of author keywords and find their networks, and confine our discussion. Overall, Figs. 1.2a, 1.2b and 1.2c reveals the key words related to educational innovation, leadership, and governance.

3 Innovation in Higher Education

Innovation is commonly perceived as something new or never seen/used, related to technology or technological innovation. This connotation is not incorrect. An innovation founded on and facilitated through technology brings more efficiency and effectiveness. Innovation refers to a change of doing things in an alternative way. Innovation that brings positive changes, including improved performances and well-being, is implemented. An innovation that engages key stakeholders and collaborates with multidisciplinary and cross-cultural experts is generally accepted and sustained in a society. Innovation can be a new idea, method, system, technology, know-how, or device. Thus, innovation in higher education refers to the development, adoption, and transformation of new or current academic programs, curriculum, pedagogy, delivery, technology, policies, practices, and ideas to improve performances, address market challenges, and create more values and sustainable opportunities.

3.1 *Online Delivery*

Most educational institutions have implemented online learning as an effective strategy in the last two years. Education digitization, online platforms, synchronous and asynchronous delivery, pedagogical innovation, micro-credentials etc., are some key strategies that educational institutions are adopting for the next phase of growth and mitigating challenges. During the Covid-19 pandemic, many traditional and blended methods of higher education deliveries moved to pure online delivery or virtual learning to ensure Covid-safety plans, such as social distancing, etc. It was reported that online/virtual learning has difficulties, including internet connectivity, slow speed, limited knowledge and skills in ICT, device availability, demotivation, feeling loneliness, less interaction and engagement, high cost of mobile data and home internet, and so on (Nugroho et al., 2021; Lorenzo-Lledo et al., 2021). This often results in low teaching satisfaction scores (Lorenzo-Lledo et al., 2021) and low interest in adopting ICT-based education delivery.

3.2 Blended Delivery

In the blended model, face-to-face (F2F) and online learning work together for education delivery. However, students have experienced numerous difficulties adapting to this hybrid model, including decreased motivation, technical connection problems, and less interaction with the teaching staff and other students. The degree of satisfaction with the teaching received is also moderate. Compared to online/virtual learning, students get more academic support, organization, management, learning community, learning resources, and student voice in the blended and face-to-face (F2F) learning approaches. However, the research found no significant difference exists for year one students between online/virtual and blended learning delivery/model (Finlay et al., 2022).

3.3 Flipped Delivery

One of the popular approaches to the blended mode of delivery is the flipped classroom. The flipped model classroom helps students know the study resources and materials in advance. In the flipped classroom, students become self-motivated and active learners, and they are in the center of the learning environment (Fuchs, 2021) and can use the class time to clarify the facts and principles with questions and answers and active interaction (Abdulghani et al., 2022). The blended learning approach could be challenging for medical studies and laboratory experimentation, and as a result, this approach was named a double-edge sword (Jebraeil et al., 2020).

3.4 Curricular Adaptation

While many traditional universities adapted online delivery due to the Covid-19 pandemic, the curriculum and instructional changes were limited to functional improvement, including changes in teaching behaviors and technology use (Lee & Jung, 2021). Traditional universities' most innovative practices during the Covid-19 pandemic include redesigning the assessment tasks and technology acceptance for electronic submission and marking, communication, lecture/tutorial delivery, etc. In contrast, distance universities, and their use of mobile learning (m-learning), portable devices (e.g., smart/traditional phones, MP3 players, tablets etc.), radio and television, postal services, emails, CD/USB, online delivery, etc. did not face difficulties in terms of learning and teaching design and delivery during this pandemic time.

3.5 Assessment

Due to Covid restrictions, many traditional universities quickly moved to different student assessments, such as written assignments, online presentations, quizzes, take-home examinations, and the like. However, lack of proper tracking systems and integrity, contract cheating, and ghost-writing have grown phenomenally.

Studies found several situations where students are more likely to “contract cheat” and various types of assessments where students do not choose to “contract cheat.” These situations are student dissatisfaction with the learning and teaching practices, evidence that there are “lots of opportunities to cheat” and language barriers. The assessment types where contract cheating is less likely to occur include personalized and unique assessment, in-class task/examination, viva, profession-focused authentic assessment, and reflection on practicum (Bretag et al., 2018a, b; Harper et al., 2019; James & Casidy, 2018).

Research suggested some guidelines to implement large-scale online examinations via Zoom. These include online examination supervision of up to 20 students at a time by a proctor (a third-party independent), camera set to include observing surroundings, setting a time without supervision, recorded video session with the microphone on, no virtual background and mobile phone, lecturers being the Zoom cohort should be available through a private breakout-room through chatbox and clarify questions that students may have, browser security, students and their surroundings must be identified, giving the exam password to access to exam site or LMSs (e.g., Moodle, Canvas, Blackboard etc.), creating enough questions that can randomly appear for each student. Finally, students requiring better internet connections and a quiet place should be invited to a public library or campus with proper requirements/approvals (Kedem-Yemini & Katz, 2021).

3.6 Technology Acceptance and Learning Performance

The adoption of a digital/online/virtual learning environment does not make student learning more accessible or harder intrinsically; however, the research found that student understanding and performance gaps are widened (Witt et al., 2021) in digital/online/virtual learning as compared to the F2F learning environment. The technology acceptance in digital/online/virtual education delivery, including the flipped classroom, require careful planning and implementation regarding digital literacy, student curriculum and assessment design, students’ virtual engagement activities, social collaboration during and after scheduled online interaction, students’ online engagement and monitoring activities, 24/7 technology support, pedagogical design, lecturer-learner motivation, and most of all the infrastructure and readiness to supporting online/virtual delivery.

3.7 *Learning Management Systems (LMSs) and Learning Platforms (LPs)*

There are a few LMSs; the most popular are Moodle, canvas, blackboard, Google classroom, Schoology, and absorb. Some of them are open-sourced and free with advanced interfaces. Many educational institutions in developing and developed countries adopted LMSs in their L&T delivery strategies and ensured online, blended, and flipped model L&T practices. During the Covid-19 pandemic, an increased number of institutions adopted these LMSs as part of their L&T delivery. Besides, various communication tools, such as Microsoft teams, Zoom, Google meet, Olympus, Skype and the like, are rising during this global pandemic.

Students and professionals use various LPs, including MOOC, Udemy, Skillshare, LinkedIn Learning, edX, Udacity, and Khan Academy, to upgrade their skills and learn new skills appropriate and related to their professions. These platforms offer online skill-based short courses (e.g., micro-credentials) with affordable prices and digital certificates or digital badges when completed successfully. Micro-lectures on a single small topic can help learn quickly, share conveniently, and increase real-time interaction (Jin, 2021). MOOC, edX, Coursera, Udemy, Skillshare etc., are getting increased acceptability among the industries and user communities. These micro-credentials help meet people across the globe while staying at home and provide and share rich experiences and resilience. Due to global pandemics and job losses, students and professionals share their skills and learn new skills through LPs while staying at home, ranging from cooking to cyber security.

Interestingly, the research found that TikTok videos, Facebook live and recorded videos, YouTube videos, and LinkedIn have been widely used during the pandemic restrictions. TikTok videos promote student motivation, engage students in a learning environment and content, encourage the development of content, creativity, and curiosity, and build virtual communities and telecommunication hubs (Escamilla-Fajardo et al., 2021; Ratledge et al., 2020).

Online and distance education is not new; however, during the Covid-19 pandemic, institutions and learners are reminded how important it is to consider an alternative approach to L&T. Institutions in developed countries adopted online delivery faster with LMSs and communication platforms/tools. However, this was more challenging to institutions in developing or least developed countries. Many institutions have seen technological adaptation and innovation in their L&T practices through Facebook live and YouTube video content creation and sharing among learning communities. A more flexible approach to resubmitting student assessments multiple times, meeting lecturers on social media platforms or telephones, and a flexible approach to student admission, fee payment, examination, and graduation are some of the strategies followed by many higher education institutions during this pandemic, including those in South Africa (Kele & Mzilen, 2021). Nevertheless, much less has been done in the online/digital curriculum and pedagogy design to minimize future and similar challenges, like the Covid-19 pandemic.

4 Leadership in Higher Education

Leadership has many definitions and styles. In our context, leadership is defined as the ability to direct an organization or group to accomplish shared goals successfully, timely, and sustainably and safeguard all relevant stakeholders' personal, institutional, social, economic, and environmental circumstances. Higher education service and leadership are concerned with all academic, administrative, and support services components and their innovation, operationalization, improvement, and changes (Sultan & Wong, 2012, 2014, 2019; Mukaram et al., 2021). Thus, academic leadership is a process of development, improvement, promotion, and maintenance of educational values and identities in three major areas: academic, administrative, and support services.

4.1 *Selected Leadership Theories in Higher Education*

The practice of “managerialism” in higher education emerged in the late 1990s that holds the view that better and more proficient managers should lead organizations for better economic productivity. Managers must have the “right to manage” authority. Once managers are allowed to manage the organizations and practice the “right to manage” authority, it becomes evident how this approach favors some staff and rejects other staff within an organization. Wright (2001) referred to this as “bastard leadership.” The focus of managerialism or bastard leadership is on means not the ends, and economic gain. It discourages moral thinking. It has “targets,” “means,” and “executions” as part of the “managerialist” control agenda, and hence, democratic practice is absent in this approach.

There have been several leadership models in academic research, but only a few are relevant to higher education, primarily founded on situational and transformational views (Wright, 2001). In higher education, the research found that the transactional and transformational leadership styles are better suited (Antonopoulou et al., 2021; Kunene & Mapulanga, 2021; Mews, 2019; Azizaha et al., 2020). The notion of situational and contingency leadership theories explains that leadership and its actions are conditional upon situations organizations face. Adaptive leaders take advantage of situations (e.g., opportunities) and change organizational aims and roles. The Covid-19 scenario has changed the entire operational activities of businesses, including higher education. Leadership in higher education must now rapidly rethink and change its business activities and offerings. Academic and adaptive leadership influences universities' readiness to change directly and indirectly through organizational learning capability processes (Mukaram et al., 2021).

The transactional leadership develops a framework and specifies task requirements expected of employees, and rewards employees for completing the tasks successfully within the contractual agreement. On the other hand, transformational leadership helps change the followers from immediate self-interests to achieve

organizational goals through influence (or charisma), motivation, stimulation, and attention. This leadership style is ideal during or after a crisis when change management is highly desirable. A transformational leader stimulates and transforms employees and achieves remarkable organizational outcomes. There are four major components of the transformational leadership styles, including (i) charisma or idealized influence, where the leader sets the goals, and values, and acts as a role model; (ii) inspirational motivation, where the leader offers meaning to the tasks of the present and future, and articulate those with the organizational vision and missions; (iii) intellectual stimulation where the leader challenges assumptions and current practices of doing things and stimulates and encourages employees for creative solutions within the framework and parameters; and finally, (iv) personal and individual attention where the leader meets individuals, appreciates their contribution and acts as a mentor (Niessen et al., 2017).

Leadership during a crisis period, like the one the whole world has been facing since 2020, should have a strong role with clear directions, shared leadership, excellent communication skills, access to technologies, empathy and reflections on employees' emotional situations, maintaining employee and institution's financial stability and manages organizational challenges and resilience (Dirani et al., 2020). Research also echoed that leaders should respect culture and values, be empathetic, improve communication skills, and develop collegiality (McNamara, 2021).

The higher education sector has rapidly transformed from a traditional service delivery approach to online and remote delivery since 2020. Many higher education institutions and leaders carried out restructures and change management to adapt to the transformative changes streaming from the uncontrollable environmental forces affecting revenues. A transformative leadership style requires support from the policymakers, development partners, civil society, and other stakeholders, including employees of the organizations. It must demonstrate genuine empathy to the employees for the changes in their careers, personal lives, and organizational culture with respect and needs (Nugroho et al., 2021).

4.2 How HE Leaders Responded Covid-19 Crisis

The roles of leaders are paramount during a crisis period. The Covid-19 pandemic has been unprecedented, and never experienced this highly infectious disease. Hence, globally leaders used the learning by doing/testing approach in many instances. They primarily relied on national health and social distancing advice and government instructions. During the current pandemic, the higher education sector has seen tremendous challenges in student enrolment and progression, revenue and financial stability, curriculum development, digital delivery, technology adaptation, covid safety plans, research outputs, funding, and the like.

University leaders across the globe responded to these crises variedly, including job cuts and course/program cuts, and maintained the accounting balance sheet. In the Australian context, Andrew (2020, n.p.) stated that

...what we see instead is a sense of the horrific opportunities it offers those in power to skewer the powerlessness, and the loss of humanity and collegiality involved....because they have all been picked off (referring to those who were made redundant purposively by the HE leaders in the name of “voluntary redundancy”) one by one leaving no-one except bastard leadership.

Job cuts have some adverse effects, including incapacity to teach a growing number of domestic students and create new programs/courses, incapacity to maintain quality, reduced capability to quality research outputs, weaker international and domestic market position, and the like (Ketchell, 2020b). Besides, research suggested that laying off faculty and closing programs/courses would not balance university finances and instead would challenge universities’ teaching, research, student, business, and community missions (Ramlo, 2021). Some university leaders, on the other hand, take their campuses to overseas markets to reach international markets, and some maintain a status quo with digital/online delivery and Covid-19 safety plans and try to reduce impacts through controlled infrastructure and operational costs, cutting the specific percentage of executive and staff pay, reducing casual staff, and freezing new hire, research fund, and travel costs. In the developing and least developed countries, many universities were closed temporarily due to a lack of appropriate and scarce resources without job loss; for example, public universities and other educational institutions in Bangladesh were closed for nearly two years without job cuts (VOA, 2021).

4.3 Higher Education Leadership Beyond Covid-19

Yokus (2022) proposed a model illustrating what forms of educational leadership are expected by university students in the new normal or post-Covid period. Yokus’s proposed leadership model includes networking, improved educational systems, calmness and empathy, strategic thinking, and transparency. This proposed model emphasizes that social interaction and online communities, an inclusive learning environment, inspiration for learning, digital and F2F learning resources, optimism, leading under pressure, making data-driven decisions with analytics, safe and open dialogue, risk planning, and leveraging the capacity of the community are some guiding principles for the post-Covid higher education leaders.

A related study also found that the core leadership lessons learnt during the Covid-19 pandemic, including turning crisis into opportunity, finding ways to stay

productive, staying connected, open, and ongoing communication, and being adaptable or flexible, are suggested to be the areas of concentration for post-Covid higher education leadership (Chisholm-Burns et al., 2021).

Universities have social and community goals, and university leaders should aim to empower the community and give back to society. Leaders motivate and lead administrative departments to achieve greater and strategic outcomes. Regular interaction and effective direction can make universities sustainable during a crisis time. Universities should keep reprocessing the lessons learnt during the Covid-19 period as we approach the new normal.

5 Governance in Higher Education

University governance can be viewed from broader and narrower perspectives. The broader perspective includes the university's relationship with the state/country, leading to a new social contract, and the narrower perspective includes the constitutional laws and processes a university uses to govern its affairs through various bodies, such as senates, councils, academic/faculty boards, and meetings (Kwiek, 2015). Governance in HE is defined as the systems and procedures that direct and control universities (Leal Filho et al., 2021). Thus, governance in HE includes the organizational structure, decision-making, and communication processes involving all relevant stakeholders and ensures accountability, transparency, the rule of law, participation, stability, and equity in day-to-day operations.

5.1 Types of Governance in HE

Olsen (2007) proposed four types of university organization and governance styles. These are (1) rule-governed scholars' communities, (2) national political agenda-driven institutions, (3) representative democracy, and (4) service enterprises in competitive markets. The first type of governance follows scientific rationality and expertise and is slow in change. Change happens only with performance crises. The second type has pre-determined political objectives and achieves national and business purposes through strategic objectives and economic efficiency. The change happens through political decisions, priorities, elections, etc. Elections and internal interest representations drive the third type, and the change occurs through bargaining, conflict resolution, and change in power and interests. The fourth type and the final one focus on community service driven by market and price mechanisms. It meets community demands, offers flexibility, and brings economy and efficiency. For survival, it depends on external stakeholders and agencies, and thus, change happens due to competition and other changes in the external market forces.

5.2 *Governance in HE During the Covid-19 Pandemic*

The “managerialism,” marketization,” or “entrepreneurialism” approach to governance and leadership has been highly criticized in the Australian universities’ context during the Covid-19 pandemic. Australia has 43 universities, including two international and one private specialty university. Recently, during the Covid-19 pandemic, more than 600 academic staff from 36 universities signed an open letter to the federal and state education ministers to return to a democratic, cost-effective, and functional structure for Australian universities due to a large-scale planned “redundancies” in the Australian universities (Ketchell, 2020a). The justification for such a large-scale redundancy (>41,000 staff or almost 1 in 5 university staff) at universities in Australia was mainly because of the forecasted profit not meeting expected yearly targets due to the Covid-19 pandemic and international student numbers (Ketchell, 2020a; MacGregor, 2021).

It was reported that

the commercial, the corporate model has been revealed to be particularly fragile in the face of the present crisis (i.e., Covid-19). Many have advocated, over the years, that the structural fragility of Australian universities could have been mitigated by exercising more judicious, conservative, and careful management. However, the commercial corporatisation of tertiary institutions has disincentivised managerial elites from doing so. (Pelizzon et al., 2020)

Thus, university councils (senate) be more transparent and accountable to the university and communities they serve, and a more democratic governance structure and “horizontal university model” should return in practice (Pelizzon et al., 2020; Ketchell, 2020a).

5.3 *Governance Reforms*

Each country and institution follows a governance model that best suits them. For example, in the last two decades, China created a market for Chinese and international students in China and invited many leading international universities to the joint venture and codevelop new private universities; this increased from 37 private higher education institutions in 1999 to 757 in 2019 (Mok, 2021). This remarkably high growth in the Chinese market was possible in just two decades through controlled market mechanisms. The Chinese approach to governing their education market is “direct intervention,” often known as “governance with strong state presence,” and for their public sector management, it is through “bureaucratic governance.” In his study, he stated that “unlike its Western counterparts steering from a distance when governing the state-education market relationship, the state in China, in contrast, proactively creates the conditions necessary for the market(s) or even interferes in the “market” to reduce its inefficiency and accelerate market forces to facilitate the formation of the education market(s)” (Mok, 2021, p. 8).

Governance reforms take time and are often difficult to conceptualize and implement due to internal and external forces, competitive and market forces, increased regulations, and rankings requirements. Governance in HE is challenging to label solely as “marketization,” “entrepreneurialism,” and “managerialism,” and hence, governance should move away from one-dimensionality and emphasize one practical reality (Larsen et al., 2009). Current research in HE governance is scarce and needs more evidence to develop thorough analytical methods and narratives to understand ongoing and post-Covid-19 challenges (Larsen et al., 2009; Mok et al., 2021).

As can be understood in the above discussion, each governance style has some strengths and weaknesses; hence, there is no single approach to governance style that can be applied in the post-Covid-19 phase. What is more important is to narrow down the gap between management and academics and establish and ensure a social, trustworthy, transparent, and accountable relationship, which can help strengthen the governance structure in higher education.

6 The Future Of Innovation, Leadership, and Governance in HE

The HE sector is expected to face a vacuum in skilled academic and research leaders as baby boomers (aged between 61 and 76) accept retirement. This will influence innovation and good governance. In the post-Covid-19 era, universities would invest more in innovation, leadership, and governance. Educational innovations and creativity in the higher education context help mitigate the adverse effects and significantly improve the Universities’ performance by enhancing the efficiency of the staff (Adelowotan, 2021). Universities are expected to prioritize innovations in curriculum, programs, pedagogy, and digital delivery; skill-based learning; and mobile learning besides the traditional delivery modes and programs in the post-Covid-19 years. Therefore, the future research questions could include

- (a) What are the practical guidelines for digitally designed curriculum and pedagogy? How might it differ from the traditional design?
- (b) Which digital platforms, communication tools, traditional media, and social media best suit learners and academicians across countries? Is there an appropriate mix?
- (c) How best to transition from a traditional learning and teaching approach to a digitally enabled one?
- (d) What skills set across courses and programs will be developed for the learners in the post-Covid-19 era?
- (e) How could academics and learning designers work collaboratively to harness smartphones, LMSs, and social media sites for better learning design and delivery for mobile learners?

- (f) What factors to consider in recognizing and integrating micro-credentials for academic recognitions and degrees?
- (g) What leadership style is more appropriate for innovation and sustenance in the post-Covid-19 era?
- (h) Which leadership theory is better suited during a crisis period in HE?
- (i) How do HE leaders address Covid-19 academic, research, financial, and sustainable challenges in universities across countries?
- (j) Which HE governance types and models are preferred by stakeholders across countries? Why?
- (k) What relationships exist between leadership styles and their preference for governance types/models?

While innovation leads performance across industries, including higher education, what leads to innovation in higher education remains a challenging question. Good governance in HE is a part of a broader social system, mainly because higher education institutions are an essential social and economic agent that helps transform individuals, communities, societies, and countries. Leal Filho et al. (2021) stated that good management determines good governance. The author holds that good governance and leadership lead to higher education innovation, and governance types and leadership styles influence the relationship strengths between governance and innovation, and leadership and innovation, respectively.

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Chapter 2

The COVID-19 Dilemma: A Roadmap to Surmount Future Challenges in Higher Education



Samantha A. Thompson and Mary W. Johnson

Abstract In 2020, social, economic, political, and cultural environments across the globe were forever changed by the emergence and unprecedented spread of the novel coronavirus disease (COVID-19). The COVID-19 pandemic caused extensive disruptions worldwide in the business, health, and education sectors. This chapter will explore the salient COVID-19-related challenges experienced by HEIs around the world. Additionally, the authors will provide a strategic change management planning model (PULL Model) that Higher Education Institutions (HEIs) can utilize to surmount long-term difficulties and promote the resilience and sustainability of these institutions.

Keywords COVID-19 · Change management · Leadership challenges · Higher education · Pull model · The institutional paradigm shift

1 Introduction

For me, survival is the ability to cope with difficulties and circumstances and overcome them. ~ Nelson Mandela.

In 2020, social, economic, political, and cultural environments across the globe were forever changed by the emergence and unprecedented spread of the novel coronavirus disease (COVID-19). The COVID-19 pandemic caused massive disruptions worldwide in the business, health, and education sectors. The United Nations Education, Science, and Culture Organization (UNESCO) reported in

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_2

March 2020 that school closures impacted over 290 million students worldwide due to the pandemic. Before COVID-19, Higher Education Institutions (HEIs) faced multiple challenges from a rapidly changing labor market, technological landscape, and economic indicators (Hamzah, 2020). HEIs in the Global South continue to face steep uphill battles with addressing the challenges engendered by the pandemic.

Many HEIs in Africa, Asia, and South America are still attempting to close the digital divide gap. Several countries located in these continents continue to lag in terms of essential information and communications technology (ICT) infrastructure, government policies and regulation, interoperability, and digital skills (Ingram, 2021), all of which impede widespread access to broadband internet and reliable connectivity (United Nations, 2021). Unfortunately, over 3.6 billion people located in developing countries around the world do not have access to the internet, with the continent of Africa having only a 13.7% connectivity rate (Ingram, 2021). The higher education institutions in the Global South faced seemingly insurmountable challenges, even before the pandemic.

Remarkably, the South Asian country of India was devastated by the pandemic, with an unprecedented surge of infections causing high mortality rates, rampant job loss, and food insecurity. India has an extensive higher education network, with over 1000 universities and 40,000 colleges (University Grants Commission, 2021) required to contend with the crippling effects of over 34 million COVID-19 infections (Center for Systems Science and Engineering at Johns Hopkins University, 2021). The public health crisis in India has indubitably impacted the higher education landscape, where some experts believe that some of the damage to the education system is irreparable (Lau, 2021).

At the beginning of 2021, The World Bank warned that urgent action was required to suppress the education crisis caused by the pandemic on a global scale (The World Bank, 2021). According to The World Bank (2021), the COVID-19 pandemic has “exacerbated learning crisis and the impact on the human capital of this generation of learners is likely to be long lasting.” (p.3). Even HEIs in the Global North, comprising many world-renowned institutions, dealt with difficulties surmounting issues associated with the pandemic. Higher Education Institutions in the United Kingdom and the United States were forced to innovate to respond to unique challenges in their local environments. To reference President Nelson Mandela’s quote, Higher Education Institutions must adapt, cope, and overcome the socio-political and economic fallout from the pandemic to ensure their survival. The authors conducted an extensive review of the literature to explore the salient COVID-19-related challenges experienced by HEIs in India, the United Kingdom, and the United States. Additionally, in this chapter, the authors provide a new strategic change management model, the PULL Model, that they believe HEIs can utilize to surmount long-term difficulties and promote these institutions’ resilience and sustainability.

2 State of Higher Education Pre-COVID-19

According to the United Nations (2020a), the world faced daunting challenges before COVID-19. Preceding the pandemic, Higher Education Institutions (HEIs) conducted in-person classes. However, the novel coronavirus disease caused a significant interruption to colleges and universities. HEIs also faced financial instability before the pandemic due to unexpected costs and a possible revenue reduction (Smalley, 2020). Higher education institutions in the United Kingdom and the United States have historically depended on traditional economic models to remain viable and sustain their organizations over time. The advent of the COVID-19 pandemic exacerbated an already stressed education sector in these countries.

The United Kingdom is home to several top-ranked higher education institutions globally concerning scholarship, teaching, and research. However, the education sector is still navigating the unique socio-political impact of the United Kingdom's exit from the European Union, colloquially referred to as Brexit. As members of the European Union, students across that continent could previously migrate freely without restrictions to live and study in the United Kingdom. With new limitations in place because of Brexit, there has been a 40% decline in international student applications at higher education institutions in the United Kingdom in 2020 (Mitchell, 2021). Moreover, in 2021, British Universities experienced a precipitous decline in European Union student placements 2 weeks after results day, from 27,510 to 11,390, constituting a 59% decrease (McKie, 2021). Unfortunately, Brexit is not the only challenge facing the higher education sector in the United Kingdom. Increased competition from international education providers in Canada and Australia resulted in increased market share for these countries in 2021. In the United States, most public colleges and universities must meticulously balance ever-changing levels of state appropriations and revenue generated from tuition and fees to operate successfully (Wiley, 2021). In recent years, many higher education institutions in the United States have grappled with low student enrollment, financial difficulties, and a decrease in world rankings (Wiley, 2021). To pinnacle these concerns, new international student enrollment, which constitutes a large percentage of revenue for HEIs, plummeted by 72% in 2020 compared to 2019 (US Immigration and Customs Enforcement, 2021). Specifically, there was a 91% decrease in new international student enrollment in August and September, typically the months with the highest influx of international students.

This decline in enrollment is a challenge for US HEIs because international students collectively contributed \$38.7 billion to the US economy and supported over 415,000 jobs for the 2019–2020 academic year (NAFSA, 2021). Most international students enroll in four-year colleges or universities; however, according to NAFSA (2021), those who attended community colleges helped contribute \$2.3 billion to the U.S. economy. Moreover, students from China and India, who comprise 74% of the total international student population in the United States, were directly impacted by travel bans and restrictions related to COVID-19. These challenges require HEIs to adapt to significant change disruptions to remain sustainable.

3 State of Higher Education in the Global South Pre-COVID-19

Before the onset of the pandemic, most higher education institutions in developing countries faced both myriad and distinct challenges compared to their counterparts in the Global North. This phenomenon has been attributed to the center-periphery dynamic (Altbach, 2016), where highly ranked and well-funded HEIs predominantly situated in the Global North engage in esteemed research, retain top-tier scholars, and are responsible for the ideation and dissemination of expertise in the global knowledge economy (Thompson, 2018). Conversely, HEIs in the Global South(peripheries) have been plagued with low funding levels, sub-par institutional rankings, poor infrastructure, and less recognition within international contexts. As a result, many institutions in the Global South are grappling with issues related to having less global influence, teaching quality and effectiveness, smaller percentages of research contributions, and attracting high-quality faculty and students (Thompson, 2018). With academic, financial, and technological resource constraints, HEIs must overcome multifaceted complexities to survive in the Global South. In addition, faculty at these institutions face an increased workload due to high faculty-to-student ratios, minimal resources, low wages, and antiquated technology (Suresh & Kumaravelu, 2017).

4 How COVID-19 Impacted Higher Education

The novel coronavirus disease has had a staggering impact on education worldwide. The United Kingdom (UK) has been impacted by COVID-19 in the higher education sector resulting in a reduction in enrollment at UK universities, with the outcome being significant among overseas students (Popov & Isard, 2021). The factors of social distancing and restricting face-to-face teaching impelled many courses to move online. Many international students were reluctant to pay high international tuition and fees to study at a UK university from their homes (Popov & Isard, 2021). In addition, the complications of travel due to further COVID-19 outbreaks also limited the number of international students willing to travel to the United Kingdom (Popov & Isard, 2021).

In the United States, the COVID-19 outbreak has caused significant disruption to colleges and universities, with many institutions terminating in-person classes and moving only to online instruction. HEIs' essential functions were affected, and more than 1300 colleges and universities in 50 states canceled in-person classes or navigated to online courses only due to the pandemic (Smalley, 2020). Since the pandemic's beginning, admissions and enrollment have become a concern because of the restrictions placed on tours and campus visits and various standardized testing services that are integral to the college admissions process. In the late spring, both caused significant disruption. Deadlines were extended for admission by more

than 300 schools, with the ACT/SAT requirements being waived by many institutions to give students more time to decide. However, freshman enrollment in fall 2020 declined by 13.1% despite the newly implemented incentives (Smalley, 2020). Maintaining high academic rigor and quality were additional challenges that accompanied a remote instructional environment. According to Smalley (2020), earlier studies cautioned that previously scholastically challenged students could be at a disadvantage in online courses. The retention of students is also an area of concern following a recent survey conducted by the Lumina-Gallup Student Study in 2020. This study showed that of the 3941 students pursuing a bachelor's and 2064 pursuing an associate degree, nearly half of currently enrolled students said that it is likely or very likely that COVID-19 will negatively impact their ability to complete their degree (Marken, 2020). Many students could not access effective technology and reliable high-speed internet during the pandemic. To assist in the technology gaps, some colleges assisted students lacking access to an internet connection, including opening university libraries on a limited basis and distributing mobile hotspots to students (Smalley, 2020).

4.1 Current COVID-Related Challenges in Higher Education

The unprecedented spread of COVID-19 and the emergence of the Delta Variant in 2021 have prolonged the negative impact on higher education institutions in the United Kingdom, the United States, and India. Several intergovernmental organizations, including the World Bank and the United Nations, the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the World Health Organization, recognized the urgency and mobilized to respond to the challenges of the pandemic.

The United Nations Comprehensive Response to COVID-19 report stated:

The pandemic is more than a health crisis; it is an economic crisis, a humanitarian crisis, a security crisis, and a human rights crisis. It has affected us as individuals, as families and as societies. The crisis has highlighted fragilities within and among nations. It is no exaggeration to suggest that our response will involve remaking and reimagining the structures of societies and how countries cooperate for the common good. Coming out of this crisis will require a whole-of-society, whole-of-government and whole-of-the-world approach driven by compassion and solidarity. (United Nations, 2020b, p. 1).

Overcoming the challenges of COVID-19 and managing the changes needed because of its presence requires an integrative, collaborative, and comprehensive response for resilient systems with enhanced preparedness for future calamities.

In the United States, there was widespread job loss at the height of the pandemic, and many families were grappling with the rising costs of education while faced with a significant loss of income. Additionally, the initial low vaccination rates in the United States intensified challenges for HEIs to navigate the nuances of resuming in-person classes and returning to some semblance of normalcy. As lockdowns

extended, the death toll continued to rise, and restrictions remained in place for many parts of the Global North and South; HEIs were also forced to address unique stresses and trauma that students, faculty, and staff were experiencing. The switch from in-person to remote instruction amid the COVID-19 pandemic took a tremendous toll on students and faculty and engendered new mental health challenges.

4.2 COVID-19 Variants

Since the outset of the pandemic, there have been a multiplicity of new coronavirus strains with 11 major detected variants of COVID-19: Alpha, Beta, Gamma, Delta, Eta, Theta, Lambda, Mu, Epsilon, Iota, and Omicron. However, the Delta variant, which has proven to be both highly communicable and incontrovertibly dangerous, is now present in over 85 countries worldwide (Centers for Disease Control and Prevention, 2021). The presence of the Delta variant has exacerbated already heightened levels of uncertainty at HEI campuses across the globe. Although it was first detected in India, it quickly became the dominant strain in the United Kingdom, causing widespread hospitalizations and deaths (Torjesen, 2021). At the inception of infections, it was apparent that the Delta variant affected a new cross-section of population demographics, bringing high youth positivity rates previously unseen with prior variants. Specifically, the youth test positivity rate was five times higher than the elderly, which was a clear divergence from the Alpha variant (Van Beusekom, 2021). Additionally, the Delta variant comprised over 1.3 million cases in the United Kingdom, with 492,725 infections from October 2020 to August 2021 (UK Health Security Agency, 2021).

In June 2021, the Delta variant had an initial infection rate of 25% of all coronavirus cases in the United States. However, there was an exponential infection rate increase in the months following to 99.4% of all COVID-19 cases in the United States (Murez, 2021). The high transmissibility of the Delta variant necessitated novel guidance from the US Centers for Disease Control and Prevention (CDC) that encouraged continued mask-wearing and vaccinations (CDC, 2021). At many universities in the United States, the Delta variant required mask mandates and vaccination requirements for faculty, students, and staff members (Jaschik, 2021).

As India's second wave of infections swept over the country, the number of positive covid-19 cases surged to 315,000 in 1 day, the single highest daily number in any country recorded since the beginning of the pandemic (The Economist, 2021). As a location that manufactures the AstraZeneca vaccine, the Serum Institute of India defaulted on vaccine shipments to the United Kingdom and the European Union in April 2021. Notably, vaccines manufactured by India also slated to be delivered to the Global South via the World Health Organization's COVAX initiative were stalled due to the surge of COVID-19 cases (The Economist, 2021). In this case, the Delta variant's presence in just one country created innumerable negative ramifications across the globe.

In November 2021, South African scientists discovered a new Covid-19 variant, Omicron, through advanced genomic sequencing and had since been identified in at least 15 states across the United States, with those statistics expected to rise (Bursztynsky, 2021). The Center for Disease Control and Prevention has labeled Omicron as a variant of concern, just like the Delta variant. It will be studied to ascertain its transmissibility and reactions to the current vaccines (Center for Disease Control and Prevention, 2021). Although 99% of the new COVID-19 cases in the United States are still linked to the Delta variant, Omicron adds another layer of complexity to an already strained health care and education system. HEIs must now contend with the uncertainty of new viral mutations and the potential impact on academia in 2022.

4.3 COVID-19 Vaccination Rates

Despite the rising Delta variant cases, there have been relatively low vaccination rates in the United Kingdom and the United States. Fearing a repeat of the high infection rates on their campuses in 2020, universities and colleges in the United Kingdom took steps to mitigate the spread of COVID-19. During the summer in the United Kingdom, the University and College Union (UC) requested complete vaccination of all students and face mask mandates on campus to curtail the spread of the Delta variant at their institutions (Weale, 2021). The United States suffers from low vaccination rates in crucial states: Idaho, West Virginia, Wyoming, Mississippi, North Dakota, and Louisiana (Rezal, 2021). However, approximately 1000 public and private universities took an adamant stance on vaccine mandates for the fall 2021 semester. While some mandated the vaccine requirement for faculty and staff and strongly encouraged students to vaccinate, many institutions ambitiously sought to get 100% compliance from their student body (Rezal, 2021).

Over the summer, when many HEIs announced the mandate, many wondered if it would stay in place if a substantial number of students boycotted enrollment because of the vaccine requirement. Institutions have employed multiple approaches to address students who have not complied with deadlines for the mandate, including disenrolling students from classes, providing grace periods, and making additional COVID-19 testing compulsory (Redden, 2021). Overall, there has been substantial compliance with the vaccine mandates at Ivy League institutions, with Harvard University reporting rates of 93% for students and 95% for employees. Cornell University and Brown University have also reported that 95% of faculty and staff are fully vaccinated (Nietzel, 2021). In well-known public institutions, such as Pennsylvania State University, Virginia Tech, and the University of California -Berkley, the student vaccination rates vacillate from 86%, 95%, and 97%, respectively. It is important to note that the University of Vermont reached full compliance with 100% of its student population being fully vaccinated for the fall semester (Nietzel, 2021).

While the vaccination rates continue to improve, these HEIs are not a microcosm for vaccination rates in society. Many institutions are dealing with lawsuits stemming from vaccine mandates, including George Mason University, the University of Connecticut, Indiana University, California State University, and the University of Massachusetts Lowell (Bloomberg Law, 2021). While some of these cases were dismissed, this occurrence highlights the contemporary and high-impact challenges that continue to be created by the presence of COVID-19 and how HEIs must manage changes in their internal and external environments. Additionally, 12 U.S. states have banned HEIs from requiring vaccinations despite high COVID-19 infection rates in some areas. Arizona, Idaho, Ohio, Montana, New Hampshire, Tennessee, and Utah have banned public HEIs from implementing vaccine mandates (Bloomberg Law, 2021). As HEIs continue to experience high COVID-19 rates on their campuses, they must use new strategies to navigate the inevitable academic, operational, and health challenges.

4.4 Remote Learning and Technology

HEIs were compelled to switch to remote classes almost overnight when the pandemic disrupted traditional face-to-face instruction. HEIs were forced to acquire and invest in various video conferencing software platforms for their campuses and the requisite hardware (video cameras, microphones, and headsets) to ensure academic continuity after the COVID-19-mandated shutdowns in 2020. Remote education necessitated an opposite infrastructure, which entailed video conferencing software that could be used collaboratively, for example, Zoom and Microsoft Teams, Skype, Google Hangouts, Google Meet (Mishra et al., 2020), and learning management systems such as Blackboard and Moodle (García-Morales et al., 2021). Utilizing user-friendly and agile software to facilitate the necessary transitions was essential. Moreover, HEIs also had to invest in backend technology and servers to support the additional user traffic on their systems. Faculty members had to instantaneously modify pedagogical approaches, increase the quantity and differentiation of supplementary course materials, and deliver student support and mentoring through remote channels. Moreover, students were forced to adjust to a new learning environment and utilize novel technology while dealing with the uncertainty outside the classroom. These quick changes to the academic status quo engendered new faculty and student burnout issues and mental health and wellness challenges.

4.5 Remote Work Challenges

Making opportunities available for employees to work remotely, maintaining productivity, and having sufficient student support services currently rank among the top concerns for HEIs. The difficulty of these challenges occurs due to certain institutions' ability to facilitate remote work before the pandemic and the level of

stringency as directives are put into place for employees' return to campus (Bichsel et al., 2021).

HEI leaders were unprepared for a mass exodus of employees and are now encountering problems filling vacated positions. During the pandemic, some employees who once commuted every day and then began working remotely had no desire to return as five-day-a-week commuters. Working remotely provided flexibility, and supporting data substantiated that: 1) productivity while working remotely is better, and 2) there was a reduction in stress due to the flexible work arrangements (Bichsel et al., 2021 p.1).

In August 2021, the College and University Professional Association for Human Resources conducted a study to ascertain if remote work options would assist in retaining HEI employees. Fifty-one percent of study participants reported work misalignment, indicating that they prefer more remote work options than currently available at their respective HEIs (Sziron, 2021). Moreover, the study data revealed that nonleadership staff members were likelier to seek other employment opportunities outside of higher education. Consequently, to retain competent and dedicated employees, HEIs will need to consider including hybrid work options, which might become the status quo in higher education (Bichsel et al., 2021).

4.6 Mental Health Challenges

The presence of the novel coronavirus created new mental health predicaments for HEI and their communities. A recent survey conducted by a national mental health advocacy group in 2020, Active Minds, revealed that 80% of college students believed that COVID-19 negatively impacted their mental health (Brown & Kafka, 2020). 91% indicated that the pandemic created stress or anxiety; 81% responded that they felt disappointment or sadness, while at least 80% experienced loneliness or isolation (Brown & Kafka, 2020). The uncertainty stemming from a new contagious disease with an initial high mortality rate and unknown effects for those who survive infection added to many students' stresses of completing their semester. As a result of the mandated shutdowns across the United States, students were disappointed in their inability to immerse themselves in various social gatherings, sports, and student organization groups that are an integral part of the university experience. Some described it as grieving the loss of normalcy, routine, and social connections (Ellis, 2020).

The switch from in-person to remote instruction has taken its toll on student and faculty groups and engendered new mental health challenges. The American Council on Education surveyed college and university presidents to ascertain some of the top concerns and challenges at the forefront of their minds due to the pandemic. Of 14 available issues, mental health ranked fifth overall, with 41% of presidents identifying students' mental health as a concern (Turk et al., 2020). Internationally, intergovernmental organizations noted the rise of mental health challenges stemming from COVID. Audrey Azoulay, the Director-General of UNESCO, highlighted the mental impact of the pandemic:

Prolonged and repeated closures of education institutions are taking a rising psycho-social toll on students, increasing learning losses and the risk of dropping out, disproportionately impacting the most vulnerable. Full school closures must therefore be a last resort and reopening them safely a priority. (UNESCO, 2021, p. 1)

Zhai and Du (2020) highlighted that students experienced heightened feelings of stress, loneliness, and isolation during the pandemic-related school closures in 2020. Students were disconnected from friends and family and faced various academic, health, and employment uncertainties. Students also experienced problems related to the restrictions imposed by COVID-19 outside the classroom. The survey found that 76% of the students struggled with maintaining a routine, and 73% wrestled with finding time for their physical health (Brown & Kafka, 2020). COVID-19 caused numerous school shutdowns, and HEI students had employment disruptions, which exacerbated financial stress. In addition, campus closures and lack of access to counseling services worsen the distress of the students utilizing these amenities and can increase the risk of suicide or substance abuse (Zhai & Du, 2020). The mental health needs of faculty, staff, and students created an entirely new host of challenges for institutions and mandated a new approach that incorporates mindfulness as an integral part of institutional operations.

4.7 Change Management and COVID-19

For centuries, businesses across sectors have grappled with significant fluctuations in their internal and external environments that require adequate methods to address challenges and concerns. Higher Education institutions are no different in this regard and must become learning organizations that can adeptly manage current and future changes in the educational landscape to promote their resilience. As HEIs face this looming existential crisis, strategies to plan for, manage, and implement change must come to bear. The current change models differ in approaches and include ADKAR Change Management Model, The McKinsey 7S Framework, Lewin's Three Steps Change Model, and Kotter's Eight Steps Process for Leading Change (Caredda, 2020). Amid COVID-19, HEIs faced many other problems, requiring an appropriate strategy to navigate and overcome future challenges. The authors believe that the current issues have engendered the need for a new roadmap and have created a strategic change management model to PULL themselves over imminent challenges.

5 Roadmap for Future Challenges

Innovation is a significant component of the path for higher education recovery from the pandemic. The authors posit that the advent of the COVID-19 pandemic necessitates reviewing the process of managing organizational change through a



Fig. 2.1 Pull model. (Source: Authors prepared for this chapter)

new lens. While all previously established models hold merit and provide strategies for potential success, the novel coronavirus has shed light on the fallacy of control throughout the change process. To surmount future challenges, the authors created a model for HEIs to PULL themselves. They should focus on the following strategies illustrated in Fig. 2.1: Institutional Paradigm Shifting and Goal Setting, Understanding Core Competencies and Integrating Mindfulness, Vicarious Institutional Learning and Leveraging Technology (PULL Model).

5.1 Institutional Paradigm Shifting and Goal Setting

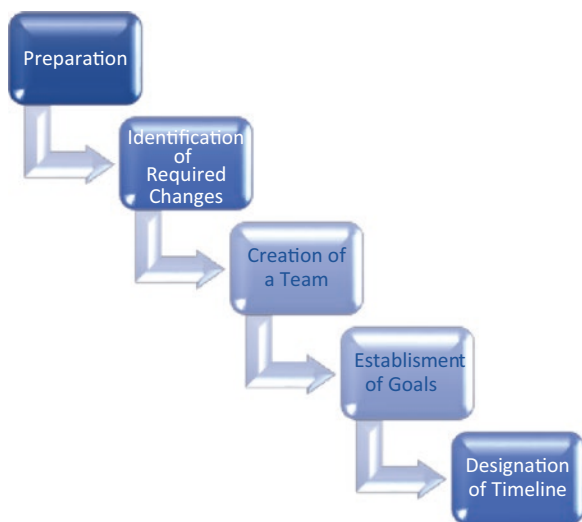
Institutional paradigms are social structures involving rules, regulations, or authoritative guidelines that shape how the organization looks or acts (Tolbert & Hall, 2009). A paradigm is a model or pattern and is very useful because it allows the development of expectations regarding what can occur based on assumptions. When a paradigm shift happens, situations are seen from a different perspective, focus occurs on other aspects of phenomena, and an effectual change is created. A paradigm shift needs to occur at all administrative levels of HEIs with the emergence of COVID-19. HEI senior leadership, middle management, faculty, and staff must all

realize that the tertiary education environment has been changed, and new strategies, approaches, and models must be implemented for future sustainability. Traditional approaches to pedagogy, operations, technology, and fundraising, must be reworked to address a new status quo. At this critical juncture, a paradigm shift is the only way to ensure that HEIs continue to achieve their core missions and visions and uphold their institutional values and philosophies.

Paradigm shifting occurs when significant changes are grounded on the actions and perceptions of either individuals or groups, which necessitate replacing the old with the new method of thinking, believing, and performing. A drastic shift occurred at HEIs concerning instructional modality when changes from in-person to virtual or hybrid classes were implemented to ensure the continuance of student learning (Broz, 2020). Virtual courses provide flexibility, convenience, and accessibility for most students, which may positively impact student learning outcomes. HEIs should address the COVID-19 crisis at hand and plan for a long-term visionary goal to change HEIs' education environment while looking to a future state of a more combined learning experience. Blended learning is a practice that utilizes both online and in-person learning experiences when teaching students. The best practices implemented by other HEIs who have acquired the knowledge and been successful in blended learning programs should be utilized at all HEIs. This will strengthen our future generation of workers and would be a true paradigm shift in HEIs, transforming its path for generations to come. COVID-19 brought about significant changes in the operations of HEIs and necessitated institutions to change their well-established modus operandi to ensure success in their institutions.

The Institutional Paradigm Shifting and Goal Setting Process is a concept that, if used by institutions, can repeatedly be implemented in other areas. Figure 2.2 can be employed in an institutional paradigm-shifting and goal-setting process and would be a helpful model for HEIs to consider grounded on the supporting elements

Fig. 2.2 Institutional paradigm shifting and goal setting process



incorporated. It can be utilized as a roadmap that will enable institutions to apply this concept and, if acted upon, achieve those goals projected.

5.2 Preparation

The steps of a paradigm shift begin with the Administration. It is during this process that research is performed to determine (1) identification of required changes, (2) creation of a team to include individuals throughout the institution with different skill sets, (3) establishment of goals, and (4) designation of the timeline.

5.3 Identification of Required Changes

Change is one of the most complex concepts to grasp and should be assessed continuously. HEIs must determine what is working, not working, could work, and who will be impacted by those changes on their campuses. This process can be accomplished by reviewing current policies and procedures to identify where changes are required. In addition, HEIs must be prepared for unexpected developments that may be triggered due to those changes.

5.4 Creation of a Team

The team managing and implementing changes at HEIs should be cross-functional and consist of individuals with diverse experiences from all institution levels, including senior-level administrators, faculty, staff, and students. This team composition will provide broader ideas and new perspectives and bring together individuals from varied backgrounds. Training sessions should be designed to introduce and educate the team on the required changes, and an action plan of expectations and responsibilities to team members should be provided.

5.5 Establishment of Goals

While goals vary and can be unique from institution to institution, the goals established should be (1) specific, since mission statements provide goals to keep one focused, this will enable goal setting to be specific, and (2) measurable to ensure that the goals are measurable and effective, several benchmarks should be created to track progress toward goals, and (3) relevant, to address future challenges, the goals should apply to the institution.

5.6 *Designation of Timeline*

Finally, and most importantly, a timeline must be designated for implementing changes at the institution. Change management fails when leaders do not provide timelines, creating expectations that can lead to an unsuccessful change. The designation of timelines keeps the team focused on the established goals, ensuring that those goals are measurable in various areas and that those goals are relevant to the institution.

5.7 *Understanding Core Competencies and Integrating Mindfulness*

HEIs must identify and highlight their respective competitive advantages during the current crisis. They must identify and exhibit what they can do better than other HEIs. Their capabilities will provide a strong foundation that will enable them to deliver value to the students, faculty, staff, and community. HEIs should regularly conduct SWOT (Strength, Weaknesses, Opportunity, Threats) Analyses to identify core competencies that can be highlighted in recruitment strategies for future students.

COVID-19 has brought uncertainties regarding the future and threats to life's physical, social, emotional, and financial facets. Mental health outcomes have been impacted because of the pandemic, and the institutional cultivation of mindfulness is essential. Mindfulness can help employees at HEIs improve their responses to students and stakeholders in wiser, inclusive, and more compassionate ways. HEIs' response to the COVID-19 pandemic relies on the executive leaders, whose distinctive reaction to the crisis will affect their institutions for an extended period. There was a concern regarding students' mental health before the crisis; however, since the crisis, a new level of anxiety and seclusion has been imposed, with a need to consider short- and long-term planning. Strategies to institute mindfulness will assist in recognizing current situations without being carried away with strong emotions. There are important questions to be considered: (1) what are the needs of students now and when they return to school, (2) how will the decisions by HEIs leaders affect the mental health service delivery as well as prevention and wellness, and (3) will the mental health service delivery be well received?

5.8 *Student Needs*

When HEIs combine their core competencies with mindfulness strategies by showing compassion, caring communications, understanding, encouragement, and directions, this augments the value proposition for future scholars. The uncertainty of

academic options and what those options mean for their future has baffled students; guidance and mental health support are needed to point students in the right direction. The decisions by leaders should target and seek out communication channels for the underrepresented populations, who face more significant stigma about seeking assistance. Universities could provide a “Let’s Talk Hot Line,” allowing students to speak with professionals regarding their issues or concerns and give students privacy. To reduce stigmas associated with seeking mental health services, HEIs can make information widely available and have it discussed regularly as part of institutional culture.

Additionally, university leadership must provide sufficient flexibility and accommodations and invest in the necessary resources for affordable and accessible mental health and wellness programs. Leaders should be transparent with students by communicating the plans for mental health support if needed and the new practices and protocols that have been set in place for future crises. HEIs must be a community to assist students, faculty, and staff through healing and recovery. The authors believe there will be positive responses to mental health service delivery and prevention if leaders consider faculty and staff’s mental health and well-being. These members are on the front lines of serving and supporting students, leading the charge during these unfamiliar times. They are the primary contact for students within the institution. Supporting the faculty and staff is one of the most effective ways leaders can support students. This requires having faculty integrate these discussions in the classroom, including mental health information on their syllabi, having staff incorporate mental health resources in student orientations, and information disseminated through student organizations. HEI leaders must know that these members are also trying to maintain a sense of normalcy despite experiencing their uncertainties, fears, and anxieties. Leaders must ensure that mental health for faculty, staff, and students is included in the strategic plan. In addition, providing response-skills training and adequate resources for faculty and staff would be an option. It will send a clear message that everyone can contribute to a healthy campus as they PULL together.

5.9 Vicarious Institutional Learning

Vicarious learning is a way that allows individuals to learn from the experience of others. It is an awareness process involving sensing, feeling, understanding what people are doing, taking notes, and evaluating each situation on a case-by-case basis. HEIs facing the COVID-19 pandemic should intentionally learn from the lessons of other institutions’ experiences if they plan to adopt and disseminate best practices for students, faculty, and staff. It has been a struggle for HEIs to acquire the needed information and skills to meet the challenge of providing high-quality education during this pandemic. To respond successfully to a pandemic relies on vicarious learning, which occurs through being exposed to and making sense of others’ experiences and applying the lessons of those experiences to the situation at hand.

As HEIs continue to strive to maintain quality education, they must begin to collaboratively come together, share their knowledge, learn from others' innovations, and enhance their institutions. Learning from others in this environment requires more interaction and ongoing discussions between those conveying the experiences and the recipients learning from them.

HEIs leaders must innovate and invest in the requisite technological infrastructure for institutional vicarious learning to share knowledge and best practices before the next global pandemic or crisis arise. Institutions should build stronger relationships with other institutions by encouraging their faculty and staff to engage in vicarious learning with peers from other institutions. Digital conferences, workshops, and seminars are excellent learning tools for virtual knowledge sharing, increased partnerships, and learning relationships and are a perfect avenue for vicarious institutional learning. When these relationships have been established, they can be conducive to quick vicarious learning during times of crisis because the institutions already share a preexisting nexus (Myers, 2020). The crux of the matter is that vicarious learning is essential to the PULL model and integral to overcoming future challenges in higher education.

5.10 Leveraging Technology

HEIs need to adjust their academic value proposition in a post-Covid-19 world. HEIs that effectively leverage technology and make significant changes to their operations will invest in their ability to sustain their long-term viability. Essentially, when an organization embraces the power of technology, the investments can pay off in an "exponential return" (Barton, 2014, p. 1).

There is now a new understanding and appreciation of the impact on the learning experiences through external forces. There are now more online classrooms, so students and educators must be given the technological resources to form meaningful relationships and maintain consistent learning experiences. The shift in academic instructional modalities provides educators with a unique opportunity to ensure that these experiences are positive, user-friendly, and deliver better student engagement. HEIs' early investment in digital technology and software to provide academic support and resources will proactively engender class interactions that can enhance student confidence, augment faculty and student capabilities, and ultimately improve learning outcomes.

There are several ways to ensure that HEIs can leverage technology effectively. HEIs should conduct a campus-wide technology assessment to ascertain what is needed and how soon those needs can be met. For the academic technology needs, new instructional technologies that will serve the institution in the long term should be identified, reviewed, and compared based on cost, utility, features, user-friendliness, and the potential for easy integration and adoption by faculty and students. Additionally, HEI leadership should integrate technology planning as part of their strategic planning, paradigm-shifting, and goal-setting processes. Utilizing a

collaborative approach, HEI leadership should cultivate an institutional culture that fosters the exchange of technology improvement ideas to remain current on available options and encourage continuous technological improvement. Moreover, a system of evaluating the efficacy of implemented technologies should be established to collect data that can be utilized to make informed future decisions. When HEI leaders actively invest in technology, they simultaneously situate their institutions to remain sustainable in the years ahead.

6 Conclusion

With the emergence of new COVID-19 variants such as Delta and Omicron, the only certainty in the future of higher education is that HEIs will need to be adept at managing change, overcoming challenges, and subverting future crises to remain viable. As HEIs seek to navigate future issues, it is critical that the strategies of Institutional Paradigm Shifting and Goal Setting, Understanding Core Competencies and Mindfulness, Vicarious Institutional Learning, and Leveraging Technology are implemented. Future research can be conducted on how utilizing the PULL Model (Thompson & Johnson, 2023) has helped tertiary institutions navigate and manage change in their organizations. Until then, HEI leadership must continue to be resilient, innovative thinkers, and remain focused in preparation for future crises that may take place in the educational landscape. When HEIs leaders communicate with each other to share knowledge, best practices, and experiences, they ultimately PULL together, and it then becomes clear that they are not surmounting these crises alone.

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Chapter 3

Is the UN's Quality Education Goal for Tertiary Level (SDG-4.3) at Stake Due to the Covid-19 Pandemic?



Tasmiha Tarafder and Sehrish Shahid

Abstract This chapter aims to understand the complications and coping mechanisms during the Covid-19 pandemic between 2020 and 2022 in higher education. Bibliometric analysis has been conducted to demonstrate a rigorous literature review. Peer-reviewed journal articles, scholarly books, grey reports as organisational reports, and online materials were sourced from Scopus, google scholar, and RMIT databases. The keywords for searching and selecting included Covid-19, higher education, and SDGs. It also examines the education framework using the UN's quality education goal (SD4). The literature and review process include the difficulties educational institutes across developed and developing countries face in achieving the SDG4 goal. This poses a more significant challenge for educational institutes, educators, and students since they need to cope with the new learning mode. To combat the challenges, the chapter provides unique insights for educational institutions to resolve the post-Covid-19 challenges in the higher education sector.

Keywords SDG · UN · Covid-19 · MDG · Higher education · Online learning

1 Background

Education is considered a future investment for individuals in economically driven countries (Zajda, 2009). Significant changes are observed in higher education owing to globalisation and competitive market forces. Owing to these challenges, the education sector must embrace the corporate ethos of efficiency, performance, and

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_3

profit-driven managerialism. The state and the context of education have also been reformed by the influence of human rights-based development with the implication of the United Nations Millennium Development Goals (MDGs) and the more recently 2015 Sustainable Development Goals (SDGs) (Omwami & Rust, 2020). Among 17 SDGs, SDG-4 delivers, ensures, and promotes quality education, and it provides inclusive and equitable quality education and promotes lifelong learning opportunities for all (Rajabifard et al., 2021). SDG 4 has seven targets and three streams. This chapter will look into SDG4 (3), which integrates technical and vocational education and training (TVET) and tertiary education as central concepts and agendas. Target 4.3 of SDG focuses on lifelong learning opportunities that can help and ensure youth and adults continue to evolve and contribute to sustainable economic development. The target also introduces the concepts of access, affordability, quality, and disaggregation by gender (UNESCO report, 2018).¹ Covid-19 created a mismatch between SDG goals targets, which have long-term effects. The UN (2020) report outlines that higher education ensures economic and non-economic growth societies, with a broader relationship with the individual and community. The aim of SDG 4.3 stream indicates that trained tertiary teachers and students can contribute to the training of health workers as outlined in the target SDG 3, ‘Substantially increase health financing and the recruitment, development, training, and retention of the health workforce in developing countries, especially in the least developed countries and small island developing States (UN, 2015). Thus, the broader vision of SDG 4 and SDG 3 goals are inter-related in terms of inclusive education, promoting healthy lives, and well-being for all (Unterhalter & Howell, 2021).

The trajectory of SDG4 faced a standstill in the year 2020, which created significant disruption in the tertiary education sectors and affected billions of learners and countries across the globe (Chabbott & Sinclair, 2020). Schools, colleges, and higher education were affected due to the Covid-19 pandemic worldwide. The crisis has aggravated the pre-existing disparities in the education sector by limiting the opportunities for young learners in developing countries, which includes the most vulnerable children, youth, and adults – people living in rural areas, girls, refugees, persons with disabilities, and forcibly displaced persons – to continue their learning (Wilke et al., 2020). The recent UN report (Policy Brief: Education during Covid-19 and beyond) explains how these changes would impact nearly 23.8 million children and youth (primary to tertiary) who may drop out or not have access to and resources to attend school next year. The pandemic took away 20 years of the education system’s achievement, and there will be a long-term effect on the pedagogical world (UN, 2021). According to the UN 2021 report, 90% of students did not attend school; distance education was not accessible for 500 million students. The effects of the pandemic were mentioned as the “catastrophe of the generation” (UN, 2021).

The new normal of higher education that the developed and developing countries were particularly facing was mainly the status of uncertainty in the future direction, in terms of student enrolment, job redundancy of academics, the level of lockdown, and the extension of lockdown, the campus closure and the mixed feeling regarding

¹UNESCO Link.

the re-opening phase and most importantly the online student engagement. Thus, this chapter explores why the UN's quality education goal for tertiary level (SDG-4.3) is at stake due to the Covid-19 Pandemic. The following are the objectives of the chapter:

- To understand the context of tertiary education during the Covid-19 pandemic
- To describe SDG 4.3 in detail

2 Methods

Firstly, we used the conceptual framework (Table 3.1) to conduct a brief and rigorous extant literature review to follow and guide the coding and filtering process (Fig. 3.1).

Secondly, various terms were categorised such as SDG 4, higher education, "UN," "Covid-19," "barriers," "higher education," "health," and "mental health" to identify and filter literature published from 2020 till January 2022. Thirdly, to understand the methodology of the extant literature review, it was essential to explore the relationships of the terms that are applicable in the study, such as the relationship between "higher education and Covid-19," "barriers of Covid-19 on education," "Covid-19" and SDG goal 4.4.3. Furthermore, most importantly, we conducted a bibliometric analysis to search peer-reviewed journal articles, scholarly books, grey reports as an organisational report, and online materials found only in English. This search and filtering resulted in identifying 397 papers on the topic of this study in the google scholar database and 2000 papers in the Scopus database. Figure 3.2 shows the keyword association for each search cluster, the network of the keywords listed by authors, and the association between the keywords within and across the research disciplines from 2020 to 2022. Covid-19 became the central cluster that relates to or dominates the other cluster. Higher education and mental health become the other semi-clusters influenced by the sizeable Covid-19 cluster.

The VOS viewer software uses Elsevier's Scopus database, which identifies the cluster of studies relevant to a study in context (van Eck & Waltman, 2010). The main advantage of VOS viewer analysis is that it has a "non-intrusive" nature, using the literature generated in a scientific/non-scientific field to identify and visualise

Table 3.1 Methodology for the study

Phase 1	Identifying the aim and objectives Background to the chapter Research question and objectives
Phase 2	Bibliometric process for conducting a literature review Using VOS viewer for the bibliometric analysis Selecting abstract and title in the VOS software Filtering keyword Filtering cluster
Phase 3	Synthesising the information Finalising the extant literature review

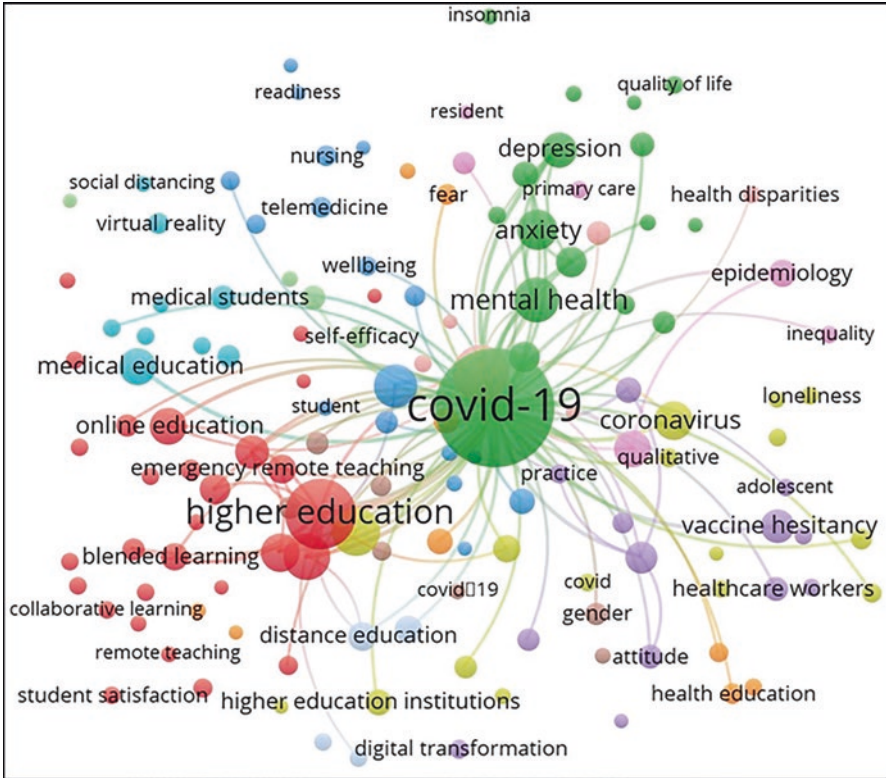


Fig. 3.1 Covid-19 and its impact on higher education

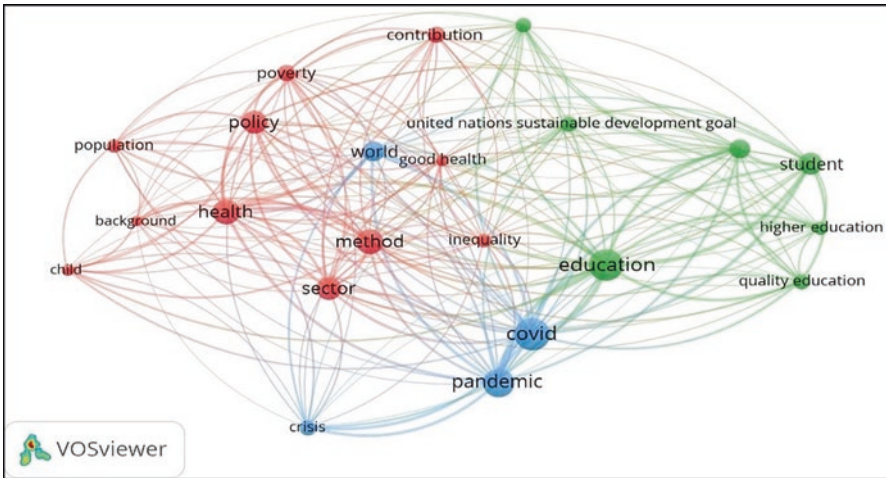


Fig. 3.2 UN's SDG, Covid-19, and higher education

knowledge structures (García-Lillo et al., 2016). The VOS viewer uses a clustering algorithm for identifying research clusters and trajectories (Strozzi et al., 2017). The visualisation technique based on bibliometric data helped obtain an overview of Covid-19, higher education, and SDGs. The most frequent words were Covid-19 and higher/tertiary education. Terms were filtered from the titles and abstracts of the publications.

The VOS viewer helped obtain an overview because these topics are multifactorial, multidimensional, and cross-disciplinary (Rodrigues & De la Riva, 2014). The more enormous balloons reflect more citations, and a deeper line means a stronger relationship between keywords. It was essential to form a detailed map of higher education, SDG, and Covid-19 to answer the proposed research question and objectives. Mostly, policy and recommendation about the condition of higher education during the Covid-19 time was the focus to search in google scholar, library database, and Scopus.

Three similar clusters emerged while incorporating three keywords: UN's SDG, Covid-19, and higher education. Cluster one, the red one, has 11 items; cluster two, the green one, has seven items; and cluster three, the blue one, has four items. The red and green cluster is inter-related with the blue cluster, which is also impacted. Thus, a critical review of these clusters will be provided in the following discussion to understand the impact and severity of Covid-19 on higher education.

3 Sustainable Development Goals (SDGs)

The journey of SDG started on 1st January 2016, which the world leaders adopted in September 2015 at the historic UN Summit. Till 2030, these 17 goals apply to all countries to end all forms of poverty, fight inequalities, provide climate action, provide education, health, social protection, job opportunities, environmental protection, and so forth. The SDG4 education 2030 Agenda has 10 targets, of which 7 are outcome targets and 3 are means of implementation targets. These targets demonstrate agendas ranging from early childhood education to adult training. The Education 2030 Agenda aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (UNESCO Bangkok office report, 2018).

3.1 *Critical Implications of SDG4, Driven by the Covid-19 Pandemic*

There are several implications of the Covid-19 pandemic on the targets of SDG4. Covid-19 deepened the differences between genders in developing countries as parents did not find it a necessity to complete the education for their girls and believed that it was better to get the girls married than to spend the money and time on higher

education in the pandemic period in a country like Bangladesh. In addition, there were physical and mental health problems, lack of motivation, and financial crises (Dutta & Smita, 2020). Most importantly, lack of communication created a gap in the communication among the students' peers, as reported by the study by Dutta and Smita (2020). The Covid-19 pandemic changed technological infrastructure, resources, and technological innovation in an academic learning setting.

3.2 Online Learning and Its Challenges

Online education was also challenged by the socially disadvantaged student community, especially in developing countries; thus, the notion of quality education (SDG 4) became questionable and a matter to explore (Karlidag-Dennis et al., 2020). Higher education had to adapt to new institutional governance mechanisms in Covid-19. The study by Freeman et al. (2021) demonstrated that the quality of higher education needed to be shaped to cope and keep up with mid- or senior-level management decisions. Likewise, traditionally, the higher education sector is not known as an agile domain like many other IT or software-based industries; thus, Australia is still facing questions regarding its policy governance and the future direction of policy management in the higher education sector. The higher education sector looked like a gig academy for academics, which indicated the absence of a government-funded support system (Kezar et al., 2019). The nature of higher education changed in terms of student admission, entry examination, and virtual orientation. On-going restrictions limiting physical gatherings and institutions considered student retention and, most importantly, the disruption in student learning in student participation in the online mode (Freeman et al., 2021).

Reduced amount of interaction with academic staff and peers, difficulties with the use of technology, students feeling isolated, and lack of motivation were the many obstacles as reported by the study by Martin (2020). The quality of online education was also affected by the household where the students lived during the pandemic; it is often not easy for many low-socioeconomic background students, and the presence of family members and children at home makes it easy challenging to focus and concentrate (Martin, 2020). According to UNESCO (2020), 60% of the world's student population in schools, colleges, universities, and other educational institutions are adversely affected. In the transitioning phase to the online teaching paradigm, there was a sense of lack of trust (Capano et al., 2020) that was observed among the public in terms of how the overall Covid-19 situation was handled, and there was a potential denial stage of adopting to technicality know-how, especially in a country like Bangladesh. Thus, policy support and intervention were lacking in implementing online pedagogy in many public universities in Bangladesh.

The impact of the mental health of Covid-19 on the learning system challenged the pedagogy not only on the tertiary level but also on the primary to higher secondary. Using various e-learning platforms for remote learning generates immense disruption and restriction that contribute to increased stress and anxiety, affecting

students' academic performances. Although there is research that shows that online learning has been linked to increased students' ability to grasp and retain information at a faster rate, research like that of Grubic et al. (2020), however, argues that the restrictive learning conditions associated with online learning are bound to result in increased stress and downstream negative academic consequences. Cao et al. (2020) study confirmed that 30% of the students experienced anxiety due to the pandemic. Uncertainty about the pandemic has impacted tertiary students worldwide (Wang et al., 2020; Brooks et al., 2020). For example, in Pakistan, lack of training to adapt to online mode, low motivation of university students, resource constraints, and low computer literacy were significant barriers to learning (Muffih et al., 2021).

Similarly, in Bangladesh, the study by Dutta and Smita (2020) reported that university students missed meeting their peers; communication hesitancy could also affect the post-pandemic period. Students from rural Bangladesh mostly felt left out for not having a laptop, no internet access, or internet disturbance during the class period. The participants also felt that university teachers were not prepared for digital learning. It often becomes overly tedious and physically and mentally exhausting to focus on online learning (Dutta & Smita, 2020). Many female participants shared that their parents force them to get married rather than study at an unprecedented time, making them feel vulnerable. The pandemic created the inequality of access to the internet across India; as classes continued in online mode, many could not afford it, and students from rural India could not access the internet. As the SDG4 is affected by the global pandemic thus, human capital and economic opportunity will struggle to meet the indicator set by the UN.

3.3 Struggle for Educational Institutes in Response to Covid-19

After World war II, the Covid-19 pandemic has been the most significant disaster in the last 100 years of human history (Atuahene et al., 2020). Due to Covid-19, the SDGs have been a setback; how much it rolled back is a matter to investigate in this study from the extant literature. The focus of the SDGs is to give better health-care services to the people (Rajabifard et al., 2021). The existing literature points out that the International Association of University closely monitors the challenges and responses to the global Covid-19 situation in the education sector (Bergman, 2020; Crawford et al., 2020). The immediate challenges were the disruption in institutes, staff-to-student displacement, outdated technical platforms, and modifying course work and assessment (Hilburg et al., 2020; Rajhans et al., 2020). There is a higher need to hold onto the national policies for digital teaching in higher education by linking the practices of universities across the world (Ashwin et al., 2020; Hodges & Fowler, 2020). Yancy (2020) posits that it would be beneficial to learn how universities worldwide deal with digital platforms during Covid-19. In the following

discussion, examples from developed and developing countries will be provided concerning the challenges institution have faced during the global pandemic since 2020.

When Covid-19 hit Australia, the government and the executives of the universities restructured the discipline of Humanities, Business, and Arts, and these disciplines looked insecure, less critical, unnecessary, and unnecessary (Blackmore, 2020). Humanities, Law, Business, and Social Welfare have been defined as the “job less” category. The nursing, teaching, engineering, and sciences are labelled as the “job ready” ones, which indirectly indicates the fear of the Morrison government’s building a nation without critical reflection (Blackmore, 2020).

Covid-19 has re-defined the status of the higher education sector of Australia as a carelessness nation. Evidently, in the pre-Covid-19 time, the business planning, work culture, industry partnership, focus on employability, global ranking, and research publication of the higher education sector of Australia made the whole spectrum vulnerable (Blackmore, 2020). Thus, to contribute to the “knowledge economy,” Australia focused on middle-class GDP growth in countries like China and India. The pre-Covid-19 period in Australia concentrated much on the business strategy for its prospective business dominance in the Asia-Pacific region; thus, flexible learning styles like “flip-class room,” students’ absence from class, and pre-recorded main lectures not only made the education cheap to its counterpart, but the executive decision-makers of the university thought it to be the survival strategy till Covid-19 hit hard (Blackmore, 2020). In response to Covid-19, most economic and social activities ceased. As a result, higher education institutes worldwide have shifted to online learning to contain the spread of the virus. Higher Education Commission in Pakistan has advised all the institutes that have the capacity of Learning Management Systems to initiate online learning (Dogar et al., 2020). However, most universities in Pakistan face technological limitations.

3.4 Technology in Educational Institutions During Covid-19

As highlighted in the above discussion, the Covid-19 pandemic has led to a rapid shift in the operation of educational activity. This has resulted in a shift in the teaching-learning process for students and educators (Carolan et al., 2020). Drawing on other studies, we have outlined a set of barriers and challenges for educational institutions to enable them to have a safe and successful transformation. We tried to understand the barriers from the perspective of students, educators, and universities.

Mishra et al. (2020) reported technical problems as a significant difficulty affecting students’ learning. Other studies have highlighted how this new medium of education has aggravated the digital divide (Govindarajan & Srivastava, 2020). To overcome the barrier, Carolan et al. (2020) suggested that the institutes can play a huge role in overcoming the barrier by providing I.T. infrastructure bandwidth connection to solve technical issues. It is equally essential to ensure equity in accessing

the services so students from marginalised backgrounds can get equal access to resources. Apart from infrastructure and resource challenges, student engagement, lack of organisation, and a sense of loneliness are other challenges highlighted by other scholars (Liang et al., 2020; Mishra et al., 2020). Most importantly, there was a lack of evidence-based approaches to support the resilience-based higher education systems, especially in India, Pakistan, and Bangladesh (Rajabifard et al., 2021). Chakraborty and Kar (2021) stated a need to examine the following processes to mitigate the on-going challenges, such as digital and infrastructure readiness.

While the higher education students from the developing world had access to computers and the internet the students from the developed world had other tech-based barriers, such as self-regulation, online distraction, time management, and efficiencies (Rajabifard et al., 2021). Engagement with students is critical to gaining within online learning. This forced transformation was a barrier for those without training in online teaching (Dwivedi et al., 2020). Another aspect is understanding the different pedagogies with specific capabilities to teach effectively (Marinoni et al., 2020). From a theoretical point of view, not everyone is comfortable with online teaching. There is a generational divide among those who are not equipped to use technological tools to deliver lectures (Govindarajan & Srivastava, 2020). Younger generations tend to be more comfortable with technology usage and can learn faster. There is a massive demand for a new skill set for the lecturer and professors, including communication abilities for an online setting, computer-specific knowledge, proper handling of teaching, and learning tools.

Dwivedi et al. (2020) suggested some of the exciting lessons that could be a guiding framework for quick adaptation: (1) creating an appropriate physical setting such as lighting and sound for online teaching; (2) content should be redesigned to reflect the changes in the online medium and more activities should be added to encourage collaborative learning; (3) ensuring small group discussions within online classes to ensure high-quality student experience (Dwivedi et al., 2020); (4) re-evaluation of the teaching processes which involved a smoother transition by using technology to invent a teaching model (supporting new assessments, the revised role of facilitators) to ensure value (Krishnamurthy, 2020).

It is equally important to nurture a culture by bringing together facilitators to support and examine whether the change is effective (Carolan et al., 2020). Ahmed et al. (2021) added a few strategies to overcome the struggle of educational institutes, which included enabling efficient communication between academics and students; access to financial incentives from the government; updating the modern technologies for digitisation, and finally having the adaptability to engage students effectively in an online environment.

Public universities face a more significant challenge because of reduced budgets and funds to support a better infrastructure. There is a decline in student enrolment that also contributes to lower funds. It is also essential to reconsider that funding for I.T. infrastructure available to universities will limit digital transformation. In a recent survey conducted in universities in the European higher education area, most universities claimed to embed new ways of teaching and enhance their digital capacity (European University Association, 2020). Institutes could improve and have a

better infrastructure to give equal access to students for technological resources. There is a greater need for institutional leadership and a support framework for multiple stakeholders, including students, faculty, and technical staff. New training programmes can be introduced to facilitate faculty development and increase the resilience of the institute (Marinoni et al., 2020). Digitalisation advancements can raise questions on privacy and data security and clear codes need to be developed to ensure transparency and a safe learning environment.

4 Recommendations

Regarding recommendations, educational institutes, curriculum designers, and academics should change the current education system post-Covid-19. The curriculum design strategies should be changed post-Covid-19 to recover from the lost learning and ensure everyone can benefit from distance learning (Tiruneh, 2020). The teachers should collaborate with students to ensure that the learning objectives of the courses are met (Crawford et al., 2020). As we have witnessed in the above sections, inequality and a gap between rural/urban and developing and developed areas regarding access to education. The education system could be designed to have evidence-based actions that facilitate the recovery of lost education and learning after the educational institutes open. Flexibility and organisational agility are required to support the educational system in developing countries to prepare the teachers and students for the future (Zhu & Liu, 2020). Here are some of the sustainable solutions that might be useful for revamping the current education system:

4.1 Addressing the Learning Marginalised Groups

Policymakers and politicians need to re-value education, not as a value-based commodity, but to address the gaps of disadvantaged groups in society and make a pragmatic and practical change to the post-Covid-19 era. Following are the priority areas to tackle the post-Covid-19 higher/ tertiary education arena: (a) recovery from learning losses; & (b) focus on the welfare of the students and teachers, including social and emotional welfare.

4.2 Offer Skills for Future Employability

The post-Covid-19 period should continue to extend and prepare new learning culture that focuses on internships in technology-based industries. Measures should be taken to equip the essential workers who have significantly helped in the lockdown.

Essential workers included health-care workers, caregivers, and teachers. The support involved prioritising the education and training of these workers to equip them with the desired skills.

4.3 Training for Teacher Readiness

It is essential to prepare teachers and communities to ensure inclusive and equitable learning for everyone. It is significant to ensure that the pedagogical skills and assessments are updated to match the learning objectives of students' gap in learning during the Covid-19 period. The content should include sufficient instructional models, efficient teaching practices, and a supportive environment conducive to learning. Telephobia should be managed among adult educators by proper counselling to equip them better in such scenarios as the Covid-19 pandemic. The career development for teachers should ensure that they are qualified and paid well. Government should also take active measures to reinforce the support for educators, parents, and caregivers for the effective and safe use of technology for learning.

4.4 Inclusion of Connectivity and Removal of Barriers to Connectivity Entitlement

Social dialogue has become a key ingredient in the Covid-19 period for ensuring inclusion among the graduates in the community, corporate organisation, and educational organisation. Post-Covid-19, higher education institutions need a strategic roadmap for enhancing equity, developing new partnerships, and inclusive online learning solutions for all community members, especially those disadvantaged. Admittedly, United Nations Sustainable Development Goals (SDGs) have been challenged in the global pandemic period due to Covid-19. Most importantly, access to education has been more marginalised than ever before.

Everyone must benefit from digital solutions to facilitate teaching and learning post-Covid-19. It is significant to realise that teachers and students need an open-source technology that is easier to access and free. Quality education cannot solely depend on digital platforms owned by private institutes only. The government's essential role is to provide equitable access to digital resources. The government should remove technological barriers by investing in digital infrastructure and lowering the cost of connectivity. The technologically mediated industry has become more crucial than ever before; thus, intra-institutionalized and inter-institutionalised collaboration for better course delivery for future futuristic courses and, most importantly, technologically mediated courses have become popular. Efforts to bridge the divide in access to technology would require more significant budgets and investments in digital literacy for marginalised populations. While technology

is essential, low-tech strategies should be used with limited access to technology. Overall, the countries (both developing and developed) need to ensure that every student has access to the required learning.

4.5 Monitoring the Data to Ensure Learning

One of the ways to effectively deal with the education crisis is to monitor the data at different levels (student, teacher, and university levels). The monitoring involves reviewing the existing data and assessment programmes to ensure they are tailored to the specific community. To facilitate better learning outcomes, data should be monitored to evaluate the accountability of the university. The quality of data and the timeliness are crucial, suggesting an approach to minimising the digital literacy divide and providing teachers with practical pedagogical approaches to facilitating online education. This chapter aims to address the gap that will empower and prepare teachers and policymakers for skill, attitude, and behaviour for a better learning management system.

4.6 Strengthening the Flexibility of the Education System

Lastly, the flexibility of the education system relied on the solid articulation between types and modes of delivery. Hybrid learning and individualised learning pathways offer a unique solution to the abovementioned problems. It can be achieved through different pedagogies and resources at the national and international levels. It is important to note that the curriculum should be validated and accredited if hybrid learning methodologies are adopted. These initiatives would help make the education system more inclusive and equitable to solve the larger community's needs, especially in the on-going digital context. Thus, a holistic education system will prepare the teacher-student community for ensuring inclusive education.

5 Conclusion

For post-pandemic recovery, it is essential to understand the future challenges and the on-going impact of Covid-19 on sustainable development goals. Although the pandemic is a global problem, we must tackle it with our local knowledge, skill, and resources. This study focused on SDG goal 4.3 to ensure equal access for all women and men to affordable quality technical, vocational, and tertiary education, including universities worldwide. The success of meeting the SDG's target is compromised, and the SDG4 goals have been threatened since the pandemic started. The sustained economic growth and globalisation have been challenged since 2020.

Progress across the SDGs was slow even before Covid-19. Thus, to mitigate the development and growth of SDG 4 across all the educational sectors, various on-going development plans are necessary to create a pathway to be resilient and well-equipped for future adversities. Hopefully, it will help teachers, students, and the pedagogical community prepare more and worry less.

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Chapter 4

Challenges, Recovery Strategies and Solutions to the Covid-19 Pandemic in Universities: An Exploratory Literature Review



Bethuel Sibongiseni Ngcamu and Evangelos Mantzaris

Abstract University systems, structures, and processes have been caught off guard by the unprecedented impacts of the Covid-19 pandemic, with almost all institutions lacking proactive contingency plans. In much of the world, most stakeholders, including consumers, are ill-prepared in technology, with academics and students having serious gaps in digital technology knowledge, mainly in poor and developing countries. In addition, funding uncertainties, inadequate technological infrastructure, intellectual lack of digital capability, and inflexible policies exacerbated the consequences of the pandemic. This has had adverse repercussions on the quality of teaching and learning. This book chapter critically synthesises the existing literature on the current strategies to recover from the pandemic, discusses the challenges encountered, and considers the new dimensions that have emerged from the empirical literature in the university sector (which can be applied in different settings). These objectives were achieved by rigorously analysing various relevant, recently published journal articles and three official reports from credible international organisations. The literature review study was based on grounded theory's inductive approach, leading to the search for relevant articles and official reports. It is believed that the dissection and absorption of several realities challenges and solutions identified in the book chapter can be utilised as foundations of recovery strategies that can be planned and implemented at universities around the world.

Keywords Covid-19 pandemic · Contingency plans · Document analysis · Digital tools · Policies · Recovery

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*,
https://doi.org/10.1007/978-981-19-7299-7_4

1 Introduction

Across the globe, the transitioning higher education sector was caught off guard by the Covid-19 pandemic. This has created severe uncertainty and has forced internal stakeholders (students, employees, parents, and prospective employers) to find strategies to adapt to the ‘new-normal’. The radical re-engineering of systems and structures required the mode of delivery to change through innovation. Although the pandemic has created new and unprecedented challenges, universities applied digital tools in their operations and learning and teaching in most cases without changing their policies, curricula, and content.

The fast onset and unprecedented disaster of Covid-19 created havoc and caused system paralysis in universities. This has adversely affected the communication channels among internal and external stakeholders, primarily in silos pre the pandemic. A rigorous literature review synthesis of journal articles and authentic reports has led to an analysis. This has enabled us to determine the common challenges in the university sector across the globe and explore strategies on the path to recovery that can be applied in universities throughout the tertiary education sector. These realities are the heart of the present chapter that seeks to research, analyse, and dissect the challenges, recovery strategies, and solutions to the Covid-19 pandemic in universities. They have shed empirical light to key issues such as the realities and levels of universities’ assessment of their status and transformation during the Covid-19 period and their efforts in the process of transforming their organisation; existing policy response strategies in universities during the pandemic; comparisons and mapping in terms of responses of coordination between public universities and governments and their responses; assessments of policy response implications of future recovery plans for similar pandemics; assessment of the Covid-19 implications, and strategies that could be implemented in this transforming sector, trends, and models identification in universities; experiences and predictions among academic staff members, examining the impact of the pandemic on their well-being; assessments of the legitimisation of online teaching and learning and whether Zoom fatigue has revealed its limitations and exploring service quality in universities, the current opportunities and challenges facing the university sector during the Covid-19 pandemic and in terms of difficulties sustaining academic programmes in Africa.

The structure of the chapter has taken two different angles as it can be seen combining the existence and dynamics of empirical research studies that can be considered basically ‘generic’ and others that deal with specific university realities, challenges, problems and relationships in a wide variety of country and societal contexts. The researchers’ choice of research dynamics and presentation is wide in topics and realities internationally and provides a substantial amount of more details of these studies, including their research methods, and opens the horizons of new knowledge in the challenging countries where the research was conducted and seeking answers associated with the questions associated with the challenges, solutions and recovery strategies at universities throughout the world during the Covid 19 pandemic.

Higher education institutions in developing countries are more vulnerable to any form of disaster (Muftahu, 2020), a reality that was evident in the early stages of the Covid-19 pandemic: Poor emergency responses were observed more readily in countries with weak and autocratic governments (Marinoni et al., 2020; Nixon et al., 2020). Herbst (2021: 1) argues that leaders in the university sector without maps navigate unfamiliar territory associated with the extreme demands and expectations placed on them. The response from universities to Covid-19 has been considered less proactive, which has been aggravated by the absence of disaster contingency plans (including preparedness). Numerous researchers consider this a systemic issue (Wigginton et al., 2020). In particular, the Covid-19 pandemic has been seen as destabilising African universities as they attempted to transform and improve their education systems and functions (International Association of Universities, 2020).

Consequently, Covid-19 has been perceived as having a significant impact on the foundation of the education ecosystem (Rieley, 2020). Meanwhile, Cuaton (2020) opines that the pandemic has significantly contributed to university changes, which have been regarded as a threat and an opportunity. Muftahu (2020) maintains that the Covid-19 pandemic has redefined universities' functions and operations and how they respond to the needs of students, academics and non-academic staff members.

Several scholars have insinuated that diverse yet interconnected adverse impacts and challenges exist. Covid-19 might have brought these about in the management sphere in developing appropriate actions and response initiatives (Nganga et al., 2020). Researchers have described funding uncertainties and budget cuts, which have been expected (Ferguson, 2020). Academic dilemmas concerning the mode of delivery (including using digital technology in learning and teaching, which might compromise quality) have been described as technology and learning opportunities (Camilleri, 2021; Flavell et al., 2019; Igoe & Chadwick, 2020; Smalley, 2020). According to Camilleri (2021), Covid-19 has influenced university leaders to employ digital and virtual technologies. This has continued delivering student-centred education, conducting and disseminating credible and impactful research, and community engagement/citizenship. Many researchers have cited various recovery strategies that could be used to move forward after the pandemic. These include technological advancements (Marinoni et al., 2020; Watermeyer et al., 2021), the innovative and creative monitoring of online examinations (Ashour et al., 2021) and the sharing and updating of information (Bender, 2020). This is in an effort to assist unskilled academic staff members in using digital tools (Coyne et al., 2020).

In addition, some researchers and thinkers have had reservations about whether universities have been prepared to embark on the digitalisation of learning and teaching processes (Crawford et al., 2020). University students have been using numerous benchmarks in order to evaluate service quality. This includes academic programmes, tuition fees, physical infrastructure, communication with both academic and non-academic employees, and institutional reputation (Ozkan & Koseler, 2009).

In Yemen, meanwhile, a multiplicity of challenges brought about by the Covid-19 pandemic has prevented higher education institutions from adapting to the new normal (Al-Baadani & Abbas, 2020). These authors cite many challenges and weaknesses that have worsened the university sector in Yemen. This includes difficulties coping with change, financial instability, academic career uncertainty, students' health, additional costs associated with transformation, and internet infrastructure and usage.

Scholars have explored various factors regarding the adverse impacts of Covid-19 on universities, which have been described as severe owing to the disaster striking during the global economic downturn (Alharbi, 2020). The absence of approved strategic plans (Al-Baadani & Abbas, 2020), agility, the organisational culture changing from face-to-face teaching to online learning (Zhaohui, 2020) and under-resourced institutions (in terms of the existence or utilisation of digital technologies and the internet) have been additional burdens to university responses and student capacity in interacting adequately in the online environment (Zhong, 2020). The goal of this study is to determine the challenges that are the impediments to recovering from Covid-19 in universities. It further sheds light on recommended best practices associated with recovery strategies and solutions resulting from the impacts of the pandemic. What follows is the search strategy, data capturing and analysis section, results, discussion and conclusion of the study.

2 Literature Review

The literature review study relied on grounded theory's inductive approach, leading to the search for relevant articles and official reports. This was followed by codifying, capturing and interpreting the findings (McCann & Polacsek, 2021). The researchers pinpointed many relevant journal articles and three official reports that revolved around the objectives of the integrative literature study. This was produced from 300 articles, 12 book chapters and eight conference proceedings. The keywords included were 'leadership', 'response and recovery' and 'Covid-19 pandemic in higher education'. This review study was theoretically grounded on empirical studies focusing on university governance during the Covid-19 pandemic. The official reports were extracted from the United Nations Educational, Scientific and Cultural Organization (UNESCO), PricewaterhouseCoopers (PwC) and the European Association for International Education (EAIE).

Numerous relevant articles from Google Scholar were included and published in 2020 and 2021. The research articles' themes, findings, conclusions and impacts are listed in Table 4.1.

Table 4.1 Summary of the selected literature

Scholars	Designs and methods	Sampling and setting of the study	Research objectives	Results	Conclusions and recommendations
[1] Muftahu (2021)	Systematic literature review	Secondary data analysis: Policy documents	An exploratory study on the identification of the matters arising from, and the implications of, the Covid-19 pandemic in terms of difficulties sustaining acexploratoryacademic programmes in Africa	The pandemic has changed universities by pushing them beyond their limit to be creative as they begin transitioning to online learning. This included training academic staff members on developing and using online learning materials and training students to fulfil their academic requirements through remote learning in response to the Covid-19 pandemic	There is a multiplicity of changes that African universities have had to face due to Covid-19. This includes the inability to provide technology, reduced accessibility of students (who lack resources), limited knowledge and skills in digital tools, and resistance to remote learning and teaching. Universities in developing countries (mainly in Africa) struggle to upgrade and implement digital capabilities to improve online learning. Contingency plans and mitigation strategies have been devised in African universities to respond to and recover from the impacts of the Covid-19 pandemic
[2] Camilleri (2021)	Systemic literature review Grounded theory	Academic and non-academic sources Journal articles Intergovernmental and non-governmental documents	To critically review the literature on service quality in universities and to investigate the current opportunities and challenges facing the university sector during the Covid-19 pandemic	University resources focus on students, stakeholder engagement, and high-impact research can be evaluated using different performance indicators and metrics	The following have been recommended: An investment in online digital technologies (infrastructure), conducive conditions and resources for universities to gain the trust of their stakeholders and lure both prolific students and academic members/researchers while simultaneously increasing quality and standards

(continued)

Table 4.1 (continued)

Scholars	Designs and methods	Sampling and setting of the study	Research objectives	Results	Conclusions and recommendations
[3] Ashour et al. (2021)	Qualitative	n = 28 Open-ended questionnaire United Arab Emirates universities	An assessment of whether the Covid-19 pandemic was behind the legitimisation of online teaching and learning and whether Zoom fatigue has revealed its limitations; experts specialising in university transformations' predictions and the vision of the university sector	Universities have expanded their digital learning and teaching capabilities due to the forced adoption of virtual teaching due to the pandemic	The acclimatisation of students, employees and universities to e-learning and investments made by universities in digital technology; sophisticated hybrid campuses forms have been forecast to be appropriate in the future; the new academic programmes should be incorporated into the Fourth Industrial Revolution (4IR), which requires programmes to evolve or combine in order to respond to work/employment demands
[4] McGaughey et al. (2021)	Quantitative	n = 370 Self-determined theory Australia	Experiences and predictions were tested among Australian academic staff members, examining the impact of the pandemic on their well-being	The pandemic brought about digital fatigue, work-related stress, adverse impacts of people's work-life balance and potential long-term changes; the country shows extreme reliance on international students, influenced by their neoliberal policy and quasi-market reform, which is profit-driven and which has jeopardised institutional solvency during the pandemic; there are 'silver links' with regards to the resilience of academic staff members; Covid-19 undermined the workforce's competency, autonomy and relatedness as well as its responses to it	University leaders should acknowledge the impact of the pandemic and its responses; there is an exaggeration by the government regarding the impacts of the pandemic due to their apathy towards sustaining the university workforce; the government's reliance on international students and its 'laissez-faire' approach need to be revisited through policy direction; working remotely has been positive for academic staff members as they have increased flexibility and have developed digital learning and teaching skills

<p>[5] Calonge et al. (2021)</p>	<p>An exploratory literature review study</p>	<p>Grounded theory</p>	<p>The research reviewed published studies on how universities communicated with their stakeholders during the Covid-19 pandemic</p>	<p>Very few universities had a disaster recovery plan, and the majority of them were not prepared to deal with a disaster of such magnitude; the use of media platforms such as social media as the mode of communication was considered to be as important as before the pandemic; to reach out to diverse audiences is regarded as just as difficult as before the pandemic; the accuracy of Time-Critical Information Accuracy is more pivotal as compared to pre-pandemic times; the involvement of crisis communication strategies for students was severe and more important than prior to the pandemic; consistency, empathy, trustworthiness and responsive reporting were more critical than before</p>	<p>The post-crisis communication strategy should be prioritised; universities should strategically plan when the disaster dissipates; knowledge sharing during the disaster should be promoted, especially regarding technological infrastructure communication and procedures</p>
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Scholars	Designs and methods	Sampling and setting of the study	Research objectives	Results	Conclusions and recommendations
[6] Teixeira and Mota (2020)	Qualitative	Literature review (using grey and white literature)	An assessment of the implications of the Covid-19 pandemic, strategies that can be implemented in this transforming sector, trends, and models identification in open universities in the EU	High-risk factors are associated with the brain drain on the leadership in research and innovation	The EU recognises a dire need to an emerging university landscape, the open universities of the EU should rebuild their identities to be centred on innovation, social agency and openness; an adoption of a personalised and caring pedagogical approach is essential; the institutional model which is aligned to its core values should be updated; a network-based collaborative environment should be open and an absolute knowledge digital ecosystem should be developed; resources should be shared, business processes mainstreamed and the outsourcing of services should be at the centre
[7] Green and McCann (2020)	Qualitative	Literature review Secondary data	An examination of a faculty model which came about as a result of the Covid-19 pandemic and which intertwines entrepreneurial principles with innovation and creativity at the centre, in order to suit the unprecedented changes in the university sector; an assessment is made of the strategic implications meant to aid the faculty, ensuring education programmes continue	Protecting the status quo is what is derailing universities from adapting to the 'new normal'; forward-thinking leadership is required during these tremendous changes brought about by the pandemic	It is important to make good decisions during this period when it is difficult to find sustainable answers; internal and external comprehensive data need to be analysed in the university sector; the previous data should be used to develop contingency and strategic plans

<p>[8] Satriawan (2021)</p>	<p>Qualitative</p>	<p>Literature review Open-ended interviews: provincial government and university employees of Lampung, Indonesia</p>	<p>An examination of the synergy between a provincial government and a university and how they responded to the Covid-19 pandemic in a community.</p>	<p>The synergy between the two sectors is good, as depicted, due to its mutual support and respect; the government's role is clear: that of a policymaker and facilitator; universities support government programmes through implementation</p>	<p>The provincial government takes a leading role in developing policies and community programmes and provides infrastructure and facilities to universities to implement programmes aimed at responding to the pandemic; the cooperation between the two sectors should recur so that response to the pandemic can be effective – this would have a positive impact on the recovery of the economic health and well-being of the community; policies and community programmes should be introduced and infrastructure and facilities provided to universities to implement the programmes aimed at responding to the pandemic</p>
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Table 4.1 (continued)

Scholars	Designs and methods	Sampling and setting of the study	Research objectives	Results	Conclusions and recommendations
[9] El Masri and Sabzalieva (2020)	Qualitative	n = 238 data points (public universities and provincial and national government) Secondary data Emergency management framework	Policy response strategies in universities were examined relating to when the pandemic unfolded; mapping and comparison were made on responses of coordination among public universities, the Ontario provincial government, and the Canadian federal government; an assessment was made on the policy response implications of future recovery plans for similar pandemics	When the UN declared Covid-19 a pandemic, universities took action, followed by the central government's responses; conversely, there were no announcements made by the provincial government although it is a constitutional mandate for education; there was a sudden pivot from face-to-face to the e-learning mode of education; there was indirect support from the federal government on mandates which fall under it; the Ontario government responded later to the mitigation phase by announcing a health data platform and funding for medical research; information was limited on new research initiatives and/or adaptations to the new ones; the federal government focused on economic advancements, student funding, job opportunities and retaining immigrants; universities were proactive in restricting academic mobility; there was no relationship or link between the federal and provincial governments; the Ontario government did not play a role in influencing universities' response to the pandemic and were invisible during the response and mitigation phases	The key stakeholders will play a significant role in the future recovery of universities; universities and governments should work and collaborate to rethink the mode of delivery and explore a meaningful and coherent education experience during times of uncertainties, turbulence and fragmentation; the actors need to learn how to manage difficulties that are challenging and unsolvable; policymakers need to rethink in practical terms; universities are capable of providing online learning –the future university model is blended with online learning; the application of e-learning will increase flexibility in course delivery and accessibility to under-represented groups and strengthen inter-institutional collaboration; the provincial government should collectively benchmark, develop and share best practice and revisit the university funding model by ensuring the mode of learning and teaching delivery is agile and provides fair access and support for students; internationalisation should be explored: The reinvention of international education by focusing on sustainable and reciprocal models; international relationships and partnerships can be leveraged through technology and building virtual research communities

<p>[10] Al-Maadeed and Marques (2020)</p>		<p>An assessment of the university sector status and transformation during the turbulent and unpredicted challenge posed by the Covid-19 pandemic; depicts how universities can resist and transform their organisation during a pandemic</p>	<p>The university sector can transform and resist the pandemic; it can achieve long-term sustainability post-recession; flexible policies and a leaner and more effective system can bring changes; universities' recovery efforts should reassess their purpose and the critical role they play in society</p>	<p>Universities play a major role in achieving and contributing decisively to numerous Sustainable Development Goals; the university sector's strategic direction should be focused on stakeholder responsibility principles and Environmental, Social and Governance (ESG); the governance dimension is essential in the sector if universities intend to achieve the Sustainable Development Goals; teaching pedagogies, policies and services should be modified to respond to the needs of stakeholders and the community; the effectiveness criteria to assess resources should be improved; technological development is required during 4IR to modify pedagogy; the preparation of students is needed in the industry sector through augmented virtual reality (AVR) and artificial intelligence (AI) in their learning and teaching practices</p>
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2.1 Digital Literacy and Its Implications in the University Business

Out of ten empirical studies published on university sector governance, innovation and recovery strategies during the Covid-19 pandemic, there are only four that have challenged and provided solutions in terms of the application of technology in teaching and learning and the business operations of universities (Ashour et al., 2021; Camilleri, 2021; McGaughey et al., 2021; Muftahu, 2020). For instance, Muftahu (2020) cited various challenges by African universities during the pandemic. Most of these are linked to access to technology by students, in addition to the low level of competence among the workforce in applying digital tools and employees' resistance to new technology. Moreover, developing digital skills to improve teaching and learning has been a major challenge. This is the reality, even though, as stated by one researcher, African universities have devised contingency plans including disaster mitigation, response and recovery to proactively deal with the impacts of the pandemic on learning and teaching (Muftahu, 2020). The conclusions from the latter researchers are also shared by Camilleri (2021), who has added that digital technologies in universities should be improved and developed in order to respond to the needs of key stakeholders (i.e. talented students and quality scholars) in order to increase the output and outcome quality and standards.

Interestingly, several scholars (Ashour et al., 2021; McGaughey et al., 2021) have applied different research methods in their empirical studies and added new insights and realities to the discourse. These researchers have highlighted that the pandemic has legitimised and increased universities' capabilities in implementing digital learning and teaching while also emphasising that new programmes should be aligned to 4IR. These scholars (Ashour et al., 2021; McGaughey et al., 2021) have also observed Zoom and workforce (digital) fatigue in countries such as the United Arab Emirates and Australia, which has led to stress and work-life imbalance. In Australia, McGaughey et al. (2021) have suggested that the government should respond to the workforce's well-being, change its profit-driven stance (relying on international students), change its policy direction and develop digital skills for learning and teaching.

Meanwhile, Calonge et al. (2021) have provided new insights and realities on how universities communicated with various stakeholders during the pandemic – something previous scholars have not dissected in the university sector. These authors have discovered disturbing governance pitfalls, with most universities being ill-prepared to face such disasters. This was confirmed by an absence of disaster recovery plans in the universities concerned. Calonge et al. (2021) have further concluded that universities should devise post-crisis communication strategies and promote knowledge sharing supported by technological infrastructure. In addition, social media was deemed an effective tool for communicating with students during the crisis.

2.2 Innovative Strategies and Digitally Driven Knowledge Transmission

Only two empirical studies out of 10 have been published on the strategies which can be harnessed due to the Covid-19 pandemic to transform the university sector (Green & McCann, 2020; Teixeira & Mota, 2020). These authors suggest that the faculty model – one that is entrepreneurial driven, has leaders who think creatively, and uses data to develop contingency plans – should be adopted. Teixeira and Mota (2020) contend that due to the unprecedented brain drain in academic leadership, universities should re-engineer their business operations to become ‘innovative centric’: sharing resources, increasing networks and ensuring that business processes operate smoothly. Immediately after the Covid-19 expansion throughout the world and its adverse effects on education, UNESCO (2020) undertook comprehensive international empirical research. This covered various problems and challenges facing universities, primary and secondary education (concentrating on higher education) and vocational and technical education colleges and institutions (UNESCO, 2020). The findings led to solutions to the problems and challenges that universities face. This includes tactics and strategies for successful distance learning and ways to support academics, researchers and students at all levels. These strategies consist of ways to upgrade and significantly improve educational planning in respect of universities’ engagement with communities, upgrading curricula, improving processes (leading to the sustainability of quality results in the era of digital learning), and creating new paths of excellence in the management of assessment, monitoring and evaluation of examinations, and the development of assurance in the case of technical schools, colleges and distance higher education (UNESCO, 2020).

2.3 Sector Collaboration’s Response to the Pandemic

Among the empirical studies analysed, only two articles (Al-Maadeed & Marques, 2020; El Masri & Sabzalieva, 2020) focused on policy response and the form of change in the effort to deal with the effects of the pandemic in universities. In Canada, for instance, the provincial government, which is legally tasked with communicating with universities, was considered absent during the pandemic. El Masri and Sabzalieva (2020) have suggested that all stakeholders should play a leading role in the recovery of the future of universities. Some of the recommendations that have been advanced by various authors mentioned above include e-learning accessibility for the less fortunate, agile learning and teaching, flexible policies, modified pedagogies (to respond to stakeholders’ needs), technologically driven international partnerships and benchmarked best practices by policymakers.

The article confirmed that effective and innovative university leaders are inevitably instrumental in transforming these institutions. Nonetheless, university staff, development partners, the private sector, students, parents, communities,

policymakers and civil society organisations, among others, must be prepared to support and empower universities in order to effect transformational change and create more advanced, resilient, equitable and responsive systems for a better future (Education Development Trust, 2020).

3 Discussion

3.1 *Challenges Posed by the Pandemic*

Scholars have mentioned various challenges and realities as hampering the response to and recovery from the Covid-19 pandemic. This includes students' lack of access to technology, the extreme illiteracy rate in the academic workforce (El Masri & Sabzalieva, 2020; Muftahu, 2020), and digital fatigue (which has led to stress and work-life imbalance) (McGaughey et al., 2021) and the absence of disaster contingency plans (Calonge et al., 2021). The circumstances facing academics, students, university leaders and the world have led to challenges created at the terrains of all university-based duties and responsibilities – teaching and learning, new knowledge production and community engagement. Teaching and learning have necessarily been transformed into basic 'upskilling methods' associated with technologically based new directives and platforms, upgrading and occasionally reformulating 'higher administratively based responsibilities' (such as 'student upgraded assessment levels'). These realities and difficulties have been more challenging in universities worldwide, facing limited financial and technological resources (Molosankwe, 2020).

The empirical work of Powell (2020) dealt with the circumstances, realities and relations associated with attempts and challenges in shaping, planning and implementing a scientific teaching and learning relationship among students, academics and university leaders. It has been shown that in South Africa, Africa and globally, university academic staff who have all their lives taught students through contact have admitted to limited experience in existing training in pedagogical planning, design and implementation of online processes and structures (Powell, 2020).

Ndevu's article on the challenges faced by students and academics in South Africa's universities, especially during the first lockdown period of the pandemic, used a mixed research methodology in researching three South African tertiary institutions. This was primarily based on the qualitative paradigm, which empirically identified several important realities, concerns, challenges and problems related to the repercussions of Covid-19 and the processes, functions and structures of tertiary institutions at all levels (Ndevu, 2020).

The analysis began with the severe problems facing staff and students during the initial lockdown period: the effects of self-isolation, the restriction of movement and the sheer challenges of remote teaching. The concrete facts all universities in South Africa were exposed to during this initial period and beyond were revealed as

the leadership realised that remote learning and teaching was a future trajectory of uncertainty (Ndevu, 2020: 280). The previous article identifies the realities and challenges faced by groups of students belonging to the poor and lower-middle-class sections of the population. The 'digital divide' adverse effects were rooted in unstable internet connections and a lack of hardware, especially for students living in informal urban settlements or far away, poor communities and those living in rural or semi-rural areas (Ndevu, 2020: 282–283). There were different realities between students at universities of technology and those in comprehensive and traditional universities. An analysis revealed that the former face problems and challenges associated with finances, space and technological issues, including the quality and facilities of university residences. Such a reality has inevitably led to severe adverse effects on performance as these students are obliged to work in different environments. This tends to be characterised by limited space, a lack of learning data, and the perpetuity of connectivity problems. Inevitably, such problems have serious adverse effects on the academic staff at several levels: scholastic, intellectual, time and psychological (Ndevu, 2020: 284–285).

International literature on the subject has empirically pinpointed the fact that international leadership has faced perpetual challenges associated with the pandemic in various ways. This is in terms of administration and governance at all operational and institutional levels while knowing full well that their decisions seriously influence academics, students and their families, curricula, student and departmental budgets, and the university's future during and after Covid-19. The leaders are the key decision-makers and are expected to pave the way forward with the institution's management, staff, academics, students, stakeholders and role players (Dopson et al., 2019).

3.2 Response and Recovery Strategies to the Pandemic

Several solutions have been provided as response and recovery strategies to the pandemic, which include skills development in digital teaching and learning, infrastructure development (Calonge et al., 2021; Camilleri, 2021; Muftahu, 2020), the development of innovative and agile teaching and learning, and disaster contingency plans (El Masri & Sabzalieva, 2020; Green & McCann, 2020; Muftahu, 2020). Moreover, the well-being of the workforce and a policy change on international students in countries such as Australia (McGaughey et al., 2021) have emerged as themes in the recently synthesised literature. Meanwhile, empirical research has been conducted by the internationally based and highly respected non-governmental organisation Education Development Trust. This study was based on a series of webinars among university leaders and other social participants, including academics and students from universities worldwide. It has shown that the essential element for the path forward for a recovery strategy after Covid-19 in terms of university innovation is harnessing new forms of collaboration (Education Development Trust, 2020). Such a step, it is believed, is based on the synergy,

cooperation and coordination of planned activities among university leaders, academics, students, civil society and the broader communities. Such a united alliance is the foundation for enabling holistic approaches to education reforms, enhanced continuity and continuous improvement. The examples of the collective utilisation of standard university and high school digital and technological platforms in Argentina (the [Comunidad Atenea](#)) provided free use to over 10,000 educationists to share, thus creating an online community of practice during the crisis (Education Development Trust, 2020). Thousands of Malaysian educators also shared collectively online and in WhatsApp groups. This shows that university leaders worldwide can harness the effective use of technology and data. It was decided that the efficient use of data for decision-making was a fundamental way forward because it facilitates strategic decision-making on interrelated factors.

Consequently, it was said that countries must invest in and support the creation of robust data systems. Professional severe development of leaders – preparing them to be able to use them – is considered equally important. The fact that upgraded, data-driven, system-level leadership is essential for universities worldwide is based on many university leaders, especially in Africa, being able to address equity challenges at scale. These challenges demand the prioritisation of students and academics who need additional support during and beyond the crisis (Education Development Trust, 2020).

An internationally acknowledged organisation, the EAIE, in their 2020 major report on their functionality, international relationships and collaboration with universities throughout the world – upon which the entity’s policy, actions and strategy are based – indicated that the research had shown that universities globally had done their best in their efforts to guarantee the security and, above all, the well-being of all their staff, students and communities surrounding the institutions (EAIE, 2020). These efforts were complemented by the institution that wished the universities’ success to continue successfully, especially in teaching and learning processes. However, despite the optimism based on such an analysis, the research also identified some problems and situations that could lead to deadlocks on various issues. These aspects were associated with the need to create new structures, policies and processes, and the problematic allocation of resources that could ultimately lead to the negation of functionality (in terms of critical elements such as teaching-learning continuity, resulting in lower academic standards, among others). The empirical research undertaken pinpointed the significance of the following (EAIE, 2020):

- Planning and implementing the strengthening of relations.
- Ensuring continuous honest communication, support, and assistance to students.
- Providing insurance policies to foreign students.
- Conducting innovative planning in terms of the processes of teaching and learning, with exceptional care for existing infrastructure and strategies, such as administrative staff operating remotely or moving towards distance/remote teaching and learning, or video conferencing.
- Establishing needed support for new students.

- Ensuring the community is kept informed regarding the latest information about Covid-19, such as providing up-to-date scientific information, the suspension of classes, and new strategies, plans and implantation particulars.

Because of the above, Dopson et al. (2019) argue that leadership roles are shaped by the following:

- Incumbents' existing experience.
- A comprehensive understanding of the complex nature and relationships of the existing realities of organisational structures.
- Plans functions.
- Deep, transformational, financial, student and staff-related balances and realities associated with financial and infrastructure weaknesses.
- Forthcoming changes associated with upgrading systemic functions and realities severely affect demographic changes.

Such future problems and challenges demand unity of purpose from leadership and well-planned and structured alliances of all institutional stakeholders. This will guarantee an immediate commitment to common aims and objectives, which can not only pave the way forward but also joint development and perpetual nature (Duggan, 2019; Laderman & Weeden, 2020; Mitchell et al., 2019).

In addition, authors such as Teixeira and Mota (2020) believe that the reversal of the brain drain, notable during the Covid-19 pandemic from academic leaders, should be addressed through re-engineering business processes, sharing resources and improving networks. Meanwhile, El Masri and Sabzalieva (2020) have written that international partnerships should be technologically driven and benchmarked as best practices in their relations with policymakers. El Masri and Sabzalieva (2020) concluded that flexible policies and stakeholders' proactiveness should play a leading role in recovering from the pandemic.

The previously mentioned response and recovery solutions were echoed in a 2-day digital conference organised by the international finance company PwC. This event brought together a large number of senior university leaders who shared their opinions and beliefs regarding their role in the future of their institutions, the innovations needed and the critical priorities for the post-Covid-19 future. The common belief was that looking forward, changes were inevitable after returning to campus. The key challenges in need of short-term solutions included the following aspects (PwC, 2021):

- Digital education that needs a re-definition of digital learning pedagogy for both students and academics in terms of synchronised learning methods.
- The protection and expansion of existing revenues.
- The identification of alternative and additional revenue streams across the existing and wide-ranging segments.
- The possible diversification of the existing customer base.
- New strategies and tactics in planning and implementing international student expansion.
- The careful assessment of the institutional cost base.

- Focusing on costs that reduce spending eliminates non-core spending, redefines aspects of strategy, and a severe and well-structured consideration of longer-term new partnerships at all university levels, accompanied by transformation initiatives.

It could be said that such an analysis and recommendations could be judged as ‘down to earth’ or ‘conservative’ in nature, but the fact that they are based on university leaders – who have deep knowledge of their institutions – makes the results indisputable. Interestingly, very similar conclusions and recommendations were evident in empirical research undertaken by the European Union (Pells, 2021). The European Commission has said that removing barriers to collaboration in higher education will be at the centre of Europe’s recovery from Covid-19. All the priorities mentioned above that aim to recover from the pandemic were instrumental in maintaining the ‘leading status of European universities globally’. Better financial management, innovative leaders, building bridges for higher education cooperation, and expanding the customer base through attracting international students were crucial proposals in the empirical effort (Pells, 2021).

4 Conclusion

This desktop analytical study aimed to explore issues associated with the benefits and barriers to digital learning as a recovery tool in responding to the Covid-19 pandemic. Two major challenges resulted from the synthesis: a lack of digital knowledge among students and academics and digital fatigue, which impacts people’s work-life balance. Five recovery strategies emerged from the analysis: active digital collaboration and stakeholder participation; digital education; technological best practices; benchmarked policies; and honest and efficient communication, knowledge-sharing and business processes. The effectiveness of other recovery strategies which university leaders can apply is dissected in this book chapter. These include stakeholder collaboration, contingency plans, policy reforms and knowledge sharing. Based on the reviewed literature and analysed documents, the lack of digital knowledge application and fatigue among students and academic staff members have been described as major hindrances to effective recovery strategies in the university sector across the globe. However, scholars and practitioners have advised that technological improvements, digital upskilling (of students, academics and leaders) and redefined digital learning pedagogy (aligned to 4IR) as major recovery plans in the sector are fundamental to future success. It is also noteworthy that, as a major strategy to recover from the Covid-19 pandemic, active stakeholder participation and the harnessing of new forms are essential aspects. This can be achieved by removing barriers and building alliances with internal and external actors. These recovery strategies include technological collaboration, flexible policy changes, knowledge changes (digitally), smooth and honest communication channels and business processes, and proactive contingency plans that can play a pivotal role in recovering from the pandemic.

In summary, a host of recovery strategies can be applied in universities across the globe. These challenges shared by commentators in the university sector are similar, as well as the solutions that might be implemented differently when taking cognisance of university environments. There are limitations to this study as it relied on documents for its analysis. Nevertheless, there are vast opportunities for further researchers to scientifically test the themes and propositions from this book chapter as almost all the analysed papers review literature studies. This necessitates future researchers to apply quantitative methods in ascertaining the relevance and impacts of the recovery mentioned above strategies.

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Part II
Innovation in Higher Education

Chapter 5

Gamification: Teacher Proactive Support and Student Engagement During Covid-19 and Beyond



J Irudhaya Rajesh, Vipul Pare, Sharif Rasel, Frank Nyamrunda, Prikshat Verma, and Adela McMurray

Abstract The value of gamification as a creative learning approach is well supported in the higher education literature. However, gamification studies addressing game build designs, learning tactics, and student engagement have not instilled confidence and readiness in teachers to implement gamification in their curriculum. Therefore, this study aims to investigate teachers' proactive support of gamification implementation and student engagement in their tertiary education syllabus. Employing self-determination theory, this study tests whether proactive teacher support of gamification implementation influences student engagement in challenging times like COVID-19 via student psychological needs satisfaction. Drawing on data from 119 Australian university students, the partial mediation results indicate that students' perception of teachers' proactive support in gamified activities influenced students' psychological needs, satisfaction of autonomy, competence, and relatedness, thus leading to student engagement. The findings inform the benefits of student engagement and should enhance teacher confidence to include gamification in their curriculum designs.

Keywords Gamification · Teacher support · Semidigital approach · Student engagement · Self-determination theory · COVID-19

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_5

1 Introduction

Achieving student engagement is one of the most significant aims for an educator. Simulations, flipped classrooms, educational apps, gamified learning activities, and other innovative initiatives are widely used to improve student attention span, increase student engagement, and enhance student motivation (Fontana, 2020). Among these, gamification offers the promise of an innovative way of engaging students and improving the quality of a student's learning experience (Martín et al., 2017). Gamification refers to "the introduction of game design elements and gameful experiences in the design of learning processes" (Dichev & Dicheva, 2017, p. 2). This learning tool has become crucial in the rapidly changing higher education learning environment because it has increased student attention and motivation (Breien & Wasson, 2021; Martín et al., 2017).

While understanding of the value of gamification as an educational approach continues to grow, the literature indicates that some educators continue to experience difficulties in successfully implementing this approach to improve the effectiveness of their student's learning experiences (Sailer & Sailer, 2021). Generally, some teachers are reluctant to implement gamification approaches due to anxiety and being unprepared to use innovative teaching techniques in their classes (Breien & Wasson, 2021). Such feelings may be due to a lack of teacher knowledge or training, confidence and readiness, and a lack of clarity concerning how they perceive their involvement in gamification. Thus, the lack of evidence-based research addressing teachers' involvement in gamification and its perceivable, tangible benefits for student engagement is an important gap in the gamification of education literature. Sánchez-Mena and Martí-Parreño (2017) and Alabbasi (2018) affirmed that game-based learning studies have primarily ignored teachers' key role in implementing such learning approaches. Thus, our study highlights the importance of teacher proactive support in successfully implementing gamification in teaching and learning in the higher education context. The study postulates that teachers proactively supporting gamification implementation ensure student engagement. Self-determination theory underpins the study because it proposes that student engagement results from student psychological needs, the satisfaction of autonomy, relatedness, and competence (Sailer et al., 2017). We adopt this theory to ascertain whether proactive teacher support of gamification implementation influences student psychological needs satisfaction, thus leading to student engagement.

In addition, this study makes a timely and significant contribution by validating the application and relevance of gamification in times of discontinuity, such as the COVID-19 pandemic. Since 2020, education providers have faced uncertainty with student recruitment and retention and thus need innovative learning tools to ensure student engagement in a new learning environment. Aucejo et al. (2020) observe that pandemic-related stress leads to low levels of student engagement because students are highly distracted while learning. Agasisti and Soncin (2021) find that the pandemic has led many tertiary students to consider delaying their studies, withdrawing from classes or changing their majors. In response to the pandemic and to

cope with the uncertainty, universities have adjusted and improved their teaching environments to foster student learning experiences (Van der Spoel et al., 2020). We argue that the extraordinary challenges posed by the COVID-19 pandemic and the need for extra support for higher education students in these difficult times require more in-depth investigation into proactive teacher support of gamification. Thus, the overarching research question in this study is how does teacher proactive support of gamification implementation influence student engagement during a pandemic? To address the research question, the following two objectives were developed: (1) to understand the impact of proactive teacher support of gamification implementation on student engagement during a pandemic and (2) to investigate whether teacher proactive support of gamification influences students' psychological needs and satisfaction of autonomy, competence, and relatedness, consequently leading to student engagement.

2 Hypotheses Development

How does teacher proactive support of gamification implementation influence student engagement during a pandemic?

Marks (2000) conceptualizes student engagement as a “psychological process, specifically, the attention, interest, investment, and effort students expend in the work of learning” (p. 154–5). Students engage effectively and cognitively in learning when they perceive that teachers adopt motivating instructional practices and provide social-emotional support to students (Chong et al., 2018). Proactive teachers create a learning environment that captures student attention and interest, which can be achieved through strategies such as setting clear and realistic learning expectations, consistent monitoring, and encouragement, as well as clearly communicating specific requirements to students. Proactive support is demonstrated through a teacher’s awareness of and responsiveness to students’ cues and timely provision of help when students ask for it (Ruzek et al., 2016). A teacher’s proactive support of students not only improves the interaction between students and teachers in active learning but may also improve student responsiveness to feedback (Van der Spoel et al., 2020). It is increasingly important for teachers to engage actively and proactively support student learning, and this becomes an even greater priority for many educators during stressful learning periods such as during the COVID-19 pandemic (Breien & Wasson, 2021).

A teacher’s ability and effort to utilize innovative teaching approaches such as gamification are vital to creating an engaging learning environment (Chi & Wylie, 2014). In addition to a teacher’s ability to design a gamified educational activity, we argue that gamification cannot achieve its goals through effective build and design alone and that the continued proactive support of teachers is necessary for gamification learning approaches to achieve educational goals. Discussing the implementation of innovative learning activities such as gamified educational approaches,

Dichev and Dicheva (2017) suggest that teachers are the main drivers in transforming the teaching-learning process because they are responsible for integrating elements of game playing in the course to encourage students' engagement and participation. Bouchrika et al. (2019) observe that teachers need to play an active role in creating user-friendly gamification because a complex gamified learning activity can place a psychological burden on the students to understand the game mechanisms and design, which can then lead to students feeling discouraged. Any psychological burden arising from a student's perception of the complexity of these innovative learning activities will place additional stress on them during traumatic learning experiences such as the COVID-19 pandemic.

Recent literature on game-based learning indicates that teachers play an active role in their teaching and interactions with students, which requires teachers to provide attention and appropriate guidance to students (Schöbel et al., 2020). Hence, gamification alone cannot be considered an effective learning strategy without considering other factors such as teacher proactive support for students in relation to gamification. Based on these arguments, we posit that in addition to a teacher's ability to design and build gamified learning activities effectively, their continuous, proactive support in implementing these activities will have a positive effect on student engagement, particularly in times of discontinuity such as a pandemic, which generates stressful times of learning. Thus, based on the literature review, we propose the following hypothesis:

H1: A teacher's proactive support of gamification implementation will positively influence student engagement during the pandemic.

According to self-determination theory, the degree to which an individual's thoughts, interests, and behaviors are self-motivated is determined by the satisfaction of the three main psychological needs: autonomy, competence, and relatedness (Ryan & Deci, 2000). Several studies have employed self-determination theory to examine how gamification as an educational activity enhances students' perception of their competence, autonomy and relatedness (Zainuddin et al., 2020). The fulfillment of the psychological needs of autonomy, competence, and relatedness can positively affect students' motivation to learn and significantly influence their perceptions about a course (Sailer et al., 2017).

Importantly, external influences on behavior can also affect how students perceive their autonomy, competence, and relatedness, consequently affecting their intrinsic motivation and engagement (Chi & Wylie, 2014). This study argues that proactive teacher support of gamification is a significant external influence that has the potential to affect how students perceive their autonomy, competence, and relatedness. Studies have demonstrated that students with caring and supportive interpersonal relationships with teachers and peers report more positive academic attitudes and values and higher levels of satisfaction (Klem & Connell, 2004).

Although gamification as a creative activity enhances participation, the role of teachers in supporting this process must not be overlooked (Amriani et al., 2013).

Studies have highlighted the close relationship between teachers' support of gamified activities and the fulfillment of student needs (Sánchez-Mena & Martí-Parreño, 2017). There is still a lack of detailed and in-depth research on how teachers' proactive support in gamified activities influences students' psychological needs. Drawing specifically on self-determination theory, we argue that when teachers proactively support gamified activities, students' psychological needs of autonomy, competence and relatedness are positively affected, positively influencing student engagement.

The psychological need for autonomy refers to the need to feel ownership of one's behavior and to a feeling of psychological freedom connected to accomplishing tasks through making decisions based on the individual's choice, interests, and values, without external pressure or enforcement (Dunbar et al., 2018). In the gamification setting, the role of the teacher is to provide autonomy support (Deci & Ryan, 1985), which refers to supporting students' intrinsic motivation by understanding and supporting their thoughts and making them see the "value" attached to learning activities without enforcing the activities (Klem & Connell, 2004). Reeve (2009) examined the difference between autonomy-supportive teaching and control-oriented teaching and found that students who received autonomy support were more engaged and effective learners than those who experienced control-oriented teaching. By clearly assisting students to feel the value attached to gamified learning activities, teachers can enable students to make crucial decisions on their own and see the relevance of the activity to their learning, which can positively influence the autonomy element of students' needs satisfaction, and consequently, their engagement. Parker and Hodgson (2020) highlight that students who perceive a higher value of learning activities are more likely to engage in a course.

The psychological need for competence refers to the need to produce desired outcomes and experience mastery (Ryan & Deci, 2000) while performing a game that provides a sense of happiness concerning completing tasks and learning (Wang et al., 2019). For students to achieve or develop competence through gamification, they must clearly understand the purpose of the game, their progress, and the learning process (Breien & Wasson, 2021). Such understanding can help to eliminate unwanted student behaviors (anxiety and disinterest) or possible biases in students' attitudes toward gamification (Wang et al., 2019). Unlike previous research, the present study highlights the importance of teacher proactive support by emphasizing that teachers can enhance a sense of competence by consistently using various game mechanics that encourage students to reflect on their performance, which can positively influence the competence element of students' needs satisfaction. The most widely used game mechanics are points, badges, and leaderboards (Dichev & Dicheva, 2017). This can motivate students by providing them with granular feedback, which can spark curiosity among students. Hence, this study argues that by consistently showing leaderboard points each week in a class, continuously talking about the gamified activities and outputs and congratulating winners and awarding

badges, teachers are demonstrating great interest in students’ progress, which is key to developing student competence.

The psychological need for relatedness refers to the need to feel connected to others in an educational setting. Relatedness refers to social connections among people who are achieving a task, and these connections are fulfilled through a sense of belonging to a team. Deci and Ryan (1985) stated that relatedness is based on “interpersonal affiliation, authentic care and the sharing of enriching experiences” (p. 570). This affiliation is particularly relevant and tends to be strong for students experiencing stressful events or periods (Riley, 2016). To increase student engagement, it is important that students feel connected to their learning environment (Brown et al., 2014) and their peers and teacher (Strati et al., 2017). Specifically, students’ relatedness to peers involves understanding the behaviors and attitudes of other group members, facilitated by ongoing interaction and communication among peers (Baard et al., 2004). We argue that teachers who consistently promote meaningful teamwork and continuously encourage students to work in groups to complete gamified activities are more likely to instill the relevance of group work and may thus influence the relatedness element of needs satisfaction of the students, thus leading to student engagement. Based on the discussion of the three elements of needs satisfaction in self-determination theory, we maintain that teachers’ proactive support of gamification implementation on student engagement is greatly influenced by students’ psychological needs satisfaction in the gamified environment. Thus, the literature review and analysis informed the development of the following two hypotheses:

H2: *A teacher’s proactive support of gamification implementation will positively influence students’ psychological needs satisfaction (need for competence, autonomy and relatedness) in a gamified learning environment.*

H3: *Student psychological needs satisfaction will mediate the relationship between teacher proactive support of gamification implementation and student engagement (Fig. 5.1).*

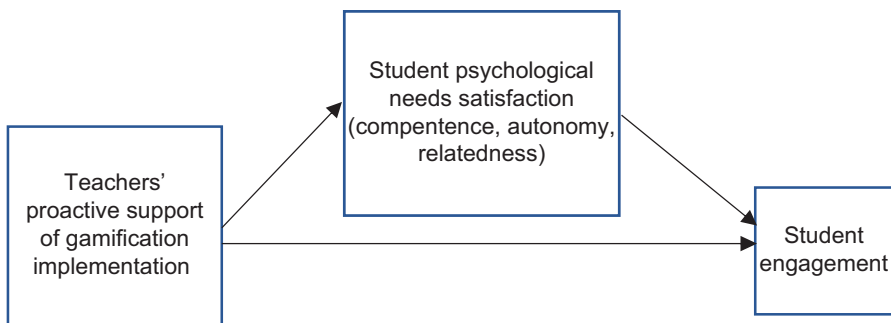


Fig. 5.1 Conceptual model

3 Methods

We conducted the study relating to our proposed model during the second semester of 2020 (July–December) on an undergraduate and graduate student population of 213 students undertaking a business course at a South Australian university. The student population comprised 124 students from a first-year undergraduate business course, 63 from a third-year undergraduate course, and 26 from a second-year post-graduate business course. The first phase of the study was the design and implementation of gamification; the second phase was data collection from undergraduate and graduate students regarding their perception of their teacher’s proactive support of gamification implementation, needs satisfaction and student engagement. In the first phase, the weekly topic content activities of first and second-year undergraduate and a final year post-graduate business course (a total of 3 subjects) were gamified by teachers/lecturers who are researchers in this study, using game-based elements such as points, timers (deadlines), badges and a leaderboard. These gamified weekly group activities were referred to as “weekly group games,” which required students to find creative solutions to an innovative activity closely related to the concepts covered each week. The innovative activities included scenario-based exercises, crossword puzzles, drag and drops (match the following), critical and creative thinkers’ discussion forums and missing word activities. The lecturer introduced the idea of the weekly group games in the week 1 lecture and tutorial to students in all three subjects of the business course, and the students were informed that participation in the games was optional and nongraded. The students in the class were divided into small groups of three to four in week 1.

Following a semidigital approach, we (teachers/researchers) used PowerPoint for ease of use to design the game activities each week with clear instructions. From week 2 to week 10, a new game scenario and activities were created using a PowerPoint file and uploaded for the students using Moodle (student learning interface). Students were required to download the PowerPoint file, consult with the group and upload their findings and solutions to the subject/topic site before the deadline each week. A separate tab was created under each week’s content in the subject’s Moodle site for groups to submit their innovative solutions and findings for the gamified activities. The winners of each week were awarded badges and points on the leaderboard based on accuracy, creative interpretation of scenarios and application of key concepts. Across the 8 weeks, the lecturers (researchers) emphasized the importance of weekly group games and consistently encouraged the students in the lectures and tutorials to play the group games. The reminder emails were sent to students about game deadlines, proactively discussed the results of the gamified activities with the students and took extra time to congratulate the winner groups and acknowledged the efforts of all the groups. The second phase consisted of designing the questionnaire and administering the survey using Google Survey. Overall, 213 surveys were dispatched to students enrolled in three subjects two undergraduate and one post-graduate course, yielding 119 returns indicating a 56% response rate. The survey clearly explained the anonymous and optional nature of

the survey and that it was designed to measure students' perception of teacher proactive support of gamification implementation, students' psychological needs satisfaction, and engagement.

3.1 Measures

Among the three research instruments that were used to collect the data, two research instruments were created new for this study. The newly created instruments were "teacher proactive support of gamification implementation" and "student psychological needs satisfaction." These two instruments were created using a three-step survey development process. The first step involved developing the items based on the literature review and including the contextual elements of this study. The second step involved an expert review of the items with an educational leadership expert within the college to check the items' relevance for face and content validity. The third step involved pilot testing of the survey with 5 students to refine the survey. At the end of these three steps, the final version of the "teacher proactive support of gamification implementation" survey comprised 5 items' unidimensional construct with a sample item as "The lecturer/tutor showed the leaderboard points before every class to motivate the students". Additionally, the final version of the "Student psychological needs satisfaction" survey had 12 items' unidimensional construct with a sample item as "Participating in weekly games developed my confidence in understanding topic content." Finally, students' engagement in the subject was measured using an instrument with five items adapted from Brown et al.'s (2014) student course engagement survey; a sample item is "I found ways to make the subject interesting to me." The original 23 items in "student course engagement" survey had a Cronbach alpha value of >0.7 (Brown et al., 2014). All the items were measured on a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree.

4 Results

4.1 Scale Validity and Reliability

Using factor analysis, we computed composite factor scores of the variables from their relevant multiitem constructs (Edwards & Wirth, 2009). We found Cronbach's alpha values above the threshold value of 0.7. This supports the reliability of the scales used in this study (Nunnally, 1978). The items with factor loading less than 0.7 were dropped from the study (see Table 5.1).

Table 5.2 presents the descriptive statistics of the computed variables including the Cronbach's alpha (α) and correlations.

Table 5.1 Factor loadings

Scales	Factor loadings
Student engagement (<i>Cronbach's alpha</i> (α) = 0.9027)	
I think the weekly group games helped me to better understand the topic content	Dropped ^a
I actively participated in small group discussions	Dropped ^a
I found ways to make the topic interesting to me	0.8178
I desired to learn the topic material well	0.8606
I made sure to study in this topic on a regular basis	0.8033
I found ways to make the topic material relevant to my life	0.8307
Teacher proactive support of gamification implementation (<i>Cronbach's alpha</i> (α) = 0.8844)	
The lecturer/tutor emphasized the importance of participation in the weekly group games	Dropped ^a
The lecturer/tutor constantly encouraged students to participate in the weekly group games	Dropped ^a
The lecturer/tutor showed the leaderboard points before every class to motivate the students	0.8534
The lecturer/tutor took time to congratulate the winners of the game each week	0.8369
The lecturer/tutor paid great attention to making the weekly games relevant to the topic content	0.8017
Students' psychological needs satisfaction (<i>Cronbach's alpha</i> (α) = 0.9580)	
Participating in weekly games developed my confidence in understanding topic content	0.8816
The leaderboard helped me to assess my group's performance each week in the game	0.7883
Points progression for each week on the leaderboard enabled me to effectively channel more effort into the games	0.8845
The challenges presented in each week's game improved the capability of achieving the desired learning outcomes	0.8743
Not formally grading the weekly game activities enabled me to participate in the games without pressure	Dropped ^a
The voluntary nature of the weekly game activities gave me a sense of control in the way I wanted to participate in the game	Dropped ^a
The voluntary nature of the weekly games gave me the freedom to engage in a flexible manner	Dropped ^a
The voluntary nature of the weekly game activities enabled me to think about the meaning and purpose of games in the topic	0.7271
Weekly group games facilitated interaction between group members	0.8210
Weekly group games made me feel that my role was relevant to my group's performance	0.8841
Weekly group games gave a shared sense of purpose in the group to perform well	0.9098
Weekly group games promoted good understanding between group members	0.8667

^aThe items with factor loading less than 0.7 were dropped

Table 5.2 Descriptive statistics

	Cronbach's alpha (α)	Mean	S.D.	Min	Max	1	2	3
Student engagement	0.9027	0	0.941	-3.045	1.129	1		
Teacher proactive support of gamification	0.8844	0	0.919	-2.386	0.753	0.59	1	
Students' psychological needs satisfaction	0.9580	0	0.984	-2.377	1.125	0.62	0.59	1

Table 5.3 Regression output

Variables	R^2	Adj R^2	β	t	p
Independent variable predicting the mediator	0.347	0.341	0.630	7.89	0.000***
Teacher proactive support of gamification to student psychological needs satisfaction					0.000***
Independent variable predicting the dependent variable	0.344	0.339			0.000***
Teacher proactive support of gamification to student engagement			0.601	7.85	0.000***
Mediator predicting the dependent variable	0.381	0.375			0.000***
Student psychological needs satisfaction to student engagement			0.590	8.49	0.000***
Test for the mediation model	0.457	0.448			0.000***
Students' psychological needs satisfaction			0.397	4.91	0.000***
Teachers' proactive support of gamification			0.350	4.05	0.000***

N = 119

Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.2 Regression Analysis

University students in three business subjects participated in gamified weekly group activities. Hence, the sample includes respondents from the different groups nested in the three subjects. Respondents from the same group or subject are likely to be correlated. To minimize the bias, we applied a multilevel mixed-effects regression model that included a random intercept at both the group level (level 2) and the topic level (level 3) to test our hypothesis (H3) that teachers' proactive support positively influences students' engagement through the mediating effect of ensuring students' psychological needs satisfaction (Table 5.3) presents the regressing findings

Table 5.4 presents the four-step regression analysis. In step 1, the students' psychological needs satisfaction (the potential mediator) was regressed on the independent variable (teacher proactive support of gamification). Step 1 supported H2, thus confirming the positive effect of teacher proactive support of gamification on students' psychological needs, satisfaction of autonomy, competence, and relatedness ($\beta = 0.630$, $p < 0.01$). In step 2, when the dependent variable was included in the regression model, the results revealed that teachers' proactive support of gamification was a significant predictor of student engagement ($\beta = 0.601$, $p < 0.01$), thus

Table 5.4 Summary of results of hypotheses testing

Hypotheses	Results
H1	Supported
H2	Supported
H3	Partially supported

supporting H1. In step 3, students' psychological needs satisfaction (potential mediator) was entered into the model. The results revealed a positive relationship between student psychological needs satisfaction and engagement. Finally, step 4 was instrumental in testing the mediation hypothesized in this study. Student engagement was regressed on both student psychological needs satisfaction and teacher proactive support of gamification to determine whether the relationship between teacher proactive support and student engagement is nonsignificant (full mediation) or is significantly reduced (partial mediation) when the effect of students' psychological needs satisfaction is statistically controlled. The results in Table 5.4 demonstrate that when the proposed mediator (student psychological needs satisfaction) was added to the mediation model, the beta value of teacher proactive support of gamification on student engagement decreased from $\beta = 0.60$ to $\beta = 0.35$. However, the relationship between teacher proactive support of gamification and student engagement remained significant ($\beta = 0.35, p < 0.01$), thus indicating a partial mediating effect on student psychological needs satisfaction. Thus, H3 was partially supported, as noted in Table 5.4.

5 Theoretical Implications

Our study has made the following significant theoretical contributions. The first contribution is a positive relationship between teacher proactive support in creating and implementing gamified activities and student engagement. This is in line with the findings of previous studies that emphasized a clear relationship between teacher support and student engagement (Richardson & Mishra, 2018).

The second contribution is that our study clarified that creative activities such as gamification do not operate alone and that teachers' continued proactive support of gamification is equally important in successfully implementing gamification. This is precise because teachers play an important role in satisfying the psychological needs of students (Tian et al., 2015). Our empirical findings establishing a significant relationship between teachers' proactive support of gamification and student psychological needs satisfaction confirm the results of previous research on gamification in education (e.g., Breien & Wasson, 2021; Dichev & Dicheva, 2017; Dunbar et al., 2018; Wang et al., 2019; Klem & Connell, 2004; Parker & Hodgson, 2020; Reeve, 2009; Ryan & Deci, 2000; Sailer & Sailer, 2021; Strati et al., 2017).

The third contribution acknowledges that while previous research has used self-determination theory extensively, the research has primarily focused on the role of

gamification in student psychological needs satisfaction. Our study is the first to apply self-determination theory to examine whether teachers play a significant role in students' perception of autonomy, competence, and relatedness to psychological needs in a gamified environment. Our study found that student psychological needs satisfaction partially mediates the relationship between teacher proactive support of gamification and student engagement, providing sufficient evidence of the path of influence from teachers' proactive support to student engagement in the context of gamification.

The fourth significant contribution is that our study is one of few to investigate the effectiveness of gamification on student engagement in a stressful period of learning (i.e., in the context of a global pandemic). The overall results on student engagement signify that gamification as a creative learning approach is equally effective during stressful learning periods because of its ability to distract from stress while keeping learning fun and engaging.

The fifth and last contribution is that in the absence of an instrument to precisely capture students' psychological needs satisfaction in a gamified environment, we developed two new survey instruments, that is, "teacher proactive support of gamification implementation" and "Student psychological needs satisfaction" in a gamified environment. Future studies can employ these instruments to explore further the effect of gamification on students' psychological needs satisfaction.

6 Practical Implications

Our study has valuable practical implications for ensuring a higher level of student engagement. First, our study findings demonstrate the positive influence of teachers' proactive support of gamification on students' psychological needs satisfaction and engagement. The benefits demonstrated by our study should motivate teachers to be assured of the value of their involvement in gamification and the importance of having a positive attitude toward implementing gamification in classes.

The second novel findings have practical implications for how teachers can ensure gamification in the classroom achieves optimal results. Given that our findings highlight the close relationship between teacher proactive support of gamification and student psychological needs satisfaction (H2), we recommend that teachers practice simple steps such as emphasizing the importance of games during debrief sessions, communicating consistently about the value of the games through practices such as reminder emails and Moodle announcements, and allocate time during class to talk about the game results. Teachers should also take time to congratulate the winners of the games and encourage the groups that are lagging on the leaderboard, ask about the group performance, and explain the importance of group dynamics in games. Teachers should also explain why the gamified learning activities have formative value in learning, which can significantly enhance the autonomy element of students' psychological needs.

The third contribution is that our study employed a semidigital approach to gamification design, demonstrating that teachers do not need to use high-end technology to implement gamification. Wood and Reiners (2015) emphasize that “it is possible to incorporate gamification into processes without technology support” (p. 3043). Zainuddin et al. (2020) also note the importance of researching gamification in non-digital gamification settings. Given the challenges involved in acquiring high-end digital software for creating games during the pandemic and other budgetary constraints, we employed a semidigital approach to creating game scenarios using PowerPoint slides for ease of use, as discussed in the methodology section of this study.

The fourth and final novel practical contribution is that our findings emphasize the importance of nontechnical training for teachers in implementing gamification. While teachers must be familiar with ways to build and design game components, it is equally important to familiarize teachers with meaningful ways of proactively supporting gamification implementation.

7 Conclusion

This study focused on how a teacher’s proactive support of gamification implementation influences student engagement. Looking through the lens of self-determination theory, it becomes evident from this study that teachers who show proactive support toward gamification implementation positively influence student psychological needs of autonomy, competence, and relatedness that are instrumental to overall student engagement with the subject. Moreover, we acknowledge certain limitations of this study. Using cross-sectional data might limit the strength of the evidence of the causal relationship between the variables. We suggest future studies use longitudinal data to understand how teacher proactive support of gamification affects student engagement over a period across different courses. Data were used from a self-reported survey of students about gamification implementation. Although this survey design fits the nature of the model proposed in this study, the survey’s self-reporting could affect the findings’ strength. We suggest that further research collect data from multiple sources to minimize common method variance (CMV). For example, academic grades and data from Moodle analytics can be used to examine student engagement and performance. Future studies could engage with a larger sample to achieve more reliable results, higher representation, and generalizability of results. Additionally, future research could consider integrating different levels of student engagement such as behavior and emotional and cognitive engagement in the proposed model. Finally, considering the successful gamification implementation and its positive impact on student engagement in the most challenging times of a pandemic, the gamification approach can be considered an effective recovery strategy as higher educational institutions endeavor to move beyond COVID-19 into the future.

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Chapter 6

Choosing Higher Education Institution and Study Abroad Destination: What Mainland Chinese Parents and Students Rate Important in the Post-pandemic World?



Isaac Cheah and Anwar Sadat Shimul

I feel very regretful that I can't go to Australia to check out what my school looks like, ... it feels like a dramatic journey, where I never make it to the school or walk into the classroom. I can't even tell how many school gates my university has.

Zhao Tianyu, A graduate of the Australian National University (Xiao, 2021)

Abstract International student mobility is a vital sign of the globalisation of higher education. Mainland China is one of the largest sources of undergraduate and post-graduate students. Previous research has identified the push-pull factors and features that influence a student's choice of study abroad destination. This chapter extends understanding by identifying and examining what 129 mainland Chinese parents and 109 students rated most and least important when considering studying abroad. The research shows that Chinese students and their parents consider push factors, such as the possibility of obtaining employment abroad, a variety of teaching styles, and overall educational quality, to be extremely important when deciding whether to study abroad. Chinese students and parents, on the other hand, cited enticing pull factors such as tuition costs, payment plans, and a socially acceptable learning environment. Chinese students and their parents' decisions to study abroad or not were also shown to be significantly influenced by institution-specific characteristics such as reputation and leadership, course portfolio, campus closures, and accessibility to services for student assistance.

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_6

Keywords Mainland China · Students · Decision making · Learning · Higher education · Study abroad

1 Background

The COVID-19 pandemic has had a significant impact on higher education development in several ways, such as the transition from face-to-face to online teaching and learning, as well as the cessation of physical events and activities, and the emergence of a “new normal” in higher education (Koris et al., 2021; Marinoni et al., 2020). While universities analyse risk for their international initiatives, not all risks can be foreseen. In particular, the COVID-19 pandemic disruption continues to cause uncertainty for international students’ mobility and the global education sector (Chang & Chou, 2021).

International student mobility is one of the essential components of higher education’s globalisation process (Yıldırım et al., 2021). Study abroad programmes in higher education increasingly play a critical role in training students for global citizenship and are recognised as a high-impact activity that may improve a student’s education and global perspective while advancing a university’s goal (Altbach & de Wit, 2020). However, the COVID-19 pandemic has not only slowed the international student movement but also altered the flow of international students (Mok et al., 2021). According to a 2020 Institute for International Education COVID-19 survey (Martel & Baer, 2021), the key statistics show that 22,401 students from 285 institutions were studying abroad during the earlier parts of 2020. Furthermore, the survey highlighted that 253 institutions evacuated some 17,787 students (81% of the total) due to the COVID-19 pandemic (Martel, 2020). These international students are undecided about cancelling their studies (Durnin, 2020) or are expected to leave their current destinations abroad in search of other study destinations (Mercado, 2020). This is especially true in countries where borders remain closed. As a result, there has been a significant decline in inbound and outbound international students in essential destinations such as the United States, the United Kingdom, and Australia (Mok, 2020; Mok et al., 2018).

The decision to study abroad is usually complicated by several aspects, including the decision itself, the nation to pick, and the institution to attend. This decision takes time to make, includes high costs, is very personal, has a high level of risk, and requires consideration of various options and alternatives (Thomlinson & Wilson-Mah, 2019). The COVID-19 epidemic has shifted the importance of each element influencing students and their families when deciding about studying abroad and which countries to go to. In particular, from a student’s or the parent’s decision-making point of view, the epidemic has prioritised health security and safety (Marginson, 2020). These decisions are influenced by family and peers and the institution’s global ranking (Paradowski et al., 2021; Perkins, 2020). This research aims to understand this phenomenon better and find methods for higher education institutions to improve the worsening learning environment. In line with the context

mentioned above, this chapter examines Chinese students' and parents' decisions regarding studying abroad through the lens of push, pull, and institution-specific factors.

The next section of the chapter discusses the market for international education in Australia and the relationships between push-pull factors and institutional-specific factors during the COVID-19 pandemic. A quantitative study then compares Chinese students' perceptions of Chinese parents when seeking an education abroad based on the push-pull theory. The results of this study are used to test some propositions posited about the importance of push-pull factors and the potential of institutional mediation to find methods for higher education institutions to improve the worsening learning environment. Implications for Australian higher education institutions are discussed.

2 Literature Review

During the COVID-19 pandemic, several studies have been conducted on problems concerning educational environments. For example, the influence on education (Ali, 2020; Gonzalez et al., 2020), creative learning technology concerns (Iivari et al., 2020; Schiavio et al., 2021), and even international higher education and student mobility (Yıldırım et al., 2021) have all been investigated. Previous research has demonstrated that studying abroad can benefit students in various ways. These include getting a good education, developing skills, increasing multicultural awareness, and becoming more connected to employment markets (Mazzarol & Soutar, 2002; Mazzarol et al., 2001). Studying abroad can help students develop cultural awareness, improve foreign language abilities, and increase their employability in increasingly globalised work markets (Mok et al., 2018).

With about 900,000 tertiary students studying abroad in 2017, China is the most significant source of international education. In 2017, 624,001 international students were studying in Australia, with 33% coming from the top five countries: 30% from China, 11% from India, 5% from Nepal, and 4% from Malaysia and Brazil (Department of Education and Training, 2018). Chinese graduates with an overseas degree have become increasingly prevalent in recent decades; they have more developed skill sets and are more employable when they return home (Blackmore et al., 2017). This suggests that Chinese students' attitudes on studying abroad have shifted, and study abroad nuances within this market have grown more common than previously (Bodycott & Lai, 2012). However, the shift in the situation has led to the learning environment becoming more unpredictable. Therefore, it is important to recognize that students' attitude and motivation towards studying abroad throughout the recovery from the pandemic is an influential agenda, particularly for higher education institutions.

In this study, push-pull variables and institutional conditions are revisited in light of the recent COVID-19 pandemic; it also redefines the role of the Chinese parents

and parental influences and involvement as an active collaborator and enabler of the decision-making process relative to studying abroad.

2.1 Parental Influences on Decision-Making and Motivation to Study Abroad

According to Bodycott (2009), much research on international higher education for international students has focused chiefly on students themselves while neglecting to consider the impact on other crucial stakeholders, notably parents' opinions. These studies have shown that their parents' expectations and motives influence Chinese students' study destinations and institutions.

Research has suggested that a student makes his/her own decision to study abroad, typically with the help of his/her immediate family (Bodycott, 2009; Bodycott & Lai, 2012; Mazzarol & Soutar, 2002). Chinese parents' anxiety over their children's academic careers has fuelled their willingness to overspend more on their child's education (Bodycott & Lai, 2012; Song, 2018). Unlike other family investments, children's education consumption is a sort of family investment in the family's human capital (Perrotta, 2004).

Parents in China see their investments in their children as a tool to help them achieve academic success and, eventually, upward social mobility through the development of social capital. Even China's most frugal parents cannot avoid paying for their children's education (Ying, 2003). Even though some families are not wealthy, parents will fulfil their children's educational expenses by cutting back on other expenses to offer their children a life full of educational opportunities (Liu, 2018; Tu, 2019).

According to Schultz's *Theory of Human Capital Investment* (Schultz, 1990), raising children resembles a strategy of capital accumulation in which education and training, or educational investment in general, is viewed as a boost to human capital. This technique emphasises a rational cost-benefit analysis of a child's education and sees a child's education as a family investment plan and the basis for the family's future (Lin, 2019). However, this process is also seen as reciprocal and interrelated with the concept of filial piety, which is defined as a Confucian-influenced society's attitude of reverence for parents and ancestors, manifested in part via service to one's parents (Wu & Tarc, 2021). Chinese parents feel a strong sense of pride when their children study abroad or have international careers; this gives them confidence or "face" known as "Mianzi" when interacting with their peers in social situations (Tu, 2016). As a result, parents and other relatives make most students' education decisions. When opting to study abroad, most students go through four stages: defining their goal, selecting a country to study in, selecting an institution, and selecting a place to study (Mok et al., 2018).

2.2 Impact of Push-Pull Factors

The push-pull theory is one of the most often used theories in the student mobility literature to explain international student flow (Mazzarol & Soutar, 2002) since it allows for the identification of push and pull variables that interact to influence student decision-making. Push factors are often the unfavourable factors encountered in the source country, while the incentives in the target country are called pull factors (Chang & Chou, 2021). Previous research has dwelled on various aspects of international student mobility citing social mobility (Souto-Otero et al., 2013) and inequalities (Findlay et al., 2012; Hauschildt et al., 2015) as important challenges.

Push factors are domestic social, political, and economic circumstances that influence a student's decision to study abroad, such as high student rivalry for university admission due to overpopulation (Mazzarol & Soutar, 2002). Push factors, in this context, relate to a set of conditions in the home country (in this case, China) that are unfavourable to students and their families and thus "push" Chinese students to study abroad (Cao et al., 2016; Cheung et al., 2019). According to various studies (e.g. Bear et al., 2018; Hung et al., 2005; Liu & Zhu, 2019), many Chinese students and parents are influenced by push factors while deciding to study abroad. These include the high-quality perceptions of overseas education and courses (Bear et al., 2018), China's unfair college admissions system (Zhao & Guo, 2002), English language learning opportunities (Hung et al., 2005), and migration benefits (Liu & Zhu, 2019).

On the other hand, pull factors are the factors that are attractive to international students and "pull" them to study in the destination country (Morgan et al., 2017). These factors encourage students to select one nation over another, such as familiarity with and understanding of an institution's reputation, peer and relative recommendations, and the opportunity to work in the host country (Thomlinson & Wilson-Mah, 2019). According to past studies (e.g. Basha et al., 2019; Levatino, 2017; Mazzarol & Soutar, 2002; Morgan et al., 2017; Wang et al., 2017), some pull factors that are taken into account by Chinese students and parents are, namely, recommendations given by relatives and friends (Hung et al., 2005), social connections in study abroad destination (Bass, 2005), working opportunities while studying abroad (Levatino, 2017; Mazzarol & Soutar, 2002), and the country of origin image of the study abroad destination (Heng, 2018; Morgan et al., 2017).

2.3 Institutional-Specific Factors Impacting International Students

COVID-19's impact on nations internationalising their higher education institutes is increasingly evident (Mok et al., 2021). Statistics show that up to 89% of universities and colleges negatively impacted foreign student mobility at the beginning of the crisis in early 2020 (Universities Australia, 2020). According to a recent

UNESCO report, 50% of all international students are studying abroad in the United States, Canada, the United Kingdom, New Zealand, and Australia, with the remainder of international students choosing to study overseas in Asian countries such as Singapore, Malaysia, and South Korea or would favour a place with a low COVID-19 prevalence rate (UNESCO, 2021).

It is with much certainty that the future of international student enrolment numbers will be determined by the actions and policies implemented by the governments of receiving countries (Altbach & de Wit, 2020; Mok, 2020). Therefore, it is essential to note that some form of institutional mediation may influence international students' travel decisions. Institutional mediation includes leadership at institutes and measures connected to students' psychological or financial stability (Mok et al., 2021). For example, the "Study in China" programme is a central government's inbound mobility initiative to increase the number of inbound international students. The programme aims to receive 500,000 international students by 2022 and make China the largest recipient of international students in Asia and a significant study destination globally (Chang & Chou, 2021). To achieve this milestone, the Chinese government is increasing the number of scholarships offered to entice overseas students. For example, 40% of all new international students received sponsorship from the Chinese government in 2016 (Xia & Chang, 2021). Therefore, global competitiveness has been touted as a tool to incentivise inbound students in internationalising China's higher education (Wen et al., 2018). This form of institutional mediation may impact students' travelling decisions, their decision to reside on campus, and their learning satisfaction (Mok et al., 2021).

According to recent studies by Mok et al. (2021) and Chang and Chou (2021), the potential for cross-border tertiary education for higher education institutions of origin would be firmly supported should credit for recognised learning be allowed, thus making the traditional mobility model less appealing (Yıldırım et al., 2021). Virtual mobility or collaborative online learning (Koris et al., 2021; Marinoni et al., 2020) could replace physical mobility as an alternative to the student movement. The virtual mobility model in Europe (e.g. Rumbley, 2020) is an excellent example of this measure and is also viewed as a decisive factor impacting overseas students' travel during the pandemic recovery. Most studies have found that students are generally satisfied with their academic performance when transitioning to online learning during the COVID-19 pandemic (e.g. Ali, 2020; Gonzalez et al., 2020; Iivari et al., 2020; Koris et al., 2021; Schiavio et al., 2021). Therefore, colleges and universities must consider virtual mobility programmes as part of their course delivery for international students in a post-COVID-19 future of education.

3 Methodology

This research undertook a quantitative approach to examine the Chinese students' and parents' decisions regarding studying abroad. A self-reported online survey questionnaire was developed for data collection. The questionnaire was translated

from English to Mandarin by a professional translator. It was back-translated and checked by two experts to ensure consistency of the intended meanings of the questions. The first section of the questionnaire provided a brief about the survey. The following section enquired whether the respondent is a parent or student. Then a filtering question examined the respondents' (or their child's) intention to study abroad (i.e. "Do you plan to undertake study abroad?"/"Does your child plan to undertake study abroad?"). Only the participants who selected the option "yes" were proceeded to the following sections. The subsequent sections included items for push factors (Bodycott, 2009; Hung et al., 2005; Zhao & Guo, 2002), pull factors (Hung et al., 2005; Mazzarol & Soutar, 2002), and institution-specific factors (Mazzarol & Soutar, 2002). All items were measured on a 5-point Likert scale (1 = least important, 7 = most important). The final section asked the participants' demographic profiles (Table 6.1).

Table 6.1 Respondents' profile

Characteristics	Category	Students (n = 109)	Parents (n = 129)
Gender	Female	59.63%	66.15%
	Male	38.53%	31.54%
	Prefer not to say	1.83%	2.31%
Age	16–17	1.83%	–
	18–20	37.61%	–
	21–23	33.03%	–
	24–26	19.27%	–
	27–39	8.26%	–
	40–49	–	40.00%
	50–59	–	50.77%
	60–69	–	7.69%
	70 and above	–	1.54%
Marital status	Single	51.38%	–
	In a relationship	43.12%	0.77%
	Married or De facto	5.50%	93.08%
	Widow/widower	–	1.54%
	Divorced	–	4.62%
Income	Less than ¥50,000	70.64%	7.03%
	¥50,000–99,999	8.26%	7.03%
	¥100,000–149,000	11.93%	10.16%
	¥150,000–199,000	0.92%	11.72%
	¥200,000–249,000	5.50%	14.84%
	¥250,000–299,000	1.83%	21.88%
	¥300,000–399,000	0.92%	24.22%
	Above ¥399,000	–	3.13%
Education	High school	32.11%	16.92%
	Diploma/undergraduate	55.05%	62.31%
	Postgraduate	12.84%	20.77%

4 Results

Data were collected via social media channels, mainly through WeChat, the most popular chat app in Mainland China (Chen et al., 2018). The researchers shared the survey link with their friends and families and encouraged snowballing. A total of 238 (109 students and 129 parents) valid and useable responses were collected. A summary of the respondents' profiles is presented in Table 6.1. Data were analysed through IBM SPSS 27. An EFA was conducted to check the dimensionality of the constructs. All items were retained with a factor loading of 0.60 and above (Table 6.2). An independent sample t-test was conducted to find the differences between the perceptions of parents and students regarding factors influencing study abroad decisions. The results revealed no significant differences in the institution-specific characteristics. However, among the push factors, "higher quality education" was perceived significantly more important by the students than the parents. Of the 24 pull factors, 10 factors were perceived significantly more important by the students than the parents did:

1. Social and emotional support services
2. Range of programmes available
3. Language and academic support services
4. International standing/reputation of the institution
5. Physical study environment
6. General facilities – buildings and grounds
7. Cost of living
8. The lifestyle of the host country
9. To gain an understanding of Western culture
10. Range of student clubs and societies

The relevant factors, mean scores, mean differences, and related statistical scores are presented in Table 6.3.

5 Discussion

Several push factors play a crucial role in influencing Chinese students' and parents' decisions about studying abroad (Bodycott, 2009; Bodycott & Lai, 2012). Both groups of respondents noted that the entry requirements in Chinese universities are often too challenging to meet, leading to a lack of university placements in China. Therefore, students are forced to seek higher education in other countries. With this, the students are exposed to an international and intercultural environment that equips them with a sound understanding of western culture. Thus, studying abroad opens improved employment prospects and generates immigration opportunities. Overall, Chinese students are willing to study in western countries to know the "authentic" western world and effectively communicate with Westerners (Cheng

Table 6.2 Factor loadings for the measurement constructs

Measurement constructs	Push factors	Pull factors	ISF
<i>Push factors</i>			
An inadequate supply of university places in China	0.66		
Improved employment opportunities	0.84		
Immigration prospects	0.69		
Higher quality education	0.87		
Strong economic growth	0.88		
To understand Western culture	0.84		
International/intercultural experiences	0.87		
Entry requirements of local programmes are very hard to meet.	0.60		
<i>Pull factors</i>			
Employment prospects on graduation		0.85	
Social and emotional support services		0.88	
Range of programmes available		0.87	
Migration possibilities		0.74	
Language and academic support services		0.86	
Proximity to home country (China)		0.87	
Onsite accommodation		0.77	
Scholarships		0.84	
Cost of tuition		0.86	
Relatives and friends living or studying in the area		0.77	
English-speaking environment		0.88	
International standing/reputation of the institution		0.88	
Qualification is recognised in China		0.85	
Physical study environment		0.88	
General facilities– Buildings and grounds		0.85	
Cost of living		0.88	
International education experiences during courses		0.88	
Part-time employment while studying		0.85	
Lifestyle of host country		0.92	
Visa application and acceptance		0.88	
To gain an understanding of Western culture		0.90	
Range of student clubs and societies		0.86	
Level of crime and discrimination		0.84	
Climate of host country		0.88	
<i>Institution specific factor (ISF) (XYZ university...)</i>			
Has a reputation for quality			0.62
Was willing to recognise my previous qualifications			0.66
Has a reputation for quality and expertise of its staff			0.62
Has links to other institutions known to me			0.75
Has a large number of international students enrolled			0.74
Has a strong alumnus through which I learnt about it			0.65
Offers qualifications that will be recognised by employers			0.64

(continued)

Table 6.2 (continued)

Measurement constructs	Push factors	Pull factors	ISF
Offers a broad range of courses and programmes			0.84
Makes use of the latest information technology			0.84
Has a reputation for being responsive to student needs			0.71
Is well known for innovation in research and teaching			0.80
Has a large campus and excellent facilities			0.81
Is financially stable			0.82
Offers flexible entry throughout the year			0.83
Is noted for its superior use of technology			0.83
Was well known to me			0.81
Advertises and promotes itself strongly			0.78

Table 6.3 Differences in perceptions between students and parents

Factor	Mean (Students)	Mean (Parents)	Mean difference	Std. error difference	<i>t</i>	<i>p</i>
Higher quality education	4.53	4.29	0.24	0.12	2.04	0.04
Social and emotional support services	4.39	4.08	0.31	0.14	2.24	0.03
Range of programmes available	4.44	4.11	0.33	0.14	2.46	0.02
Language and academic support services	4.44	4.15	0.29	0.13	2.27	0.02
International standing/ reputation of the institution	4.58	4.30	0.28	0.12	2.29	0.02
Physical study environment	4.61	4.25	0.36	0.12	3.09	0.00
General facilities – Buildings and grounds	4.37	4.05	0.32	0.14	2.23	0.03
Cost of living	4.21	3.98	0.23	0.12	2.73	0.01
Lifestyle of host country	4.41	4.09	0.32	0.14	2.33	0.02
To gain an understanding of Western culture	4.52	4.19	0.33	0.12	2.72	0.01
Range of student clubs and societies	4.23	3.89	0.34	0.15	2.30	0.02

Note: Higher quality education is a push factor. The remaining 10 constructs are pull factors

et al., 2018). Besides, while studying abroad, students can meet people from diverse cultural backgrounds, gaining more knowledge about other cultures that are critical in developing global capabilities. While the perceptions are statistically different between parents and students, both groups consider Australia's high quality of education a key factor when selecting universities. Many Chinese believe that education quality in western countries is better than the Chinese counterparts. According to the QS ranking (2020), the ranking of universities in western societies such as the USA, the UK, Australia, and Canada is generally better than the universities in China, except for a few exceptions. Also, the teaching styles are different across the

two countries – for instance, Chinese universities are highly teacher-centred, whereas universities in western societies are much more student-centred. Therefore, students are more initiated and motivated to study the knowledge and skills in their intended study areas (Bear et al., 2018). As the economy has proliferated in China, students and parents are more willing to visit other countries and study abroad. This has meant that the tuition costs and living expenses have become more affordable than in the previous decades, which also encourages Chinese residents to make decisions about studying abroad. Chinese students also note post-graduation employability as one of the reasons to study abroad, where students work in the study destination country for a few years after completing their studies and then return to China (Gesing & Glass, 2019).

This research shows that few pull factors get a stronger consideration by the Chinese students than the parents. Since most of the students surveyed in this research have a limited income and rely on their parents for tuition and living expenditures, the students carefully consider the financial aspects (i.e. tuition fees and living costs) while studying overseas. The majority of qualifications offered by Australian institutions are recognised by the Chinese Ministry of Education, which is an advantage for Australian universities to pull Chinese students to come and study onshore (Ng & Nyland, 2016). Students and parents also highly appreciate support services in the English language, academic, social, and emotional aspects (Blackmore et al., 2017). Regarding the infrastructure and educational standpoint, the Chinese students look into the global reputation of the Australian universities and the range of the programmes offered.

Nonetheless, the physical environment, including architectural design of buildings, lifestyle and reputation of the city/suburb, and transportation system, is also considered by both the Chinese parents and students when selecting higher education institutions in Australia. Understandably, most Chinese students who grew up in a collectivist culture might have difficulty studying abroad far from their families. Thus, there is also an urge for social and emotional support to be provided by higher education institutions. These supports may include the phases from admission procedure, visa application, pre-departure (from China) checklists to after-arrival services (in Australia). The results reveal that Chinese students are open to exploring and understanding the Western culture; however, at the same time, they want to be involved in the student club and societies that would reflect their cultural diaspora. Thus, the events for major Chinese cultural celebrations such as *Chinese New Year* and the *Mid-Autumn Festival* organised by the Australian universities may facilitate the emotional well-being of Chinese students in Australia (Martin, 2020).

Students and parents had an invariant opinion regarding the institution-specific factors (i.e. selection of Australian universities). Both groups tend to choose a university with a reputation, a large campus, an excellent facility, and a wide range of courses and flexible entry semesters across the year; in addition to a current portfolio of a large international student body, the respondents highly valued university's connections with other institutions as well as the alumni network within the community. They also noted that potential employers should recognise the university qualifications. These factors affect students' evaluation of the university's current

image and future employment opportunities. The respondents also emphasised using the latest technology, information management system, and uninterrupted student support services. Both parents and students indicated the importance of innovation in teaching and research within the university. Within the context of Covid-19, the university's financial stability, curriculum recognition, and inter-institutional links were also pronounced.

While Covid-19 resulted in a limited to closed international border worldwide and global student mobility stagnated, the demand for studying abroad has still been prevalent (Gardner, 2021). It has been evident that many international students enrolled in universities abroad and pursue their studies online (Martin-Barbero & Marmolejo, 2021). With the notion of worldwide vaccination programmes and anticipation of returning to everyday life (Tayag, 2021), international higher education institutions need to relook into their operational and strategic directions with the vision of a post-pandemic world. In particular, within the context of this research, Australian universities expect international students to arrive in 2022 (Fitzgerald, 2021). However, the institution-student interactions and expectations would differ from the pre-pandemic years' state.

For instance, the pandemic has created psychological distress and financial uncertainties among international students. Hence, higher education institutions need to ensure the proper physical infrastructures (e.g. larger classrooms, buildings, and libraries) that would be able to accommodate the social distance and other emergency requirements. Australian universities must adopt innovative teaching and learning techniques such as the distributive learning model and flipped classrooms. This will assist the education providers with coping with future uncertainties of pandemic-related lockdown and virtual learning environments. Nevertheless, there are other macro-level issues (e.g. visa extension, accommodation, and welfare support) for which government needs to assist in collaboration with the universities. During Covid-19, many Australian universities and other educational institutions have offered a range of support to students, including fee deferrals, deferred studies or payments, food and accommodation help, mental health, and additional medical support. The programmes and policies can be implemented through formal and informal learning and extra-curricular activities. This will ensure equity and fairness towards the international students and facilitate abating the on-going political tension between the Australian and Chinese governments. We recommend that Australian higher education institutions integrate the afore-discussed push/pull factors in their higher education strategies to have sustainable growth in the international students from China.

6 Conclusion

Moving forward, opportunities to reengage with Chinese international students post Covid-19 are a critical agenda item for higher education institutions worldwide. Employing the push-pull theory, this study has portrayed a network of push and pull

factors that affect a group of Chinese international students and their parent's decision to study (or not) abroad amid the COVID-19 disruptions. Push factors such as overseas employment prospects, variety in teaching styles, and overall quality of education were essential to the study abroad decision by both Chinese students and parents. On the other hand, pull factors such as universities' tuition fees, payment structure, and a socially friendly and secure learning environment were cited as attractive pull mechanisms by Chinese students and parents. Furthermore, institutional-specific factors such as university's reputation and leadership, the portfolio of courses, campus closures, and access to student support resources (e.g. peer-to-peer mentoring groups via alumni networks) were found to be instrumental in Chinese students and their parent's decision to study (or not) abroad. While the push and pull factors provide an overview of ways to reengage Chinese students and their families, the roadmap to a successful transition is still plagued by broader political and economic factors, which include social mobility (Chang & Chou, 2021), equity problems (Glass & Gesing, 2021), and geopolitical tension between Australia and China (Hurley, 2020). Therefore, these factors may reflect the issues in international students' decision to study (or not) abroad and should be considered when analysing the future of student mobility.

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Chapter 7

Leveraging the Power of Open Innovation and Dynamic Capabilities to Recover from COVID-19 Impacts: A Study of Higher Education Institutions of Pakistan



Abdul Salam, Shahid Hussain, Wasim Abbas Awan, and Hina Amin

Abstract The COVID-19 pandemic has severely impacted the global economy, particularly the higher education sector worldwide. This study aims to investigate the direct impact of open innovation and mediating effects of dynamic capabilities to mitigate the COVID-19 challenges. Data were collected from 284 teaching and nonteaching staff members employed at the Higher Education Institutions (HEIs) of Pakistan. The partial least squares structural equation modeling (PLS-SEM) technique was used to analyze the survey data. The findings reveal that the factor of dynamic capabilities significantly influences organizational resilience. In addition, open innovation significantly mediates the relationship between dynamic capabilities and organizational resilience. These findings offer valuable insights for the HEIs to develop strategies to cope with the challenges posed by the pandemic.

Keywords Dynamic capabilities · Open innovation · Organizational resilience · Higher education institutions · HEIs

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1 Introduction

The COVID-19 pandemic has turned our lives upside down. It has brought terrible suffering and affected almost every facet of our lives. The spread of COVID-19 has resulted in a global pandemic with several measures implemented to reduce human movement, limit economic activity, and increase social distancing. According to the World Health Organization (WHO), more than 5 million people have lost their lives globally due to this deadly disease, and the emergence of new variants of this virus has posed additional challenges for the authorities (WHO, 2021). The outbreak of COVID-19 has pushed the world into unpredictable crises, where stakeholders have to deal with unusual circumstances.

Even though the impact of COVID-19 has affected almost every front of the global economy, Higher Education Institutions (HEIs) have been the worst hit due to a lack of dedicated or permanent emergency departments (Thatcher et al., 2020). The limited economic and social activity forced HEIs to change their routine operations swiftly. HEIs faced two main challenges: transitioning from the face-to-face to the online learning environment and handling financial issues (Izumi et al., 2020). Students and staff have never experienced such an abrupt shift in how HEIs operate (Zimmerman, 2020). Of all of their operations, the learning part remains the most crucial.

Moreover, given the social, economic, and technological environment, the usefulness of online learning is a crucial factor in a country such as Pakistan, which has relied chiefly on face-to-face interactions for learning and work. Financial challenges present another significant issue for HEIs (Izumi et al., 2020). These issues can affect financial stability through reduced income due to cancellation of enrolments, a low number of admissions or refund of fees, and rising costs to better streamline the modalities of virtual engagement for the required academic outcomes (Izumi et al., 2020; Pokhrel & Chhetri, 2021). This involved the procurement of software and services in supporting the learning process.

In the same vein, it is crucial to remember that challenges and instability in the external environment can have a long-term influence. For example, Kurtz and Varvakis (2016) discuss that the instability of the operating environment affects institutional growth potential and the chances of survival. Likewise, other studies (Eisenhardt & Martin, 2000; Hayter & Cahoy, 2018; Wang & Ahmed, 2007) highlight essential questions an organization shall ask itself during a turbulent environment. These questions include: how to grasp this environment? which features should be examined? Furthermore, how to continue integrating the many variables accessible in the organization? These questions provide essential considerations to manage unforeseen and turbulent situations effectively.

Similarly, the issues triggered by turbulent situations are also connected to identifying pathways, understanding how to combine previously acquired knowledge, and capturing and processing it to better match opportunities (Wang & Ahmed, 2007). Also, when times are tough, HEIs may pay attention to how they can use these capabilities to make institutions resilient to the negative effects of

environmental turmoil (Eisenhardt & Martin, 2000). The possible solution may be found in the environment in which the HEIs operate (Hayter & Cahoy, 2018). However, it may also reach solutions through leveraging open innovation. Thus, compared to HEIs operating in volatile, unpredictable contexts and having fast-changing environments are more open to a greater number of innovative alternatives than HEIs operating in stable and predictable environments.

In this view, the need to develop resilient HEIs, which can sustain a global crisis, such as the pandemic, has never been critical as it is today. It is pertinent to study the factors contributing to building resilient HEIs that can sustain the impacts of current and future disruptions. In other words, HEIs may benefit from knowing how to future-proof themselves. Therefore, this study investigates the factors shaping the organizational resilience of HEIs by drawing upon two main bodies of literature. The first relates to the dynamic capabilities perspective initially created as a general theoretical framework to comprehend firm-level competitive advantage using an innovative approach. Dynamic capabilities refer to “*an organization’s ability to incorporate, build and redesign its natural and external competencies to address fast-changing business environment and sustain their competitive advantage*” (Teece et al., 1997, p. 516, 517). Many studies utilize the dynamic capabilities framework to gauge firm performance (Bitencourt et al., 2020; Jantunen et al., 2012). However, to the authors’ knowledge, scant studies have adopted the dynamic capabilities framework to study the organizational resilience of HEIs to deal with the impacts of the COVID-19 pandemic. Thus, we study this unaddressed facet by extending the dynamic capabilities framework to provide resilience to HEIs.

Consequently, this quantitative study aims to investigate the impact of dynamic capabilities on organizational resilience with the mediating effect of open innovation. The study also provides theoretical and practical significance to determine the applicability of selected variables in HEIs in Pakistan. This study broadens our understanding of and identifies the latest mechanisms that facilitate the influence of dynamic organizational capabilities on resilience capacity through open innovation and addresses the following research question:

- “*What is the role of open innovation in the relationship between dynamic capabilities and organizational resilience?*”

This study encompasses the broader scope of the prevailing situation. It will serve as a guideline for HEIs to work in a new normal environment, where they confront different issues, as mentioned earlier (e.g., reduced revenues, increased costs, new teaching methods, faculty and student psychological issues, etc.). This study’s findings will benefit academics, researchers, and practitioners who can apply conducive education policies and assist staff and students to better adjust to the new normal.

The chapter proceeds as follows. It starts with the literature review, followed by developing the framework of the research idea. Then the methodology, results, analysis of the results, and discussion are presented. Finally, theoretical and practical implications, along with concluding remarks about the research, are discussed.

2 Theoretical Background

The HEIs started experiencing the challenges and effects of the COVID-19 pandemic in early 2020. The foci of past studies have been to present how this pandemic has impacted HEIs (Pokhrel & Chhetri, 2021; Thatcher et al., 2020), neglecting the critical aspect of suggesting how to mitigate such impacts (Pokhrel & Chhetri, 2021). These studies have stressed the negative impacts of divesting the research that may provide a way forward and increase robustness in case of any similar events in the future. Stukalo and Simakhova (2020) argue that transition to the online learning environment, lack of digital literacy to adopt online learning methods, and decreased student satisfaction are the most dominant challenges faced by the Ukrainian higher education sector due to COVID-19. Similarly, Rashid and Yadav (2020) suggest that the recent pandemic severely impacts HEIs, and teachers' training to learn digital technologies is one of the biggest challenges for the Indian higher education sector. Thatcher et al. (2020) present a bigger picture of how reduced enrolments of international students have impacted the financial situation and employment in Australian universities. Although these studies have been conducted in different countries with different variables, they commonly point out the negative consequences of the pandemic on universities, and none of them assesses the ways to facilitate the process of creating resilient HEIs, which are not only able to deal with the current pandemic but capable of mitigating any future disruptions.

The extant literature suggests that dynamic capabilities indirectly influence firm performance (Protogerou et al., 2012; Wilden et al., 2016). They add value through redesigning operational capabilities through efficient utilization of resources. Therefore, the influence of an organization's dynamic capabilities on its performance is mediated by its operational capabilities. These capabilities refer to "*corporate and business unit mechanisms that affect firm strategy and performance*" (Wilden et al., 2016, p. 1033).

This study considers open innovation as a mediating variable between two major concepts: dynamic capabilities and organizational resilience. This has not been studied extensively in the literature, providing an impetus for this research. Organizations can easily enjoy the benefits of open innovation by incorporating dynamic capabilities and agility into their work processes (Bogers et al., 2019). Likewise, Teece (2020) suggested that open innovation is a natural fit with the dynamic capabilities framework, and strong dynamic capabilities will increase the effectiveness of open innovation efforts. Although recent studies conceptually acknowledge the interrelationship between an organization's dynamic capabilities and open innovation, there is a lack of research-based evidence on the relationship between dynamic capabilities and organizational resilience with the mediating effect of open innovation.

The concept of open innovation refers to innovation beyond the organizational boundaries in terms of knowledge flows. Open innovation requires organizations to adopt different strategies and mechanisms to drive innovation aligned with their

business models (Chesbrough & Bogers, 2014). Gassmann et al. (2010) explained that open innovation allows an organization to utilize knowledge from both internal and external sources for innovative processes and systems. Open innovation strategy consists of three fundamental components: inside-in, inside-out, and outside-in (Chesbrough & Bogers, 2014). These components facilitate innovation and maintain firm competitiveness (Natalicchio et al., 2017). The crux of this strategy is to open the innovation process to internal and external resources through the flow of knowledge (Chesbrough & Bogers, 2014). Through a bibliometric investigation of 321 sources, Randhawa et al. (2016) concluded that applying a dynamic capabilities framework in open innovation is scant and called for developing a hypothesis based on the underutilized impact of dynamic capabilities on open innovation and organizational resilience. During the COVID-19 crisis, open innovation, strong communication, and effective collaboration among government organizations and educational institutions are the critical factors of success (Patrucco et al., 2021).

3 Development of Framework

Dynamic capabilities are considered ambidextrous (Drnevich & Kriauciunas, 2011; Pundziene et al., 2021). They can leverage either incremental or radical innovation to ensure superior performance. Similarly, they also tend to enhance and develop new products, services, and business processes. Therefore, several authors relate dynamic capabilities to innovation (Karna et al., 2016; Kogut & Zander, 1992; Lawson & Samson, 2001). For example, Lawson and Samson (2001) related innovation capabilities with dynamic capabilities and discussed how both could play transformational roles. Innovation capabilities tend to transform knowledge, ideas, processes, designs, services, and products in favor of the firm and its stakeholders. Likewise, Kogut and Zander (1992) defined innovation capability as an ability to recombine and produce innovation. However, Karna et al. (2016), in their discussion about the nature of dynamic capabilities, mentioned that they stimulate innovation capabilities. That is, dynamic capabilities have the potential to enable open innovation practices (Chesbrough et al., 2021). The theory of open innovation may seem simple, but it is challenging.

Therefore, the concept of dynamic capabilities helps turn the open innovation process into success (Teece, 2020). For instance, the literature discusses that when dynamic capabilities are strong, the open innovation initiatives are efficiently taken, effectively governed, and adequately addressed (Chesbrough et al., 2021; Gassmann et al., 2010). Since the framework of dynamic capabilities is systematic and follows a holistic approach, it is considered the best fit for coordinating several decisions and managing complications arising from open innovation (Leiblein et al., 2018; Teece, 2016, 2020). Considering the significance of managerial skills and exposure to external sources of knowledge in interdependent and networked firms, dynamic capabilities nurture managerial skills to acquire, utilize, and integrate assets and diverse technologies across organizational boundaries.

Similarly, dynamic capabilities benefit organizations (using internal knowledge) in tackling liabilities during the knowledge creation process (Laursen & Salter, 2014). Innovation requires a series of interconnected and interdependent activities as it is complex. Likewise, open innovation also involves communities, ecosystems, and networks—to mention just a few—and requires dynamic capabilities (Chesbrough et al., 2021; Teece, 2020). Furthermore, dynamic capabilities also serve as a rudder to open innovation as it helps identify which direction it should take. Simultaneously, dynamic capabilities help ensure dynamism within an organization and allow it to exploit innovation quickly. Likewise, dynamic capabilities also serve as navigators, directing the context (organizational, competitive, and regulatory) within which innovation may occur. Therefore, keeping in mind the above, we hypothesize the following:

H₁: Dynamic capabilities positively predict open innovation.

Organizational resilience is the ability of an organization to develop resistance mechanisms against unforeseen situations. It prepares and enables an organization to forecast distress and take possible measures to maintain stability (Akpan et al., 2021; Burnard & Bhamra, 2011). Organizational resilience has been studied at two different levels: individual and organizational. At the individual level, it is considered to be the characteristics and abilities of employees. Coutu (2002) identifies people's characteristics and capacity to bounce back after difficult, adverse, uncertain, and stressful situations. Likewise, Näswall et al. (2015) considered it a capability to utilize organizational resources during crises positively. Similarly, Britt et al. (2016) related it to learning outcomes. They defined it as the ability of an employee to adapt positively and contrive to learn outcomes after facing a challenging situation.

Researchers have used the system perspective lens at the organizational level to define organizational resilience. For instance, organizational resilience is the dynamic capability of an organization to manage, alter, and redefine its structure during times of change or uncertainty (Dalziell & McManus, 2004). Likewise, other authors have described it as a reinforcement capability to resolve and manage ongoing difficulties and vulnerabilities (McManus et al., 2008; Nathanael & Marmaras, 2006). However, all studies consistently stress that organizations must remain fully aware of their environment.

Open innovation and its relationship with organizational resilience have attracted greater attention from researchers in the last two decades. However, the literature is scant and clueless on the role of open innovation in building a resilient organization. Considering the prominence of open innovation, it is crucial to identify different elements at several levels—organizational, industry, regional, societal, etc. (Bogers et al., 2017). The link between different levels relates to the market path, shared activities, relationships, and collaborations. Further, this link is also related to the level of formalization and knowledge among actors (Öberg & Alexander, 2019). Several authors researching open innovation have emphasized the potential to translate and integrate information flow within an organization. This is because open innovation incorporates several capabilities like creation, cooperation,

collaboration, and interaction, to name a few, in product development (Öberg & Alexander, 2019). At the same, these capabilities are vital for building a resilient organization. Therefore, we hypothesize the following:

H₂: Open innovation positively predicts organizational resilience.

The relationship between dynamic capabilities and organizational resilience follows several theoretical assumptions of chaotic systems, environmental dynamism, and understanding of the processes, operations, and tasks. However, the intricate relationship between the two is also discussed in the literature. For example, Danneels (2016) reports a positive relationship between the aforementioned constructs. The second-order dynamic capabilities enable organizations to address environmental, technological, and market challenges. Likewise, several authors have investigated the relationship between organizational resilience and dynamic capabilities. For example, Žitkienė (2015) examined the effect of dynamic capabilities on adaptability (a measure of organizational resilience) in the Slovenian services sector, and Kantan et al. (2017) explored the effect of dynamic capabilities on agility (another measure of organizational resilience) in the Turkish retail industry. Few other authors have studied the relationship between dynamic capabilities and organizational resilience. Chukwumeka and Onuoha (2018) discussed that dynamic capabilities intensify adaptability in the fast-food restaurant industry, whereas Teece et al. (2016) found encouraging linkages between dynamic capabilities and agility.

The literature on organizational resilience also discusses organizational performance and competitive advantage. For example, Beer (2009) discussed that level of performance reflects an organization's resilience. However, dynamic capabilities do not affect organizational performance directly. Instead, they have an indirect relationship by reconfiguring operations, tasks, processes, and activities (Pavlou & El Sawy, 2011). For example, when organizations face uncertainty, turbulence, and abstruseness, managers must construct a narrative about conflicting signals and decide how to proceed (Teece et al., 2016). Managers (in combination with employees) understand the flow of knowledge within organizational boundaries, use external and internal knowledge, and devise mechanisms to sustain a business model (Chesbrough & Bogers, 2014; Gassmann et al., 2010). In other words, organizational employees ought to embrace open innovation.

From the literature, it can be inferred that there is an indirect relationship between dynamic capabilities and organizational resilience. However, what mediates this relationship is still undecided. We believe that open innovation may mediate between dynamic capabilities and organizational resilience, and we offer two possible reasons for this preposition. First, it has a propensity to manage knowledge inflows and outflows. Second, it may serve as a bridge to meet the firm's needs, that is, developing a resistance system. In this study, we follow the three-dimensional—"inside-out (investment in R&D), outside-in (customer engagement in innovation), and inside-in innovation capabilities"—framework of open innovation (Pundziene et al., 2021).

Additionally, some authors (Bogers et al., 2019) have claimed that dynamic capabilities, among several variables, are prerequisites to boost business models and

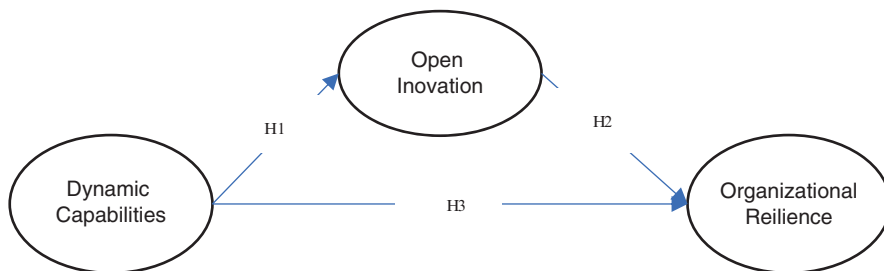


Fig. 7.1 Conceptual framework

make an organization resilient. However, this potential can only be realized through open innovation and by focusing on internal capabilities (Leloup, 2020). Thus, we hypothesize that:

H₃: Dynamic capabilities positively predict organizational resilience.

H₄: Open innovation mediates the relationship between dynamic capabilities and organizational resilience.

Based on these theoretical arguments, we present a conceptual framework, shown in Fig. 7.1, which illustrates the proposed relationships between dynamic capabilities, open innovation, and organizational resilience.

4 Methodology

4.1 Measure of Constructs

The scales were adapted from previous studies and amended accordingly to fit the context of the present study. The scale for dynamic capabilities was adapted from Pundziene et al. (2021). To measure the construct of open innovation, the items were adapted from Chesbrough (2003), and the measurement scale for organizational resilience was adapted from Akpan et al. (2021). These scales and results related to the construct reliability and validity are presented later in the results section.

4.2 Sample and Data Collection

A structured survey was conducted to test the relationships proposed in the conceptual framework. The questionnaire was designed based on a 5-point Likert scale ranging from “strongly disagree” coded as “1” and “strongly agree” coded as “5”. The sample for the study was drawn from university employees that included

teaching faculty and administrative staff involved in decision-making processes for their respective institutions. The sample comprised 350 participants randomly selected from HEIs in Pakistan. A screening question ensured that the participants represented the required population (teaching faculty and administrative staff involved in decision-making). Of the 350 questionnaires distributed, 295 were returned complete, and 284 of the total complete questionnaires were deemed fit for analysis. The reason behind the very good response rate was that the survey was developed online through Qualtrics, and the link to the survey was shared with the respondents through the personal contacts of the researchers. A significant effort was put into the survey distribution, followed by phone calls and emails to follow up on completing the survey response. Table 7.1 presents the demographic distribution of the sample.

To test the sample for its robustness, the statistical power of the sample of 284 was calculated (Mayr et al., 2007) using G*Power version 3.1.9.7 software (Faul et al., 2007). G*Power was used with a 5 percent significance level that yielded a power of 0.9, which was above the threshold of 0.8 (Chin, 1998). Simply put, the sample of 284 was sufficient to run the structural equation modeling for the present study.

Regarding the demographic distribution of the sample, there was not much of a percentage difference between male (53.2%) and female (46.8%) participants. On the contrary, for the job position, a more significant percentage (59.2%) of

Table 7.1 Participant demographic profile

Variable	Description	Percentage
Gender	Male	53.2
	Female	46.8
Job position	Administrative staff	59.2
	Lecturer	29.6
	Assistant Professor/Senior Lecturer	4.6
	Associate Professor	3.9
	Professor	2.8
Public/Private Institution	Public	65.5
	Private	24.3
	Semigovernment	10.2
Nature of Institution	Agriculture/Veterinary	13.7
	Art & Design	6.7
	Computer Sciences & IT	4.6
	Business Education	12.7
	Engineering & Technology	29.2
	Medical	0.7
	General Universities Large (student enrolment > 7000)	10.9
	General Universities Medium (student enrolment >3000 and <7000)	16.2
	General Universities Small (student enrolment <3000)	5.3

participants belonged to the administrative positions, and the second-highest number of participants (29.6%) came from the teaching staff (lecturer). Furthermore, most of the participants (65.5%) came from public educational institutions, followed by private (24.3%) and semigovernment (10.2%) institutions. In contrast, the nature of institutions varied and found distributed among almost all the institutions without much difference, as presented in Table 7.1.

The demographic profile of the participants, as presented in Table 7.1 reflects that the sample is a good representative of the population, as shown by the percentage distribution for gender, job position, and the type of institution.

4.3 Analysis

For the data analysis, the PLS-SEM technique was used with the help of SmartPLS version 3.0 to test the model. PLS-SEM can easily handle nonnormal data, unlike other data analysis techniques requiring data to be distributed normally (Hair et al., 2021). We used a two-step approach to run the complete analysis; first, assessment of the measurement model, second, assessment of the structural model (Hair et al., 2021; Zainuddin et al., 2017). The two-step approach aims to ensure that the measures are reliable and valid before the structural model is tested for the relationships between the latent variables.

5 Results

5.1 Measurement Model Assessment

An assessment of the measurement model needs to be performed to ensure that the constructs' scales are reliable and valid to measure the intended constructs. Therefore, we checked the scales for reliability (Cronbach's alpha and composite reliability), convergent validity (average variance extracted and factor loadings), and discriminant validity (HTMT or Heterotrait-Monotrait ratio). The Cronbach's alpha and composite reliability values for all the constructs were above 0.7, as presented in Table 7.2. Similarly, for the convergent validity, all the factor loadings were above the threshold of 0.7 (Hair et al., 2021). In addition to factor loadings, we ran Average Variance Extracted (AVE), which reflects how a measure positively correlates with the alternative measures of the same construct (Hair et al., 2021). Item loadings are presented in Table 7.2; four items from organizational resilience were deleted during the measurement model assessment due to low item loadings. The loadings for items OR1, OR2, OR3, and OR4 are 0.403, 0.390, 0.398, and 0.538. The load loadings for these items may be attributed to the contextual characteristics of this study. The results in Table 7.2 show that the AVE for all the

Table 7.2 Factor loadings, reliability, and convergent validity

Item	Measure				
	Loadings	Cronbach alpha	rho_A	Composite reliability	Average variance extracted (AVE)
Dynamic capabilities		0.959	0.960	0.963	0.635
DC1	0.694				
DC2	0.774				
DC3	0.797				
DC4	0.730				
DC5	0.853				
DC6	0.817				
DC7	0.818				
DC8	0.809				
DC9	0.806				
DC10	0.817				
DC11	0.783				
DC12	0.845				
DC13	0.762				
DC14	0.818				
DC15	0.809				
Open innovation		0.938	0.945	0.947	0.641
OI1	0.701				
OI2	0.787				
OI3	0.758				
OI4	0.757				
OI5	0.778				
OI6	0.857				
OI7	0.851				
OI8	0.847				
OI9	0.750				
OI10	0.901				
Organizational resilience		0.932	0.936	0.944	0.677
OR5	0.851				
OR6	0.852				
OR7	0.857				
OR8	0.793				
OR9	0.736				
OR10	0.818				
OR11	0.800				
OR12	0.867				

Table 7.3 Discriminant validity measure—HTMT ratio

	Dynamic capabilities	Open innovation	Organizational resilience
Dynamic capabilities			
Open innovation	0.748		
Organizational resilience	0.791	0.674	-

constructs is above the threshold of 0.5, indicating that the convergent validity for the constructs is established. The results for the assessment of the measurement model are presented in Table 7.2.

Discriminant validity measures how distinct a construct is from other constructs in the model (Hair et al., 2021). An HTMT ratio of above 0.9 is reflective of a potential issue of collinearity between the constructs. For the conceptual model (Fig. 7.1), the HTMT ratio for all the constructs is less than 0.9, which shows that there is no issue of collinearity in the model. Table 7.3 presents the HTMT ratio results.

5.2 Structural Model Assessment

After completing the assessment of the measurement model and ensuring that the constructs' reliability and validity are established, an assessment of the structural model was performed. Structural model assessment involves examining the model for its predictive capabilities and the extent of relationships between latent variables (Hair et al., 2021). To obtain the results for path coefficients (standard beta), standard error, *t* values, and *p* values, a complete bootstrapping procedure was run using SmartPLS 3.0 software. The bootstrapping was run at $N = 284$ (subsamples = 5000) at 5% significance level.

The results from the structural model assessment reveal that all the hypotheses (direct as well as indirect) are significant. Based on the path coefficient values, the relationship between dynamic capabilities and open innovation is the strongest ($\beta = 0.719$) among all the relationships. The second strongest relationship was between dynamic capabilities and organizational resilience ($\beta = 0.621$). In contrast, the relationship between dynamic capabilities and organizational resilience mediated by open innovation was weak ($\beta = 0.139$), even though it was statistically significant. Table 7.4 presents the bootstrapping results for the assessment of the structural model.

Figure 7.2 shows the structural model output with *p* values for inner and outer models. The assessment of the structural model strongly supports all three proposed relationships. To assess the model's predictive power, we also calculated the *R*-squared (R^2) value for the endogenous variables. The R^2 values of 0.75, 0.5, and 0.25 for dependent variables reflect substantial, moderate, and weak relationships, respectively (Henseler et al., 2015). Therefore, based on the results given in

Table 7.4 Path analysis: structural model evaluation

Hypothesis	Direct effect	Std. Beta	Standard Error	t Statistics	p Values	R ²	Decision
H1	DC->OI	0.719	0.031	22.982	0.000	0.534*	Supported
H2	OI->OR	0.194	0.064	3.008	0.010	0.578**	Supported
H3	DC->OR	0.621	0.059	10.59	0.000		Supported
Hypothesis	Indirect effect	Std. Beta	Standard Error	t Statistics	p Values		
H4	DC->OI->OR	0.139	0.047	2.961	0.003		Supported

* R² value for Open Innovation; ** R² value for Organizational Resilience

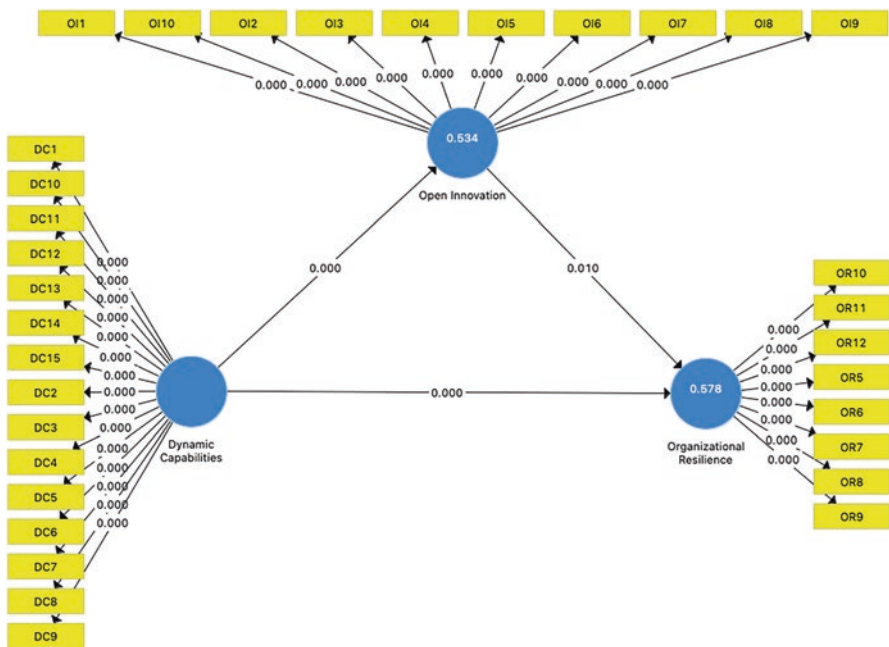


Fig. 7.2 Structural model

Table 7.4, the variance of 0.578 in organizational resilience is explained by open innovation and dynamic capabilities combined. Similarly, a variance of 0.534 in open innovation is explained by dynamic capabilities. Based on the interpretation criteria for R² (Henseler et al., 2009), we can say that the exogenous variables (dynamic capabilities and open innovation) moderately explain the variance in organizational resilience.

6 Discussion and Implications

The limited research on the significance of the impact of the COVID-19 pandemic on Pakistan's HEIs motivated the current study. There is no shortage of research on dynamic capabilities and open innovation. However, to the authors' knowledge, the influence and contribution of open innovation in relation to dynamic capabilities and organizational resilience in the context of HEIs are scantily addressed in the literature. In our study, we answered the research question about the role of open innovation in the relationship between dynamic capabilities and organizational resilience. In this regard, we investigated the direct impact of dynamic capabilities on organizational resilience and measured the mediating effect of open innovation between dynamic capabilities and organizational resilience. Considering the current COVID-19 pandemic and resulting uncertainty, this study provides measurable findings that are highly relevant to the present situation of HEIs.

The findings of this study pave the way for HEIs to recover and sustain the negative impacts of the COVID-19 pandemic. Previous research's main focus has been identifying the current pandemic's consequences, whereas this study makes a novel contribution by focusing on developing resilient HEIs that can bear the grim consequences of the COVID-19 pandemic. In doing so, our study draws upon two theoretical bodies: dynamic capabilities and open innovation, to measure the organizational resilience of HEIs. Schilke et al. (2018) stated that although a few recent studies have attempted to explore the disciplinary foundations of dynamic capabilities, they have not provided a comprehensive framework to fully understand the various aspects, for example, mediating mechanisms and effects on organizational variables. Moreover, they argued that the relationship between dynamic capabilities and organizational variables is mediated or moderated by certain relevant variables.

The current study drives attention toward an important facet by providing evidence that open innovation is one of the critical variables that mediate the relationship between dynamic capabilities and organizational resilience. Our findings have confirmed that the relationship between dynamic capabilities and organizational resilience is mediated by open innovation. This finding supports the recent study by Pundziene et al. (2021), who extended the dynamic capabilities and open innovation framework to investigate firm performance. Dynamic capabilities strengthen the organization's innovation process through two-way communication and the exchange of knowledge and other valuable resources across the external and internal boundaries of the organization. Therefore, our study extends some notable existing works (Teece, 2020; Wilden et al., 2016), arguing that dynamic capabilities create value through sensing and reconfiguring operational capabilities and indirectly influence organizational resilience mediated by the mechanism that supports the development of strategic directions. This study concludes that dynamic capabilities might be considered antecedents of open innovation, enhancing effectiveness and potential success. An organization with weak dynamic capabilities is less likely to utilize the open innovation process successfully.

6.1 Theoretical Implications

The findings of this study extend the open innovation theory by proving that dynamic capabilities are antecedents of open innovation in improving organizational resilience. Through this study, the authors point toward a less explored path to measure the influence of these two theories on organizational resilience during the COVID-19 pandemic in the context of HEIs. These mechanisms have been neglected in the open innovation literature; therefore, we believe our study provides promising avenues for scholars.

This study also contributes to the dynamic capabilities framework joining the missing link between dynamic capabilities and organizational resilience. The findings reveal that the indirect impact of dynamic capabilities on organizational resilience is mediated through open innovation. The findings also reveal that dynamic capabilities significantly impact open innovation, and these two factors significantly positively impact organizational resilience.

6.2 Managerial Implications

The findings offer several managerial implications. For instance, open innovation is important in establishing and maintaining organizational resilience. Investment in R&D and innovation-driven projects can help HEIs create and exchange information required to improve their resilience. The authorities in HEIs shall understand the significance of the R&D projects. These projects will enable them to form and create new knowledge, design, and technologies, allowing HEIs to gain intellectual property rights.

Consequently, it will help achieve sustainable growth and an avenue to upscale the project's output over time. Therefore, HEIs shall pay attention to allocating their capital to R&D to bring innovative projects. At the same time, since HEIs have limited resources, they shall also devise a mechanism to transfer underutilized knowledge or unattended projects to third parties (favoring inside-out innovation). It is worth mentioning to evaluate the relevance of the created knowledge with the stakeholders, which may ensure that the value created by R&D and innovation will be appropriated.

HEIs shall also liaise with industries to acquire market-related information and projects and internalize innovation processes. This academia-industry collaboration will boost the institution's innovative performance and build a competitive advantage. Such collaborations and liaisons support outside-in innovations for HEIs. Supplement to that, the HEIs shall make a mechanism to successfully transfer new ideas, creative ways, novel processes, and knowledge into and across departments within the respective institution. Such synergy among internal departments, functions, and units assures coordination and integrated efforts toward achieving inside-in innovation. The study validated that if the HEI has inefficient internal innovation

processes, its open innovation results will be curtailed. Hence, we suggest that the administration and management of HEIs should pay equal attention to external and internal innovation processes.

Additionally, to improve open innovation, HEIs should strengthen their dynamic capabilities in a way that HEIs shall also strengthen sensing, seizing, and transforming capabilities by regularly scanning the external and internal business environments, capitalizing on new opportunities, finding ways to improve student engagement, and enhancing capabilities to create value. The dynamic capabilities complement open innovation. Therefore, HEIs shall foster openness in communication channels, feedback, hierarchies, and organizational processes to gain an edge over interaction during external collaboration and innovative projects. The HEIs build a mechanism to upgrade and revisit their capabilities using different learning models to address the volatile nature of the external environment. This is possible when organizations develop a learning culture. This culture will help shift the focus from a reactive to a proactive approach and help in breaking old habits and replacing these with new ones. Therefore, learning culture in HEIs is also vital to hone dynamic capabilities.

COVID is an unexpected and external shock to the world, and for HEIs, it is the worst nightmare. Nevertheless, using dynamic capabilities, HEIs may have been able to withstand the pattern of shutting down operations and slowing the pace of activities. However, if HEIs utilize open innovation, the unusual occurrences, such as COVID, might act as a catalyst for creating numerous and, in many cases, more innovative modalities—inside-out, outside-in, and inside-in—of collaborations. Altogether, dynamic capabilities in conjunction with open innovation can help HEIs increase their resilience and recover from the consequences of the pandemic.

7 Concluding Remarks, Limitations, and Future Research

This study examined the influence of dynamic capabilities on open innovation and, ultimately, the mediating role of open innovation in the relationship between dynamic capabilities and organizational resilience in the context of HEIs. Based on survey data conducted from 284 teaching and administrative staff, using structural equation modeling, our findings supported the proposed research hypotheses. The findings provide practical implications for scholars and the managers and administrators of HEIs to devise proactive policies to strengthen knowledge management inside and outside of universities.

The study has several limitations. The data is collected from one developing Asian country—Pakistan. Future studies may collect data from highly innovative developed countries. A comparative study on the impacts of the pandemic on developed and developing countries may be conducted to recommend the best strategy for each. Future studies may use interviews and other qualitative research methods to explore organizational resilience during the pandemic. Based on the literature review, we selected the most critical factors. However, future research may include

more relevant factors to improve the research model's predictive power. We measured the mediation role of open innovation; future research may examine the moderating role between dynamic capabilities and organizational resilience.

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Chapter 8

Re-envision of Learning by Integrating Technology in Higher Education



Sunpreet Kaur Sahni

Abstract Postpandemic, there has been a paradigm shift from conventional to online mode, resulting in digital transformation for several stakeholders offering and availing higher educational services. The perspective of the chapter is to examine the outcomes in higher education and how it will benefit crafting effective teaching-learning strategies by adopting the Hybrid method in meeting the educational goals. The chapter will investigate the factors stimulating hybrid learning by proposing a conceptual model incorporating various dimensions of accessibility, affordability; digital literacy; availability of hardware and software platforms and self-efficacy toward hybrid learning. Per se, the chapter will advance the theoretical understanding of the elements of the SWOC Matrix (strengths, weaknesses, opportunities, and challenges) pertaining to higher education, further discussing the cross-case analysis that will relate to the components of the SWOC model. It will, further, direct how to design the strategies for the stakeholders, besides aligning the research questions with the outcomes. The challenges encountered in hybrid learning need to be addressed for the teaching professionals and higher educational institutions to evolve with the changing and unpredictable scenario. Besides, policies and practices incorporated in the higher educational landscape worldwide are highlighted, and suggestions are furnished to overcome the teaching-learning roadblocks to harness existing opportunities to make the learning successful.

Keywords Hybrid learning · Higher education · Postpandemic · Stakeholders · SWOC analysis · Cross-case analysis

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1 Introduction

The COVID-19 pandemic has sharply affected the economies globally, is considered to have caused a catastrophe more than World War II (ILO, 2020), and has encompassed more than 216 nations through its contagion (World Health Organization, 2020). This brought life to near closure and jeopardized not only the economic activities have had a detrimental impact on the services sector, particularly the education sector, resulting in the close-down of the universities, colleges, and schools. The world statistics depict that as of 2021, the COVID-19 pandemic has had a turbulent impact on 1.7 billion students globally (UNESCO, 2021). Due to the ongoing COVID-19 crisis, there has been a paradigm shift from the traditional mode of learning, which was earlier disseminated through the on-campus learning mode, to computer-aided learning technology through online platforms. The educational landscape has headed toward a paradigm change on the global front backed by technological changes (Lee, 2008) after the turbulent times of the pandemic period. Undoubtedly, technology has facilitated to counter this grave problem; however, it has led to various challenges also. Globally, the new mode of online teaching is a matter of apprehension regarding its effectiveness in approaches to teaching and learning (Gopinathan & Ramachandran, 2020) has further raised concerns pertaining to its performance; accessibility and usability, nevertheless, have proved to be an antidote to the ongoing scenario of pandemic (Jena, 2020). The new method of imparting education has been tagged as “emergency remote teaching” and “crisis distance education” (Hodges et al., 2020; Lily et al., 2020), establishing the new pedagogical framework, which is considered to be requisite for higher educational institutions for their sustainability and reinventing the instruments, to enrich the teaching-learning process (Ioannou, 2018), for the various stakeholders – students, teachers, and educational institutions.

1.1 *Incorporating Technology in Education*

The indeterminable and dynamic environment of volatility, uncertainty, complexity, and ambiguity (VUCA) (Bolman & Deal, 2015), arising due to the changing natural, technological, and global educational environment, has created ripples due to the communicable disease. The advent of technology has opened new gateways in the educational arena, countering the threats arising from the VUCA environment and maneuvering it to its advantage. This has led the educational institutions to cope with the challenging situation by structuring new frameworks (Rieley, 2020) and incorporating technology in disseminating the teaching-learning process (Saxena, 2020). In the evolving educational scenario, ubiquitous learning has replaced face-to-face classroom teaching with online or hybrid learning (Lemoine & Richardson, 2019). Consequently, the institutions endeavor to adapt to the changes by integrating technology in teaching pedagogy. Institutions worldwide are using technology

to interact with the student population (Zhao, 2015), where the students can have the accessibility of learning and sharing, 24*7 and from any place (Cheng, 2016). The mediation of digital education has triggered changes in higher education (Ossiannilsson, 2018) and transformed the structure and delivery outcomes (Van, 2018). With the perspective of competing globally and accepting the challenges of the prevailing environment, hybrid teaching has refurbished the learning process (Cronin et al., 2016).

1.2 *Hybrid platform of teaching and learning*

The hybrid method of teaching and learning engagement has given a new dimension to the educational sphere, where diverse technologies have converged to design and disseminate education; besides, technology is considered the fundamental component. It can be delineated as an approach that integrates conventional, face-to-face teaching with electronic formats in delivering educational services (Bonk & Graham, 2006). This technique is regarded as “any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path or pace” (Staker, 2011, p. 5). “It focuses on optimizing achievement of learning objectives by applying the ‘right’ learning technologies to match the ‘right’ learning to the ‘right’ person at the ‘right’ time” (Lin, 2009, p. 57). Furthermore, hybrid learning is redefining the content of the course-work, its audience or the students; the objective of the program; the mode of technology used and the teaching professionals (Vaughan & Garrison, 2005). This method facilitates the students availing of higher technical education with a pragmatic approach (Kjellin et al., 2014). Educators concurrently teach from distance and in-person, using tools like video conferencing, digital content; prerecorded video lectures; discussion forums; online handouts, etc. This strategy has the prospects to facilitate student-centered learning (Dori & Belcher, 2005), making teaching resources easier for the teaching professionals (Gleason & Greenhow, 2017).

Hybrid learning incorporates two different models-

- The first model is a concoction of online and one-to-one interaction conducted simultaneously, where some students might attend online sessions, and some might be physically present in the classroom.
- Secondly, the partially online curriculum is facilitated with digital tools and techniques and partly classroom teaching (Ho & Burniske, 2005).

Even though this method is a new concept in educational innovations, nevertheless has better prospects to offer to enable students in the learning process (Powell et al., 2014) by using digital texts and techniques, besides using audio and videos (Curtis & Lawson, 2001), likewise, has become popular among the student community (Peterson & Bond, 2004). The students’ social presence is crucial for establishing their gratification pertaining to the course work, participation, and learning

outcomes (Bali, 2017). On the contrary, its absence may create a roadblock to effective education.

2 Rationale and purpose of the study

The perspective of the chapter is to examine the outcomes in higher education and how it will benefit crafting effective teaching-learning strategies by adopting the Hybrid method in meeting the educational goals. *As discussed in the earlier segments, the teaching pedagogy has undergone a significant transformation with hybrid learning, considered a respite and an alternative plan of action to meet the expectations of the students in an unpredictable scenario, thus requiring an in-depth investigation. Further, prior literature supports that hybrid learning offers similar benefits to the teaching professionals and the students from the perspective of integrating the elements of the coursework (Ausburn, 2004), convenience and flexibility (Fortune et al., 2006), promotes student learning (Riffell & Sibley, 2005), complete course outcomes (Amrein-Beardsley et al., 2007), usage of various instructional methods (Bonk & Graham, 2006), and results to student satisfaction (Garrison & Vaughan, 2008).*

The researchers have extensively looked into the domain of hybrid learning by exploring its benefits and challenges in higher education (Meydanlioglu & Arikan, 2014). Considering the utility of the innovative technology, the purpose of the chapter is to investigate the factors stimulating hybrid learning by proposing a conceptual model that incorporates various dimensions. Per se, the chapter will advance the conceptual understanding of the elements of the SWOC Matrix pertaining to higher education by discussing the case studies and will offer a substantial understanding of the benefits, its complexity, and the problems encountered, besides harnessing the existing opportunities in the education arena, which calls for exploration.

The chapter addresses the following proposed research questions to be looked into:

- Firstly, what are the determinants that trigger the growth of Hybrid learning?
- Secondly, why is SWOC Matrix considered feasible when analyzing the Hybrid method in higher learning?
- Thirdly, how are the SWOC canvas model's components integrated to realize the stakeholders' objectives in Hybrid education during the postpandemic?
- Fourthly, how are dimensions of the conceptual model related to the components of the SWOC model to give direction to the teaching professionals to design their strategies and create a win-win situation for the stakeholders in the postpandemic scenario?

The chapter will further be structured by outlining the conceptual framework incorporating the interrelationship among the dimensions concerning the validated studies; discussing and building an appropriate model for hybrid learning;

cross-case analysis; implications for the academic professionals and service providers; and eventually proposing feasible strategies and addressing policies and practices, to make hybrid teaching-learning impelling globally.

3 Conceptual Framework

Prior studies have documented various dimensions influencing the hybrid learning process. As addressed in the first research question, this segment proposes a theoretical model by incorporating the determinants, which stimulates hybrid learning. Figure 8.1 illustrates the depiction of the conceptual framework, where the determinants of accessibility, affordability, digital literacy, availability of hardware and software platforms, and effectiveness influence the self-efficacy toward hybrid learning, which further stimulates learning outcomes and satisfaction for different stakeholders for disseminating and availing access to hybrid higher education.

The relationship of the framework mentioned above can be validated through the extant literature. The flexibility of hybrid education provides more complete and easy access to resources available online and offers the benefit of availing the facility of remote learning when unable to attend face-to-face learning (Rashid & Yadav, 2020; Woods et al., 2004). Further, inconsistent with the prior literature, Pituch and Lee (2006) have validated that accessibility influences students' acceptance of hybrid learning. Affordability is another crucial factor encouraging or creating a roadblock to accessing hybrid learning for learners belonging to a low-income group (Rashid & Yadav, 2020). The absence of Internet facilities can negatively affect learning (Miliszewska, 2007).

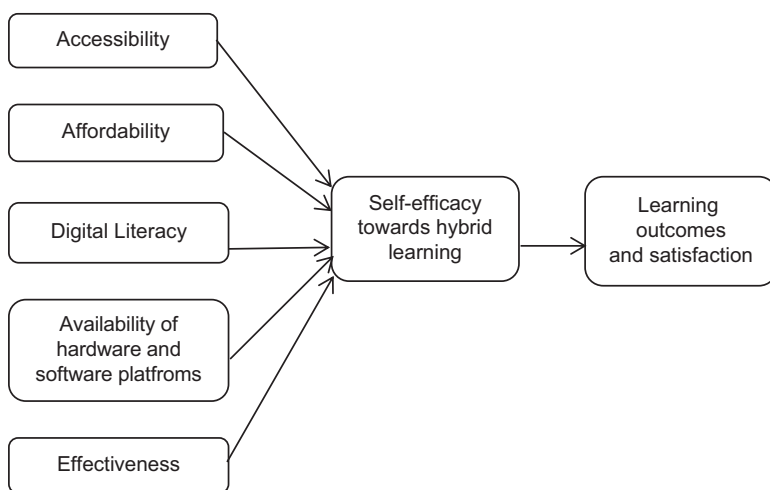


Fig. 8.1 Depicting the dimensions influencing self-efficacy and learning outcomes

Digital technology has facilitated hybrid learning when applied in teaching (Mishra & Koehler, 2006). Further, technological platforms have opened up new avenues on the educational front with the inevitable introduction of digital technologies (Mishra & Koehler, 2006). The availability of hardware and software digital entities fulfills the pedagogical objectives (Anastasiades, 2001; Kim et al., 2005).

Besides, using software systems facilitates the teaching professionals and the students in hybrid teaching pedagogy (Unwin et al., 2010). The prior studies have substantiated that hybrid teaching results in noticeable effectiveness (Baker & Pittaway, 2012; Dowling et al., 2003; Xie et al., 2020) due to its convenience and motivation of the students (Chen & Chiou, 2014). Further, it results in learning when reflective thinking is supported through pragmatic and applied activities (Driscoll & Carliner, 2005). The studies were consistent with the documented work, where hybrid learning incorporates the best features leading to effective learning and establishing a positive attitude and learning of the student (Felder & Soloman, 1996; Ford & Chen, 2000; Lin, 2008). Self-efficacy can be attributed to establishing a learner's confidence when accomplishing a task (Bandura, 1986), which is associated with academic excellence and competence (Reichwein Zientek et al., 2019). Self-efficacy was predicted to be a significant determinant influencing digital learning (Kreijns et al., 2013), influencing performance, and further building learning behavior and motivation (Wu et al., 2010). Hybrid teaching in higher education improvises content delivery by highlighting the session's in-person and offering online learning for substantial learning and outcome (Bowen, 2012). Further, the results of successful learning have been substantiated in the documented literature (Amrein-Beardsley et al., 2007; Bower et al., 2015; Dahlstrom et al., 2014; Weitze et al., 2013).

4 Analysis of SWOC Matrix for Hybrid Learning in Higher Education

SWOC analysis can be represented as a strategic planning tool to identify the Strengths, Weaknesses, Opportunities, and Challenges (Marilyn & Nixon, 2010); review the decision-making; and improvise the key areas to produce the desired outcomes (Bryson, 2004). To explore the second research question, SWOC analysis was administered, and a descriptive study based on the secondary data by referring to the journals, and scholarly articles, has been undertaken to comprehend and assess whether hybrid learning for higher professional education will prove to be viable and facilitate in structuring the strategies, to be effective in the long run. Figure 8.2 depicts the components of the SWOC in a segregated manner.

Strengths of Hybrid Learning in Higher Education

Strengths are the attributes that enable one to accomplish one's objectives. The transformation from traditional to digital teaching-learning in higher education through hybrid mode for the digital natives, well versed with technology, facilitates

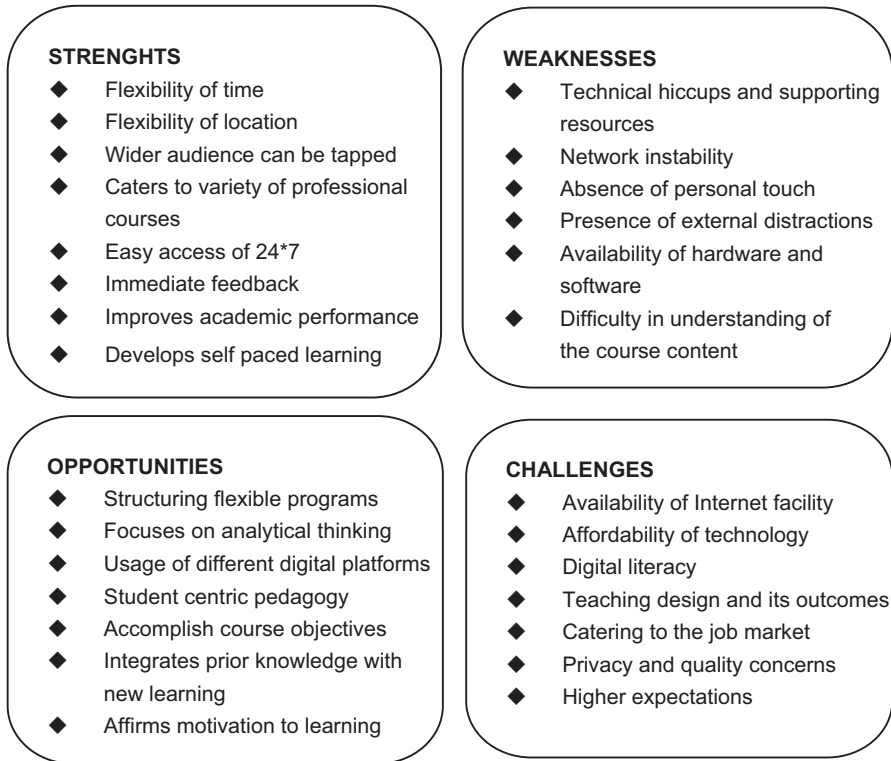


Fig. 8.2 Highlighting the strengths, weaknesses, opportunities, and challenges in higher education

maneuvering learning, considering their learning preference and perspective (Renes & Strange, 2011). Preceding studies have documented that hybrid learning removes the time barrier and facilitates student-centered learning (Xie et al., 2020), is flexible and accessible (Eschenbrenner & Nah, 2019), makes it easy to retain the information (Herselman & Hay, 2005), offers a variety of courses (Carrell & Menzel, 2001), removes mental and social interface (Guidera, 2004), results to immediate feedback, and acts as a predictor of efficient and intellectual learning (Martyn, 2003); in addition, it assists students in the learning process (Reynard, 2007).

Weakness of Hybrid Learning in Higher Education

Weakness is the trait that inhibits the realization of the objectives. The technology used while disseminating hybrid learning may not be in accordance with the learners' expectations and competencies and may pose a roadblock in the teaching-learning process (Attwell & Hughes, 2010). The absence of the student and the instructors' physical contact can be a disadvantage (Beard & Harper, 2002), and privacy may also be another concern (Plotrowski & Vodanovich, 2000). Besides, the large number of students in a hybrid class can negatively influence active

participation in activities and discussions (Weaver & Qi, 2005) and encounter difficulty in comprehending the content (Tabor, 2007).

Opportunities of Hybrid Learning in Higher Education

With hybrid learning, there exists the potential to integrate the previous learning with the newly acquired knowledge (Ora et al., 2017). Further, it leads to motivation in the learning process (Woltering et al., 2009). It develops rational thinking (Owston et al., 2013), simultaneously integrates online learning with prior knowledge (Riffell & Sibley, 2005), and fulfills course objectives (Dziuban et al., 2005) and nurtures student involvement and self-analysis (Amrein-Beardsley et al., 2007). When allowed to use various digital platforms, it widens the learners' horizons with the usage of technology and results in satisfaction and learning (Bonk et al., 2006).

Challenges of Hybrid Learning in Higher Education

Challenges encountered jeopardize the smooth learning process in hybrid learning. With the usage of technology and new methods, the expectations of the teachers besides the students also rise considerably (Brunner, 2006). Hybrid learning combats the barrier of developing and administering (Vaughan, 2007), whereas the lack of delivering pedagogical skills by the faculty in teaching may be a confrontation to learning (Dukes et al., 2006). At times, the viability of the technology used for the medium of instruction and proper training is essential for effective teaching and learning (Butler & Sellbom, 2002)

5 Case Study Method Aligning with the SWOC Framework

Considering the purpose and the third research question to be investigated, the case study method is suggested, as the actual behaviors and their outcomes cannot be gauged. Nevertheless, the existing components pertaining to the SWOC Matrix cannot be static for hybrid learning applied in different situations. Therefore, a case study method would be appropriate for further investigation. Figure 8.2 showcased the elements incorporated as a baseline and used as a "lens" in the context of a hybrid learning platform in higher education. In an endeavor to propose and validate the viability of the aforementioned model (SWOC) in the chapter and by considering the case studies, an effort has been undertaken, where the hybrid method has been applied in the teaching-learning arenas in the postpandemic span. The secondary data is collected by referring to the prior documented literature published in peer-reviewed journals, reports, academic publications, books, etc., and the supporting online content is gathered through various websites.

5.1 SWOC Model as a Mapping tool

SWOC Matrix, a powerful tool, has been used as a base to gauge the implementation and its outcomes when applying hybrid learning as a learning platform in higher education to evaluate and improvise its execution. Table 8.1 highlights the description of the comparative analysis in the context of higher education globally, in alignment with that of the elements of SWOC, which elucidates the proposed research question.

The aforementioned tabulated details showcased a research void when the documented literature was explored pertaining to SWOC analysis when disseminating higher learning using a hybrid platform during the postpandemic internationally. Although due to the dearth of research, the studies reflect a common objective and vision to be achieved when offering hybrid learning by overcoming its weaknesses and converting its challenges into opportunities on the global front.

6 Future Vision for Hybrid Learning in Higher Education

This segment will deliberate about aligning all the research questions and their outcomes, as stated in the fourth question, with the dimensions of the conceptual model by integrating its interrelationship with the components of the SWOC model to converge and design feasible and effective teaching pedagogical strategies for the stakeholders in the postpandemic scenario.

Strategies Crafted for Students

- Create a conducive environment for learning
- Develop learning skills for valuable outcomes
- Motivate to participate in the learning process
- Align the learning process with the expectations

Strategies Crafted for Faculty

- Upgrade technological skills
- Align teaching content with pragmatic learning
- Skillful at different methods of dissemination of information
- Engage students to participate and build rapport
- Student-centered approach
- Understand the ability of different learners

Strategies Crafted for Educational Institutions

- Prepare for technology (Software and hardware components)
- Develop a bridge between students and faculty
- Redesign teaching pedagogy and integrate it with the market trends
- Focus on universal design of learning
- Reflect mental and psychological health of the students and the faculty
- Prior orientation for students and faculty before execution

Table 8.1 The elements of the SWOC model incorporated by the higher educational institutions

No	Author details	Country	Discipline	Strengths	Weakness	Opportunities	Challenges
1.	Lucero and Adajar (2020)	Philippine	Civil Engineering	Teaching modules through conference meetings.	Lack of interaction among the students and lack of teamwork.	Meetings recorded for the students' reference.	Internet connectivity is a major concern.
2.	Noreen et al. (2020)	Pakistan	Medical University students	User-friendly method, student-centered approach, flexible timings and encouraging self-directed learning.	Unavailability of Internet facilities and inaccessibility of technology, the problem of affordability for the rural students, less interaction with faculty, limited student involvement and setting of infrastructural development.	Exposure to digital technology and communication tools, an opportunity of blended learning programs, enhanced computer-assisted learning.	Reliability of the online evaluation is a major challenge concerning assessments, declaration of results, adhering to the deadlines, uploading of the assignments and their scores.
3.	Rajesh and Sethuraman (2020)	Malaysia	Medical education (MBBS)	Usage of tools and different platforms, digital technology motivated students in the learning process.	Interrupted Internet and its speed was a concern, not able to adapt to the teaching method and lack of training skill-set.	Scheduling of webinars, conferences, etc. was possible for health-care professionals to teach and assess clinical competence by using multiple-choice questions or case presentation.	Problems pertaining to accessibility and bandwidth, distractions during the sessions.

4.	Altwaijry et al. (2021)	Saudi Arabia	Pharmacy (Pharm.D)	Availability of various platforms for learning saves time, can reach a large audience, facilitates improvement of the skill-set, visual aids are used to facilitate learning, continuous and creative learning.	Creates hindrance while addressing a large number of learners, compromises with quality education, problems related to Internet, evaluation through online may raise validity issues and the increased screen time can have a negative impact on eyesight.	Creates new avenues in learning, recording of sessions possible for future reference, opportunities for online meetings and discussions can be conducted.	Access to uninterrupted Internet facility is a roadblock and a platform to explore the learning skills.
5.	Frad and Jedidi (2021)	Saudi Arabia	University learning	Study time is flexible, ensures learners' expectations and prompt feedback, and offers different courses and content.	Physical distractions, at times, are confusing for the students, and they have difficulty managing time and face technical problems.	Strengthens skill and adaptability, leads to digital innovation.	The cost of technology is high, may have an impact on quality education, and the nonavailability of Internet facilities may be a challenge.
6.	Maheshwari et al. (2021)	India	Postgraduation	Delivery of quality content, flexible timings, affordable, variety of study material, affordable, lectures can be recorded for future reference.	Lack of infrastructural and technological facilities, absence of training for teachers, absence of interaction with teachers and feedback.	Motivates students in active participation in activities, facilitates to explore the concepts and enhances concentration.	High speed Internet required, absence of Internet facility in rural areas, digital education may not be feasible for vocational courses where face-to-face interaction is required, and language can pose to be a barrier to learning.

(continued)

Table 8.1 (continued)

No	Author details	Country	Discipline	Strengths	Weakness	Opportunities	Challenges
7.	Malhotra and Bhatia (2021)	India	Master of Education Programme (M.Ed)	Easy accessibility, flexible timings, usage of various digital tools, easy to communicate in large groups and creates an environment to engage students.	Internet connectivity issues, user interface, may not be friendly for some applications, lack of technical skills, privacy issues may be a constraint, and maintaining discipline during the sessions and absence of prompt feedback and evaluation.	New techniques to adopt the technology for teaching and learning offers opportunities for self-learning and exploring and developing new methods of teaching and learning.	Absence of proper equipment and infrastructure, retention of the learners, may be a cause of concern, high dropout number of students, digital skills to be upgraded and validation of the online degree.

7 Aligning the Research Questions with the Outcomes

To wrap up the chapter, it becomes indispensable to realize that the aforementioned objectives are in alignment and interrelated. The outcome of the first research question has been affirmed by substantiating through the prior literature that the constructs of accessibility, affordability, digital literacy, availability of hardware and software platforms, and effectiveness significantly influence and are in conjunction with self-efficacy, learning outcomes, and satisfaction for different stakeholders, thus offering insights for higher learning.

The results of the second research question validate the extant literature and highlight how SWOC Model encompasses – Strengths, Weaknesses, Opportunities, and Challenges and focuses on creating value from the teaching-learning perspective. The above elements are in association with the dimensions discussed in the first research question, hence validating that the SWOC framework is efficient and apt to be implemented in higher learning, converting the challenges and weaknesses into opportunities.

The third research question has deliberated to conform in orientation with the components of the SWOC Canvas. The details of the cross-case analysis, with reference to the published data elaborated in Table 8.1, confirm that the courses offered in higher education are in consonance with the SWOC framework; hence validating that globally, the problems encountered are more or less similar, which need to be addressed at the institutional front.

The fourth research question further highlights the strategies crafted for the stakeholders to make higher learning effective and viable through hybrid mode.

8 Implications and Suggestions

Globally, Universities have not only adopted hybrid platforms when disseminating learning in higher education but have been successful also (Brown, 2001; Garnham & Kaleta, 2002; Pittaway & Moss, 2014). Value creation is the focal objective of this chapter by creating a win-win situation for the stakeholders in higher education by incorporating hybrid learning and teaching unfurled from various perspectives. Doubtless, to say, the pandemic has acted as a catalyst in creating avenues by offering innovative platforms for the educational sector. Higher learning institutions have amalgamated synchronous and asynchronous teaching methods by incorporating next-generation technologies by integrating the usage of various technological platforms to create synergy in the teaching-learning process. Offering learning through a virtual platform becomes more challenging than face-to-face traditional classroom teaching. Therefore, to address this issue, developing the course content and designing its layout need to be aligned prior to initiating the policy, planning the needful resources, organizing, integrating technology with the course content, and using various pedagogical instruments. Besides, effective implementation of the

course design, which caters to the preference and comfort level, to encourage student-teacher participation, involvement, and commitment to reach the course objectives is highly desirable. Further, challenges encountered in hybrid learning spaces relating to training the faculty; re-designing the course content; adaptability and digital know-how of the students learning on the virtual platform; technological glitches; privacy concerns; lack of engagement and retention; affordability of the technology; and inhibition of meeting the expectations of the job market, to name a few, have found to be common, when exploring the extant studies at the global front.

Consequently, these issues are pertinent and need to be investigated and addressed with dexterity for the teaching professionals and higher educational institutions to evolve with the changing and unpredictable scenario. Further, virtual reality-based lessons have proved to be impressive when comprehending the course content, pertaining to the study of natural landscapes; lifestyles and culture; studying humanities subjects; natural sciences etc. by relating the abstract concept with that of virtual field trips, giving a visual feel of the natural setting. Maneuvering technology in offering digital learning resources; e-notes; integrating audio, quizzes, videos and text to facilitate the students; establishing rapport with learners through interactive sessions, discussion through case studies, brainstorming, and experiential learning and activities will not only create motivation but also build trust and a healthy relationship with the teacher and the taught. Besides, designing the course content according to the industry and the market trends will restore trust and efficacy toward hybrid teaching and learning. Further, the infrastructural (hardware and software) support offered by the higher institutions, providing training and orientation to the teaching professionals and the students by enhancing their digital skills, will undoubtedly result in embracing the technology without inhibitions, encouraging digital literacy and adaptability, and reducing fear of security and availability of the Internet and will fulfill the learning outcomes and expectations of the students.

Policymakers worldwide advocate the necessity to structure new frameworks to upgrade the architecture of higher education in the postpandemic, reflecting on the course curriculum, its design, and pedagogical methods. Likewise, India's National Education Policy (2020) focuses on imparting professional education through designing a digital platform by concentrating on teacher training, ensuring digital infrastructure, developing students' holistic development, enhancing skill-sets and values, and its implementation to deliver quality e-learning in the higher education ecosystem. In addition, the Universities disseminating higher education in the USA, such as Harvard, Yale, and Stanford, also had to switch to e-learning platforms, which was announced by the authorities (President /Chancellor of the University), to meet the expectations of the teaching professionals and students fraternity, whereas, in the Canadian province of Ontario, the government announced to make e-learning obligatory, intending to decrease the educational budget and counter the prevailing situation and find a concrete solution to teaching and learning (Murphy, 2020). Further, the Digital Education Action Plan initiated in 2021 by the European Union (EU) policy used technology to facilitate the adaptation and enhance digital literacy and skills to impart quality-based higher education (European Education Area, 2021). In addition, Finnish National Agency for Education (2020) also

supported offering online learning and teaching, to name a few. Therefore, hybrid teaching and learning have led to increased digital literacy, wider exposure through digital platforms, customized and interactive learning, and project-based learning and will also create opportunities for self-learning.

Consequently, it becomes requisite to empower the trained educators to collaborate with their students to adapt, evolve, and learn in hybrid spaces with their warmth, personal touch, and sense of commitment. The hybrid approach, when gradually incorporated into various higher courses, can be effective when offering professional training and equipment besides motivation and institutional support. Hybrid learning has proved to have a cushioning effect during uncertain pandemic times and confers a special responsibility to prepare the roadmap for the higher learning spaces, which can prove fruitful in the future if exercised judiciously globally.

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Chapter 9

Preparing STEM and Education Undergraduates for Career Readiness Using Virtual Inquiry-Based Teaching and Learning



Luria Young and William Katzman

Abstract The Laser Interferometer Gravitational-Wave Observatory (LIGO) Science Education Center (SEC) and its partners, Southern University and A&M College (SUBR) and the San Francisco Exploratorium, have created an excellent statewide educational and informational resource to promote scientific learning and understanding in Louisiana and beyond. A vital component of the partnership is its Docent Training Program. The partnership trains undergraduate science, technology, engineering, education, and mathematics students enrolled at SUBR as Docents, leaders who facilitate the LIGO SEC experience for K-12+ learners. In this COVID-19 era, the training focuses on innovative strategies to continue training students to be career-ready amid a pandemic.

Keywords Docents · STEM, STEEM (Science, Technology, Engineering, Education, Mathematics) · Career readiness · Higher education · Informal science education · Virtual training

1 Introduction

Albert Einstein predicted the existence of gravitational waves over 100 years ago. Increased knowledge and technological advancements have changed what we know about the universe and our existence. These advancements have also changed what we know about gravitational waves and their existence. The 1960s marked the

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_9

initiation of ground-breaking gravitational wave research by groups of scientists across the world. In 1980, the National Science Foundation found merit in searching for gravitational waves and provided funding to support the construction of facilities for detecting gravitational waves (Caltech et al., 2022).

Similarly, in the early 2000s, scientists from LIGO sought innovative ways to relay the ground-breaking gravitational wave research to the general public in easy-to-understand language. Hence, the Laser Interferometer Gravitational-Wave Observatory (LIGO) Science Education Center (SEC) partnership was birthed around 2004. While the partners have transitioned over the years, the core of it has remained the same. The key partners are the LIGO SEC, Southern University and A&M College, and the San Francisco Exploratorium. This partnership's major overall goal was to create an exemplary statewide educational and informational resource to promote scientific learning and understanding in Louisiana and beyond. Consistent with the mission, the LIGO SEC partners have implemented initiatives and programs to achieve the following goals: (a) communicate LIGO-related science concepts to the public; (b) strengthen candidate and clinical educator science teaching; (c) reach a broad audience of students in Louisiana and the surrounding region; and (d) create a national model for ways in which scientists and educators in universities, systemic programs, school districts, and informal learning environments can work together to support inquiry-based teaching and learning.

1.1 LIGO and its Science Education Center (SEC) at Livingston, LA

LIGO, a world-class scientific research facility, attracts interest from schools and community groups in the region. The LIGO SEC has hands-on exhibits linked to the basic science principles underlying LIGO research. Most of the exhibits were developed by the San Francisco Exploratorium. LIGO science's fascinating and unique story captures visitors' attention and helps answer the important questions driving LIGO. The story connects that work to local communities. The SEC facility is located adjacent to the LIGO auditorium, a 150-seat area with state-of-the-art audio/visual support and communication capabilities, providing an environment conducive to science teaching and learning excellence.

1.2 Southern University and A&M College (Baton Rouge, LA)

Southern University and A&M College are publicly supported, coeducational, land-grant, historically Black, comprehensive institutions that began in New Orleans, Louisiana, in 1880. Southern University has since established five additional campuses, including Baton Rouge's main campus. The Southern University System is

the only HBCU system in the nation. Southern University offers 4-year graduate, professional, and doctoral degree programs. On average, 6000 students are enrolled each year at the Baton Rouge, Louisiana campus. SUBR has strong STEM programs, a vibrant doctoral program in Science and Mathematics Education (College of Sciences and Engineering), and the School of Education, which began in the 1920s, is a major supplier of new teachers in Louisiana.

1.3 The San Francisco Exploratorium

The Exploratorium is San Francisco's Museum of Science, Art, and Human Perception. The Exploratorium provided LIGO SEC and SUBR with exhibits and continues to train SEC and SUBR staff on the use of the exhibits. The exhibits, which are approachable, engaging, and link directly to LIGO science themes, are intended to primarily target an eighth-grade level of understanding, with accompanying explanations for a broad spectrum of learners. The exhibits present visitors with interactive ways to connect everyday observable phenomena, basic scientific principles, and cutting-edge scientific research and applications.

The combined efforts of a cutting-edge research laboratory and its outreach facility (LIGO and its SEC), a historically black college and university (HBCU) under the auspices of the only HBCU system in the nation (SUBR), and a leading museum that specializes in informal science education (San Francisco Exploratorium) have resulted in an influential center for teacher training, student science education, and community engagement, with a broad and growing effect on teaching and learning in Louisiana and beyond. Consistent with the initial mission of the LIGO SEC partnership, it further develops a pipeline for underrepresented audiences to engage in STEEM (science, technology, engineering, education, and mathematics) programs and activities.

One of the keys and innovative programs of the LIGO SEC partnership at SUBR and the focus of this chapter is the Docent Training Program. Docent training is an in-depth training program for SUBR STEEM undergraduate students on LIGO-related science concepts (such as light, waves, interference, and resonance) and their specific application to the exhibits and "snacks" developed and built by the San Francisco Exploratorium. Once trained, the students with LIGO Docent certification guide K-16+ learners on the LIGO SEC experience through school field trips to the SEC and other activities. To date, over 150 docents have been trained. Inverness Research, the external evaluator, refers to the Docent Training Program as a strong program and a great asset to the SEC and its partnership.

The training of docents has been a unique aspect of the LIGO SEC partnership. The in-depth training has overwhelmingly prepared STEEM undergraduate students at SUBR for career readiness. Training prior to the COVID-19 pandemic was conducted in person at the LIGO SEC in Livingston, Louisiana, about 44 miles from SUBR. When the pandemic hit in Spring 2020 and the Stay-at-Home Order by

Governor John Bel Edwards, the partnership leaders had to think of creative ways to train the SUBR LIGO Docents, continue connecting them to the PK-12 community, and ensure that they were still being prepared for careers.

2 Career Readiness

Preparing underrepresented students for careers while college enrollment is vital for diversifying the STEEM workforce. The LIGO SEC partnership made significant gains toward this goal over the last 20+ years. While the literature discusses many programs that focus on docents, very few articles exist that focus on preparing underrepresented students for careers through a diverse, strong partner such as the LIGO SEC partnership. The combined efforts of LIGO SEC, a cutting-edge research laboratory and its outreach facility; SUBR, an HBCU under the auspices of the only HBCU system in the nation; and the San Francisco Exploratorium, a leading museum that specializes in informal science education, have resulted in preparing STEEM undergraduate students to be career ready. This section discusses the career readiness component of the SUBR LIGO Docent Program.

Career readiness is defined as “a foundation from which to demonstrate requisite core competencies that broadly prepare the college-educated for success in the workplace and lifelong career management.” (The National Association of Colleges and Employers, 2022a, b, “What is Career Readiness?” section). It is extremely important to teach and continuously strengthen the career readiness skills of underrepresented students in college to ensure that these students succeed in their careers. The National Association of Colleges and Employers (2022a, b) identified eight competencies for a career-ready workforce:

1. **Career & Self-Development** – proactively develop oneself and one’s career through continual personal and professional learning, awareness of one’s strengths and weaknesses, navigation of career opportunities, and networking to build relationships within and without one’s organization.
2. **Communication** – clearly and effectively exchanging information, ideas, facts, and perspectives with persons inside and outside an organization.
3. **Critical Thinking** – identify and respond to needs based on understanding situational context and logical analysis of relevant information.
4. **Equity and Inclusion** – demonstrate the awareness, attitude, knowledge, and skills required to equitably engage and include people from different local and global cultures. Engage in anti-racist practices that actively challenge the systems, structures, and policies of racism.
5. **Leadership** – recognize and capitalize on personal and team strengths to achieve organizational goals.
6. **Professionalism** – knowing work environments differ greatly, understanding and demonstrating effective work habits, and acting in the interest of the larger community and workplace.

7. Teamwork – build and maintain collaborative relationships to work effectively toward common goals while appreciating diverse viewpoints and shared responsibilities.
8. Technology – understand and leverage technologies ethically to enhance efficiencies, complete tasks, and accomplish goals.”

The SUBR LIGO Docent Training Program provides opportunities for undergraduate STEEM students to master these core competencies by immersing them in diverse experiences. Mastering the eight competencies for career readiness helps undergraduate STEEM students to build a solid foundation for later career successes. These skills were practiced repeatedly prior to the COVID-19 pandemic and are being strengthened repeatedly during the pandemic. A description of the Docent Training Program during the prepandemic and in the pandemic for career readiness follows.

3 Docent Training/Career Readiness Training

3.1 Docent Training Prepandemic

Docents receive training at LIGO related to the LIGO experiment, physical science concepts, inquiry methods, and public engagement. As the program matured, the staff decided to change the focus of the training from learning about LIGO to learning how to encourage visitors on explorations. The length of the training changed as well. Instead of being at LIGO for an hour-and-a-half training monthly across an academic year, training became concentrated across 3 days, with additional single days of “ongoing” training each semester.

The training is geared toward creating an environment where docents become comfortable asking questions and actively encouraging visitors to explore physical science concepts through the exhibits. The training was designed by LIGO & SUBR staff in conjunction with the staff from the Exploratorium and had similarities to the training that the Exploratorium provides to its explainers (their floor staff).

Activities in the training concentrate on enhancing the visitor experience – primarily in the exhibit hall and with hands-on activities at tables in the lobby. Docent training involves the docents learning to turn questions from factual-based to investigable questions. This means that when docents engage the visitors at LIGO, instead of explaining LIGO-related science to visitors, they encourage visitors to explore LIGO-related science with them. When visitors ask, “Why does that happen?” docents are empowered to help the visitor rephrase those questions into investigable questions such as “Would that happen if...?” questions. Some questions are not so answerable via this method, such as questions about the past detections of the LIGO experiment itself. Docents are free to answer those questions or, if unsure, pass those questions to LIGO staff who are more immersed in what LIGO has accomplished.

As docents move from novice to veteran, they gain more responsibilities and become more experts in engaging with particular exhibits within LIGO SEC. The docents then use their expertise in engaging with an exhibit to train the newer novice docents. Veteran docents build up their confidence through participation in the training of newer docents. Veteran docents also start leading offsite family math and science activities within a school instead of such activities being staff-led.

3.2 Docent Training in the Pandemic

At the height of the massive outbreak of the Coronavirus (COVID-19) in the State of Louisiana, Governor John Bel Edwards issued a mandatory stay-at-home order on March 22, 2020, during the middle of the spring semester at SUBR. The pandemic brought about a great deal of change on every level. Likewise, the role of docents had to change as well. During the prepandemic, the docents interacted with K-12 students and public audiences informally with small groups of people. Docents would encourage visitors' interactions at hands-on exhibits, and they would manage tables with activities that served as focal points to engage visitors. All of these interactions were relatively informal interactions involving a small number of people. The docents functioned as small-scale facilitators of hands-on experiences for field trips and tours. With the pandemic in full force, LIGO no longer offered on-site field trips and tours. How could the docent program adapt?

LIGO staff looked to other organizations for guidance. Although a few museums had something like the docent program, almost all museums have floor staff guides to help the museum-goers navigate through and benefit from the exhibits. Many floor staff were laid off across the museum industry, as museums were closed to the public and the ability to interact with museum-goers disappeared, and the museums looked to cut costs to survive.

Some museums had similar programs targeted at underrepresented high-school or college-age students. Often the museum looked at these programs as a way of developing these younger students within the museum culture. As museums reacted to the pandemic, these programs were invariably scaled back, eliminated, or changed drastically. A museum might continue to reach out to these underrepresented high-school or college students through a series of self-reflective programs, but the interaction with the museum audience disappeared. SUBR and LIGO were determined not to let that happen. LIGO had to determine what its interactions with audiences would consist of.

3.3 *Docents and Virtual Field Trips*

During Fall 2020, LIGO set out to revamp its field trip offerings before training docents. This effort began as schools were grappling with virtualizing and hybridizing their programs. Staff began by brainstorming what elements of the field trip program could be virtualized. Indeed, the tour and some field trip classroom activities could be virtualized for K-12 audiences. However, this was not where the docents were particularly effective. The docents were at their best when interacting around exhibits and small tabletop activities. Staff produced two ideas that could engage the docents with the K-12 audience:

1. Docents could talk about their STEM experiences in school and summer jobs to inspire the K-12 students. “What if,” thought the staff, “the docents talked about their journeys with small groups of students as part of STEM Talks for classrooms?”
2. Docents could lead students in miniactivities similar to what they did with the table-top activities. “What if,” thought the staff, “the docents did activities similar to the table-top activities – encouraging students to do miniexperiments?”

LIGO staff produced four general elements that could be offered virtually to K-12 students.

1. Virtual tours (real-time tours conducted remotely with staff members showing the students around the site, almost as if the students were there)
2. STEM talks (informal virtual conversations with undergraduate docents and staff on what they do and how they became interested in their STEM fields)
3. A series of miniexperiments that could be conducted with everyday materials by students at their desks (conducted virtually)
4. Full classroom experiences centered around a single topic but conducted virtually by LIGO staff

LIGO surveyed teachers, asking them which of those four elements they would most likely utilize. Despite being overwhelmed by their changing work, sixty-five teachers responded to the survey. The results suggested that teachers wanted virtual tours, full classroom experiences, and a series of miniexperiments. The teachers were much less interested in the STEM talks. Therefore, staff redesigned their field trip offerings to emphasize the tour, full classroom experiences centered on a single topic, and a series of miniexperiments for the students. This organization of activities allowed staff to concentrate on revamping the field trip experience virtually and incorporating docents as a central part of that experience.

3.4 *Virtual Docent Training*

During the fall of 2020, the LIGO-SEC team trained 15 veteran docents on new virtual programs. In order to make these programs effective, staff quickly realized that it would help to have at least two people conducting each program. One would lead the activity, while another would moderate the activity, keeping it going without audience feedback, answering questions in the chat, and helping the presenter out in any way possible. This meant that staff had the opportunity and challenge to train docents to moderate and lead the activities.

Docents were trained to lead the six new miniactivities, each concentrating on a single activity. They would later be cross-trained on other activities if they desired that training. As a part of this training, they were exposed to the activity and given extra information on the science underpinning it. In a nonvirtual environment the new training combined with the veteran docent's prior training on engaging audiences would have been enough. However, this was now a virtual environment, meaning there were other elements to consider!

In a nonvirtual environment, people pay attention to elements they consider important, while in a virtual environment, what the audience looks at depends on what the presenter points the camera at! Thus, docents were trained on proper lighting for presentations, camera positioning, using secondary external cameras, and minimizing background noise! This daunting amount of information made some docents nervous about presenting. Luckily, there was a second method for docents to engage with the public.

The other main role of docents was that of moderating presentations and tours. Docents were encouraged to interact freely through the chat and to appropriately interject and bring up questions from audience members to the presenters. Moderators were particularly important when K-12 visitors had access to computers, so they could all interact. That was an ideal situation. LIGO staff quickly realized that moderators were particularly important during virtual tours, as the tour guides could not reliably read the chat as they were giving the tour. Particularly with large groups, the questions could come in quickly, so the moderator would use the questions coming in the chat and combine similar ones to ask the tour guide verbally. Sometimes there were lulls in the tour when nobody was asking a question. Moderators were encouraged to ask their questions at those points so that the tour kept flowing and to encourage further questions from the K-12 audience.

Staff were remiss at losing the STEM talk option. Prior research suggested that informal talking with STEM professionals leads to greater interest in STEM (Mills & Katzman, 2015). Staff reasoned that docents could incorporate a mini-STEM talk before doing the activity. Therefore, a training regimen for STEM talks could start with a larger STEM talk where docents talk about who they are, their background, and how they got interested in STEM or education. Docents started talking about themselves spending more than 5 min, eventually, these "mini-STEM talks" whittled down to a 2-min introduction. The timing was important in order to fit three activities within a session.

During the mini-STEM talks, docents were to talk about their major and how they became interested in STEM. By having the docents do these mini-STEM talks, LIGO and SUBR staff hoped to reinforce their self-identity/STEM identity as budding STEM professionals and allow K-12 students to identify with the docents more. As docents relayed reasons, they became interested in STEM; staff reasoned that a subset of K-12 students might realize that they too had some of those interests. Since students could see up to four different docents in a session, they could hear up to four reasons why they became interested in STEM. Docents would talk about taking things apart, working with a parent, or their interest in nature and taking hikes. Each reason stated by a docent provided an opening for a different K-12 student to consider.

The docent training consisted of staff-led presentations and conversations on which elements helped interactive presentations succeed and which elements hurt interactive presentations. The input of the docents was critical to getting their buy-in and improving what LIGO would offer to K-12 audiences. Even simple items like lighting were discussed. Docents were encouraged to experiment with their camera position and lighting instruments. The docents quickly realized that lighting had to come from the front so that people could clearly see the docents and activities.

The docent training then led to more purchases. While staff had the foresight to realize the need for document cameras, the idea of purchasing ring lights to improve docent lighting came from the docents. Thus, each docent was provided with a ring light cell phone holder on a tripod, a document camera, and another cell phone holder that could be placed almost anywhere in case the docent wanted to bring in a video of an activity from a particular angle.

As part of the training, docents were trained to provide constructive feedback to each other. A simple feedback model was followed, with docents providing a compliment and then a concrete suggestion that might improve the other docent's presentation. Docents first received the chance to use their newfound presentation, and moderation skills with a regional virtual conference for the National Society of Black Engineers, which targeted Middle- and High-school students. Docents later used these skills with K-12 virtual field trips.

During the fall of 2020, LIGO and SUBR trained virtual docents. During the spring of 2021, the partners realized they would have to recruit new docents and train them completely virtually. Prior docent training used training around exhibits to encourage refining of questioning and exploration of skills. LIGO and SUBR staff decided to fuse elements of the virtual training along with a small subset of the training on questioning and engagement skills. The engagement still needed to happen, but virtual engagements differ from in-person ones. The partnership still trained docents on turning a question into an investigable question, but the training was shorter, as more of the training focused on the virtual aspects of engagement. The training was originally dominated by encouraging students on an individual exploration of exhibits, but the new virtual docent program was now dominated by encouraging interactions with the groups of students through chats or via leading virtual programs. This required different skills to lead the programs.

4 Comparing the Two Approaches

Looking ahead, LIGO and SUBR staff will bring back the in-person program but intends to leave in place the virtual outreach as well. In order to look at the advantages and disadvantages, staff have compiled a table that looks at the Prepandemic and Pandemic Docent Programs. Table 9.1 reveals that there were some advantages of the Pandemic Docent Program. In particular, the schedule was more flexible, allowing busy students the opportunity to join the program and fully participate. There were also more personal interactions with staff, and the docents appreciated the staff's efforts; as one docent stated when asked about the program, "Honestly, I would not change a thing. You can tell everyone loves what they do and has the patience to teach new docents."

Nevertheless, in surveys, multiple docents have commented that they wish they could get back to doing in-person outreach. One docent commented, "I know that it is probably unlikely, but getting to do something in whatever capacity possible in person would be extremely helpful." Although this was not a majority of comments, it was a relatively common sentiment. Another docent stated, "I would love to have in-person activities, if possible," indicating that the docent knew why the in-person activities were cancelled but still desired a way to resume these in-person activities.

This internal data was confirmed by external evaluation data, as conducted by Inverness Research. According to Inverness, staff did "an admirable job of shifting all of their work to the virtual space over the past year" (Inverness Research, Inc., 2022, p. 2). Docents reported that "they learned the importance of being specific in their language, and how to be direct in asking for input and feedback from the groups they were working with because of the lack of in-person visual cues they could rely on" (Inverness Research, Inc., 2022, p. 3).

Table 9.1 Docent program comparisons

Prepandemic docent program	Pandemic docent program
In-person	Virtual
Docent training concentrated across three long days	Docent training spread out across 2 months
Docents train all together as one cohort, only breaking into groups for particular activities	Docents split into two sessions each week to accommodate students' schedules Additional one-on-one training for presenters
Docents sign-up to work for 2–6 h time blocks	Docents work in hour-long time slots
Docents travel to the site(s)	Docents use the internet to virtually commute
Docents interact with students in small groups	Docents interact with students in large groups
Staff cleared their schedule and planned carefully for the 3-day training	The staff planned continuously adjust training across the 2 months
Docents have real-time interaction with students	Docents have real-time interaction with students

5 Conclusion

The pandemic presented new challenges but also new opportunities. The SUBR staff with diverse roles and responsibilities from a comprehensive 4-year university and LIGO SEC staff from an informal science space connected to a major research facility had the daunting challenge of taking an all-in-person interconnected set of programs and turning them into an interconnected set of virtual programs. In particular, interviews with docents indicated some positive perspectives from being virtual: “they had personal attention from LIGO staff—they had the opportunity to practice their presentations multiple times—there was more flexibility in the scheduling of the training” (Inverness Research, Inc., 2022, p. 3). LIGO staff also noted that a few docents thrived in the new virtual format, since they could do more direct presentations yet fit this within their otherwise hectic schedules. Additionally, the two different deliveries of docent interactions with the K-12 community provided excellent opportunities for strengthening their career readiness skills across the eight competencies.

6 Lessons Learned

The virtual world demands more flexibility. Sometimes internet services are inconsistent, teacher-led sessions fail to materialize due to technical issues, and distractions sometimes appear on a docent’s screen as they deal with roommates or navigate free internet spots. Navigating these flexible spaces required more patience and flexibility than the in-person docent program required. Staff are still figuring out the exact balance on how to deal with missed sessions in a supportive manner that still requires the docent to exercise forethought and bear personal responsibility, two critical qualities for career readiness.

According to Inverness Research, “The virtual platforms were the biggest limiting factor” (Inverness Research, Inc., 2022, p. 4). Staff and docents adapted to three platforms (Zoom, Google Meet, and Microsoft Teams), sometimes using a single screen or sometimes with each student having their own screens. LIGO and SUBR realized that the ideal situation utilized a LIGO staff hosted Zoom room, where each student was individually connected (but kept on mute). If the K-12 students did not have individual connections for the virtual field trip, then the role of docent moderator became almost superfluous. The individual student connections and subsequent chat interaction gave the docent moderator more to do and afforded increased interaction between K-12 students and moderating and presenting docents. LIGO staff are now actively pushing for this situation with every school that books a session with superior results.

7 Next Steps

SUBR and LIGO have decided to move forward with both in-person and virtual docent programs to capitalize on each format's positive elements. Docents will be trained in one format (virtual or in person), and those who desire more will be cross-trained in a second format, all to ensure that these students are career ready.

Acknowledgments The LIGO SEC Partnership is funded by the National Science Foundation awarding PHY- 2012087 to the Baton Rouge Area Foundation and PHY-2011985 to Southern University Baton Rouge. LIGO is operated for the National Science Foundation by the California Institute of Technology and the Massachusetts Institute of Technology through the cooperative agreement PHY-1764464.

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William Katzman is an award-winning informal science educator who has led the NSF-funded LIGO Science Education Center team for the last 13 years. Before that, he directed the exhibits program at Catawba Science Center in North Carolina and taught middle and high school science in Massachusetts. As a prior teacher, he cares about what students learn as well as how students learn. He has authored and co-authored nationally published articles and federally funded grants. William received the 2014 Louisiana Science Teachers Association Distinguished Informal Science Education Award and the 2016 Special Breakthrough Prize in Fundamental Physics as part of the LIGO Scientific Collaboration.

Chapter 10

Perceived Readiness and Factors Influencing the Adoption of Online Learning Management Systems: The Case of Rajshahi University, Bangladesh



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Abstract The academic institutions in Bangladesh have been forced to close for an extended period during this pandemic. Although academic institutions worldwide use online learning management systems (OLMS), the readiness of public institutions in Bangladesh for online education has been a concern. The present study aims to establish a relationship between OLMS and readiness indicators to determine whether the University of Rajshahi is ready-to-use OLMS. The conceptual model assesses the university's readiness from the viewpoints of computer and Internet self-efficacy, self-directed learning, learner control, online learning motivation, and online communication self-efficacy. Survey data were collected online using Google. A convenience sampling of 250 students was considered. The Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to assess the relationship between OLMS and readiness parameters. Results showed that most students had a favorable attitude toward online learning and a significant association between readiness variables and the OLMS. Nevertheless, the cultural readiness, cognitive readiness, strategic readiness, and innovative valence characteristics are all below

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average at the University of Rajshahi. Therefore, this study provides policy suggestions for future improvements as quickly as feasible to generalize OLMS in a pandemic or postpandemic situation.

Keywords COVID-19 · OLMS · Perceived readiness · Bangladesh

1 Introduction

COVID-2019 emerged in the first quarter of 2020 and quickly expanded worldwide. As a result, students were required to transition from traditional classroom instruction to online instruction in a short period, which was no easy task. Many universities have sought to maintain the continuity of the learning process despite this challenging scenario. Thus, students and teachers engage in an online learning environment using different technology tools and approaches (Nitu et al., 2020). This form of learning is also known as e-learning. The United Nations Children's Fund (UNICEF) monitors the situation in 129 countries globally, revealing that 63.3% of the world's total registered these closures impact students. For example, the closure of educational institutions in Bangladesh has affected 36.79 million students from preprimary through upper secondary levels and 3.15 million students in university education (Ramij & Sultana, 2020).

Although several schools experimented with e-learning before the epidemic, its full potential is just now being recognized. It offers students several possibilities and benefits, including convenience (Poole, 2000), flexibility (Chizmar & Walbert, 1999), time savings, teamwork, and the opportunity to engage with people beyond physical boundaries (Hung et al., 2010). It also gives students greater control over their learning activities and allows them to choose their regular classwork regarding space, pace, depth, breadth, and time management (Stansfield et al., 2004). Like many other nations, Bangladesh's Education Ministry (MOE) and University Grants Commission (UGC) have legislated that all public and private sector educational institutes undertake all teaching and learning activities online until COVID-19's spread curve has smoothed down. Institutions have adopted a virtual method of academic teaching and learning in Bangladesh, and online learning has become the norm. Video conferencing technologies such as Zoom, Google Meet, Microsoft Teams, and WebEx have arranged virtual courses. Online learning was, without a doubt, the most effective way to deal with this unusual scenario. However, as Chung et al. (2020) pointed out, technology cannot replace direct human interaction or the degree of social engagement one gets in a classroom setting. Student dissatisfaction and diminished involvement because of these issues might lead to a poor learning experience.

It is no secret that technology has played an essential role in the evolution of e-learning. Desktop computer, laptop, smartphone, or smart device, an Internet connection, and online learning platforms (software/mobile applications) are all necessary components of e-learning programs. Some of these resources must be available

to students to participate in online learning. In addition, students may connect and their professors using various communication technologies, allowing them to exchange information and expertise quickly. As well as being widely available and very user-friendly, these technologies are both asynchronous (threaded discussion, emailing) and synchronous (live chat, audio/video calls, instant messaging) (Rafique et al., 2021). It means that online learning allows communicating with others securely and efficiently. A sufficient amount of technical expertise and aptitude for virtual learning is required. As with any type of learning, users must be prepared to get the most out of it.

As a result, online learning offers a computer-mediated environment where one may safely and efficiently share one's opinion with others. It does, however, need that users have some technical training and virtual learning ability (Rafique et al., 2021). These circumstances have led to a debate on whether Bangladeshi students are ready or equipped to readily accept electronic learning and successfully meet the obstacles that come with it. If users want to get the most out of this virtual learning environment, they must be ready. It has been questioned if students at Rajshahi University are ready and able to accept e-learning fast and deal with its obstacles. The online learning readiness (OLR) of Rajshahi University students is investigated in this study. Hence, the following research questions are formulated: RQ 1 – What has Rajshahi University students' perceived readiness toward Online Learning Management Systems (OLMS) during the COVID-19 pandemic?

2 Online Education in Bangladesh

The academic institutions in Bangladesh are experiencing long-term closure because of the fear of the COVID-19 pandemic. The secondary and higher secondary institutions remain entirely in a shutdown position. Public universities have suspended their activities altogether, while private universities can continue their running semester in Spring 2020. However, many students and their parents are against resuming classes through online platforms. Their main argument was a lack of continuous stable Internet connections, lack of proper devices, cost of data, family financial condition, and mental stress. However, a small portion of students and teachers of several universities argued against adopting E-learning approaches. The COVID-19 Pandemic has forced the closure of academic institutions in Bangladesh for the foreseeable future. Schools in secondary and higher secondary levels have been shut down. Public and private universities will have their last semester of the academic year in the spring of 2020. Many students and their parents reject restarting classes online. A lack of regular, stable Internet connections, appropriate equipment and gadgets, and high data charges were among their families' top worries and the financial conditions. Students and youth from many institutions have been affected.

In an online seminar, arranged by the Center on Budget and Policy, prominent educators gave their opinions regarding online classes. The speakers opined that

setting online classes for 7.5 lakh students could cost around Tk. 10,000 crores. The government can arrange this allocation, and he demanded a reduction in Internet usage charges. They also pledged that education loans could be introduced to students. Public universities will have to sign a memorandum of understanding with the central bank; banks' corporate social responsibility programs will help the education sector. Other seminar speakers opined that students should be provided with accessible Internet facilities, mobile handsets, and laptops. They called to increase this sector's budget allocation (Ramij & Sultana, 2020). BioTED conducts a new training and research project for 42 private and public institutions. According to the study, only 23% of students preferred online education in this circumstance. The remaining 77%, on the other hand, were opposed to the proposal. Only 55.3% of students have laptops, PCs, or tablets to take online courses. It demonstrates that 44.7% of students cannot attend online classes because of logistical issues. The most crucial aspect of online classes is Internet connectivity, and according to the poll, 55% of students do not have enough Internet access. Since March, private universities have requested authorization to enroll students in various forms. The administration also issued directions that all lessons and examinations be taken online. However, the practical test of areas of science cannot be taken in any way online in this circumstance.

Furthermore, when taking online tests, utmost transparency must be used. Next semester, the university will manage the remaining activities, finishing at least 60% of the coursework prior to the pandemic (Ali, 2020). In Bangladesh, a decent Internet connection with a consistent speed is the fundamental reason against online education. Even if they can attend lessons, the experience is wasteful due to their inability to comprehend lectures. After all, the network is frequently down, and they cannot connect effectively with the teachers. The situation became even worse for students who visited or lived in the village during the epidemic. Online classes also discourage class participation because most students do not own laptops or computers. Therefore, it is impossible to do assignments and tasks on a smartphone. In this situation, students cannot use cybercafes or fix their computers if there is a malfunction. Students also mentioned that online classes are not the same as in-person classes since they are less attractive. The problem becomes much more severe when conducting online examinations, quizzes, presentations, or any other graded activity using online platforms. Engineering students are similarly wary about being taught online. Because not all course teachers utilize whiteboards, they had trouble comprehending equations and practicing arithmetic online. Many students are particularly concerned about the mental strain that lessons and examinations will have on them during a global epidemic. However, a group of students are concerned about the length of the semester and support the use of online classes but oppose taking tests online. According to faculty members, online connectivity does not need much planning. Some institutions have aided students by purchasing mobile Internet subscriptions that eliminate the need to travel outdoors. Given how the scenario develops, online classes may become a regular occurrence. It is critical to get it correctly the first time to fall behind.

3 Theoretical Perspectives and Hypotheses Development

Online learning is rising because of its numerous advantages, including ease of access, convenience, and flexibility. However, learning is directly affected by a learner's psychological and educational readiness and the essential psycho-educational framework for e-learning in the learning, instructional design, and even the learning environment's design. Online Learners' Readiness (OLR) is a complex structure that incorporates students' proficiency in using learning technologies, autonomous learning skills, and some emotional structures, according to Kormos and Csizer (2014). The most significant are self-directed learning, learner control, motivation, and other subconstructs of OLR. Learners' online learning practices may vary depending on their mastery of these abilities (the hypothesis of this research). Changes can be made if these learning tendencies can be predicted ahead of time. Later, M. McVay (2000a, b) created a 13-item scale to assess students' readiness for online learning. The McVay questionnaire used the students' attitudes and conduct as predictors. Smith et al. (2003) used M. McVay's (2000b) Readiness for Online Learning questionnaire to perform a study and found that the students' self-management of learning and degree of familiarity with e-learning were the two most essential criteria predicting their success. However, these two characteristics could not account for all aspects of students' preparation for online learning.

Researchers worked to build new dimensions that would comprehensively encompass all crucial characteristics of online learning to gain a more comprehensive understanding of the core of online learning readiness (Rafique et al., 2021). Previous research has revealed that the technical abilities required to accomplish computer-based tasks are also important determinants of students' success in web-based learning (Peng et al., 2006). Similarly, students' attitudes and behavior toward online learning were linked to their perceptions of the Internet (Tsai & Lin, 2004). Another vital aspect impacting the pupils' OLR was time management. M.L. Hung et al. (2010) created a vast scale to assess students' readiness for online learning in 2010. The scale measured computer/Internet self-efficacy, self-directed learning, learner control, desire for learning, and online communication self-efficacy, among other things. The following dimensions have been incorporated into the conceptual model of OLMS adoption readiness:

3.1 Computer and Internet Self-efficacy (CIS)

Because online courses are provided through networks, it is especially crucial to have evaluations that address students' views of utilizing a specific technology and people's capacity to utilize the technology, that is, assessments combining computer/network self-efficacy. Online learning may also benefit from computer-mediated communication. Self-efficacy is described by Bandura (1986) as "people's evaluations of their ability to organize and execute courses of action necessary to

achieve specific forms of performances.” Computer self-efficacy is described in the technology sector as “an individual’s judgments about his or her competence to use computers in the execution of a task” (Compeau & Higgins, 1995). Self-efficacy in computer use is usually low among those uncomfortable with computers (Cassidy & Eachus, 2002). Extant research has demonstrated that people with high computer self-efficacy are more likely to accept and utilize information (Hill et al., 1987; Venkatesh & Davis, 1996). They found that computer self-efficacy affects people’s expectations of what they may anticipate from using computers and, ultimately, how they decide whether or not to use computers. Because online courses are provided over networks, it is indispensable to have relevant evaluations about participants’ views of utilizing a specific technology and users’ abilities to use it, that is, evaluations involving computer/network self-efficacy. Self-efficacy is a similar term derived from social cognition theory, which provides a basis for understanding how self-efficacy ideas influence individual intelligence through cognitive, motivational, emotional, and procedural functions (Bandura, 1977, 1986, 1991).

Compeau and Higgins (1995) developed and validated a 10-item computer self-efficacy (CSE) questionnaire, finding that CSE significantly impacted computer-use outcomes, emotional reactions, and actual computer use. According to the researchers, computer self-efficacy does not measure core component abilities such as booting up a computer; instead, it reflects a participant’s perception of using technology to complete a goal, such as using software to analyze data. Similarly, while addressing Internet self-efficacy (ISE), Eastin and LaRose (2000) pointed out that ISE is defined as one’s capacity to use higher-level abilities such as troubleshooting difficulties, rather than just doing specific Internet-related tasks like uploading or downloading data. ISE may vary from CSE because it necessitates a set of behaviors for developing and maintaining it.

H1a: computer & internet self-efficacy (CIS) strongly impacts students’ readiness to use online learning management systems at Rajshahi University.

3.2 Self-directed Education (SDE)

Since the mid-1900s, studies on adult self-direction in learning have expanded in popularity and relevance. Educators have used several terms to characterize it, including self-education, andragogy, self-directed study, independent study, self-planned study, adult education, lifelong learning, and auto-didacticism. These terms emphasize the learner’s self-imposed commitment (Guglielmino et al., 2005). A self-directed or autonomous learner sets reasonable learning goals, makes appropriate judgments, and is in charge of his or her learning. An autonomous learner is self-motivated, takes the initiative, clearly understands what he wants to learn, and has techniques for pursuing and reaching his aim, according to Hedge (2001). Self-regulated learning is based on metacognition (thinking about one’s thinking), strategic action (planning, monitoring, and assessing), and motivation to learn (Butler

& Winne, 1995; Winne & Perry, 2000; Perry et al., 2006; Zimmerman, 1989, 2002; Boekaerts & Corno, 2005). Distance educators must support potential learners in assessing if they are ready to join an online course or program, as online learning programs have recently become widely used in Bangladesh. Lin and Hsieh (2001) observed that effective online learners make their own decisions to meet their needs at their own pace and based on their present knowledge and learning objectives. This organization makes it easier for mature, self-directed students to assume responsibility for learning and become more enthusiastic about learning activities. The SDLR scale combines individual (psychic type, learning style) and contextual (community learning resources, culture.) attributes. We can improve the readiness of self-directed learners by teaching them to identify objectives, design a learning project, carry out the plan, evaluate the outcomes, and communicate with other learners. This training may be integrated into adult online courses using self-directed and collaborative learning approaches. Self-directed learner readiness also refers to aiding the organization's and community's preparation to promote self-directed and collaborative learning.

H1b: self-directed education (SDE) strongly impacts students' readiness to use online learning management systems at Rajshahi University.

3.3 Learners Control (LC)

In knowledge-transfer contexts and e-learning systems, learner control has become a key design concern. The degree to which a student may influence his or her learning experience and the process is known as learner control (Shyu & Brown, 1992). Learner control has changed throughout time to embrace new learning paradigms and technology. Different disciplines contribute to designing and assessing such systems, including significant areas like educational psychology, occupational psychology, usability engineering, and knowledge management. Learning should be initiated by self-managed interaction with interactive content; it is widely accepted (Issing & Klimsa, 2002). Learners should tailor the selection and presentation of activities or information and the transfer process to their requirements and preferences. In a study of 81 Taiwanese undergraduates, Wang and Beasley (2002) discovered that learner control in a web-based learning environment mainly influences students' task performance. As a result, online students who have more control over their learning may do better. According to Activity Theory (Engeström, 1999, 2001, 2006), learning is a continuous process of questioning, finding, and altering oneself and the world. Learning that leads to high-quality information, autonomous mastery of the subject matter, and the capacity to apply it in new settings requires an integrated learning process. Davydov (1988) developed the notion of exploratory learning, which supports long-term, complicated learning processes. He saw learning as having six stages: motivation, orientation, internalization, externalization, criticizing, and controlling. The learner is an investigator seeking a broadly applicable and

functional explanatory model of the phenomena (issue) being researched in such an active learning process. Students must often follow a linear sequence in traditional learning venues such as textbooks or instructional films. Study materials may be more flexible and accessible using web-based training platforms. Learners have complete control over the quantity of information, their study order, and their learning rate (Brewer & Burgess, 2005). Previous studies acknowledged that learners have more control over their training and can take a more personalized approach by repeating or skipping parts and following subjects regardless of how the information is physically organized. Learner control, in its most comprehensive meaning, refers to a student's ability to steer his or her own learning experience and process (Shyu & Brown, 1992).

H1c: learner control (LC) strongly impacts students' readiness to use online learning management systems at Rajshahi University.

3.4 Online Learning Motivation (OLM)

Motivation has significantly affected learners' attitudes and learning habits (Bempechat, 2004; Harlen & Deakin Crick, 2003). Learning occurs due to interactions between cognitive and motivational elements, which have been demonstrated to be inseparable. Web-based learning environments are, by definition, significantly different from traditional learning settings (Williams & Williams, 2011). In the context of the COVID-19 pandemic, e-learning has become necessary since the social distance is the only way to minimize disease propagation (Biswas & Debnath, 2020). However, the learners' motivation makes a difference (Zhou, 2016; Zhu et al., 2020). Şahin et al., (2020) describe motivation as the incentive that motivates someone to behave impulsively to inspire others. Many studies have found that learner motivation significantly influences learning results (Brooker et al., 2018; HCK Hsu et al., 2019). Student achievement and engagement in online learning situations have been highly correlated with the desire to study online (Şahin et al., 2020). Researchers have also looked into students' propensity to interact and learn in online learning environments using the self-determination theory (SDT) (Ryan & Deci, 2000). For example, extensive research (Hung et al., 2010) supports this notion. Educators may better understand what impacts intrinsic motivation, psychological well-being, and autonomous extrinsic motivation due to SDT (Ryan & Deci, 2000). Similarly, Zhu et al. (2020) feel that self-motivated learners' ability to govern their thoughts, motivation, and learning behavior may provide significant insights into how they may affect their online learning efforts.

H1d: online learning motivation (OLM) strongly impacts students' readiness to use online learning management systems at Rajshahi University.

In the context of the COVID-19 pandemic, adopting e-learning has become the only way of transmitting knowledge worldwide, as social distancing is the only way

to reduce the spread of the disease (Biswas & Debnath, 2020). However, learners' motivation plays an important role in such adoption (Zhou, 2016; Zhu et al., 2020). Generally, motivation is the incentive that leads someone to act spontaneously (Şahin et al., 2020). Several studies have pointed out that learners' motivation is a noticeable factor affecting learning outcomes (Brooker et al., 2018; Hsu et al., 2019). Moreover, researchers have demonstrated a strong connection between the motivation to learn online and participants' success and engagement in online learning settings (Şahin et al., 2020). Furthermore, several scholars (Ryan & Deci, 2000) have employed self-determination theory (SDT) to study students' behavioral intention to participate and learn in online learning environments.

3.5 Online Communication Self-efficacy (OCS)

Students in an online classroom require various computer-mediated tools to carry out their academic tasks (Palloff & Pratt, 1999). According to scientific evidence, reserved and reluctant students do better in an online learning environment than in a traditional classroom. As a result, students must have chances to engage and communicate with several other students and their teachers while participating in web-based teaching (McVay, 2000a, b). Productive students engage with one another using computer-mediated technologies and raise questions in an online conversation to understand their topic or concepts. In the event of connectivity difficulties or burnout, students should use the chance to collaborate with other students online. Previous research has also indicated that online communication self-efficacy is required for students to minimize digital communication restrictions and loneliness in web-based learning (Hung et al., 2010). Learner motivation has long sparked the interest of researchers and educators, as it is linked to accomplishment and desired results. According to Dörnyei (2020), motivation is intimately linked to engagement, and motivation must be maintained to promote student involvement. He suggests that any instructional design, whether conventional or e-learning, should keep students interested, which is difficult given the multiplicity of distractions in the twenty-first century. Learner motivation, whether generated from classroom experiences or inherent in the learner, is critical in the classroom (Hedge, 2001).

Since the mid-1990s, distance education has grown in popularity, bringing with it several advantages such as increased access to educational activities and learning possibilities, as well as worries about students' and teachers' abilities (Barbour & Reeves, 2009; Campbell & Sarac, 2018). Online learning is a type of remote education enabled by technical equipment utilized by separated learners in their environments apart from the primary education source (Hartnett, 2016). Another subject that requires in-depth investigation in online learning settings is motivation (Burston, 2003). In recent years, there has been much research on motivation in online courses (Chen & Jang, 2010; Baker, 2010; Hartnett et al., 2011; Richardson et al., 2015; Li & Tsai, 2017; Kyewski & Kramer, 2018; Özhan & Kocadere, 2020). These studies do not primarily focus on courses, but their conclusions are essential for virtual

classroom learners of a foreign language. According to Hartnett et al. (2011), online learning motivation is a complicated phenomenon influenced by individual characteristics and contextual factors. Because students are less likely to participate in online courses (Kyewski & Krämer, 2018) and there are high attrition rates, instructional designers face motivating problems in distance education.

H1e: online communication self-efficacy (OCS) strongly impacts students' readiness to use online learning management systems at Rajshahi University.

Academic establishments in most nations have moved their learning and teaching operations from a physical to an online paradigm since the onset of the COVID-19 epidemic. Since then, academics have attempted to identify the characteristics that may influence students' preparation for online learning. As a result, there has recently been a flurry of new writing. During the COVID-19 outbreak, Hung et al. (2010) investigated students to see what characteristics influenced their preparation for online learning. They discovered that five factors influenced their level of readiness, including computer and Internet self-efficacy, online learning motivation, self-directed learning, learner control, and online communication self-efficacy. This study's conceptual framework (Fig. 10.1) proposed five exogenous readiness factors (i.e., computer & Internet self-efficacy, online learning motivation, self-directed learning, learner control, online communication self-efficacy) that shape students' readiness to adopt online learning management systems in the University of Rajshahi. Thus, this study attempted to propose a positive link between Online Learning Management Systems (OLMS) and readiness factors.

Digital technologies can revolutionize the way of teaching-learning (DeNeui & Dodge, 2006). Hundreds of OLMS software are commercially available, including essential, Bridge, Bloomfire, Edmegeo, Litmos LMS, and others. Many of these products are primarily for commercial use, such as training facilities, while others are more concerned with social networking capabilities than learning. However, the Blackboard Learn program (Heirdsfield et al., 2011) is a well-known learning solution. Blackboard, one of the most well-known LMSs, may benefit academic staff and students. Some benefits are increased availability, rapid response, greater two-way interactions, tracking, and developing skills such as organization, time management, and communication (Meurant, 2010). Blackboard has competed with

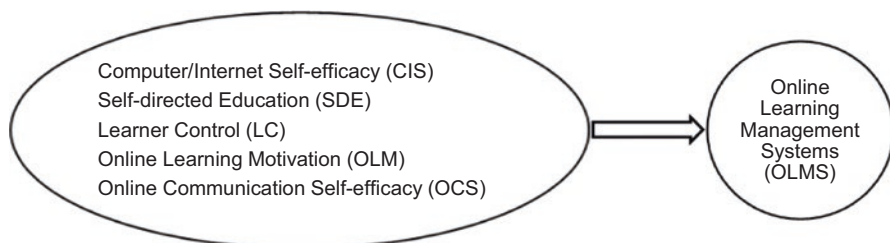


Fig. 10.1 Conceptual framework

freeware solutions like Edvelop Moodle and D2Learn throughout the last five years (Wang & Shao, 2012; Mbuva, 2015; Smart & Meyer, 2005).

Bangladesh's University Grants Commission (UGC) developed the Bangladesh Research and Education Network (BdREN) on behalf of the Ministry of Education (MoE) under HEQEP, with support from both the Bangladesh government and the World Bank. It is a high-speed data communications network that connects public and private higher education and research facilities. BdREN aims to connect all universities, research institutions, medical institutions, libraries, research labs, health care, and agricultural institutions across the country, ensuring adequate access to high-end computing, simulation tools, and datasets for widely dispersed educators and healthcare experts, researchers, and scientists. UGC and Power Grid Company of Bangladesh (PGCB) Ltd. signed an IRU agreement to use two cores from PGCB's countrywide distributed OPGW network to install the BdREN backbone. The backbone network of BdREN is built on top of this optical cable. BdREN is linked to various regional and trans-continental Research and Education Networks (RENs) (e.g., TEIN, GEANT, Internet2, and others). It has connected Bangladesh's academic community and learning materials to the rest of the globe. It also stimulates the country's innovation and supports international collaborative research. BdREN is governed by a board of trustees comprising members from universities/user communities, the UGC, the Ministry of Education, and others chosen for their experience and positions in connected enterprises.

4 Research Methods

Data was collected in a quantitative survey to determine the significance of the proposed relationships in the conceptual framework (Fig. 10.1). The survey instrument included 22 items and four basic demographic questions (age, gender, level of the program of study, and GPA). The measuring items for computer/Internet self-efficacy (CIS) (Cassidy & Eachus, 2002), self-directed education (SDE) (Garrison, 1997), learners control (LC), online learning motivation (OLM), and online communication self-efficacy (OCS) were adapted from earlier research (Hung et al., 2010). The online learning management systems (OLMS) items were taken from research (Ippakayala & El-Ocla, 2017). Google Forms was used to build the scales, which could be filled out online. Students were then requested to complete the requisite online form by sharing the link with their class representatives. The data was downloaded to a computer using an excel program, and then an error-correcting technique was performed. The data was then imported to the SPSS program and analyzed. Respondents were asked to score their level of agreement on a 5-point Likert scale, with one indicating significant disagreement and five indicating strong agreement. As a result, convenience sampling was used to select students from various faculties and departments at Rajshahi University. A total of 250 responses were received, with 237 being useable and the other thirteen being rejected because of disproportionate or incomplete responses. The sample size employed in this study

satisfied the minimal sample size required to undertake the data analysis approach, Partial Least Squares Structural Equation Modeling (PLS-SEM), as proposed by many authors (Kortlik & Higgins, 2001; Hair et al., 2014; Kock & Hadaya, 2018). Much prior research, such as Hair et al. (2014), has shown this. It is crucial to stress that participation in this survey was entirely voluntary, and prior agreement from respondents was requested.

PLS-SEM was used in this work to investigate the causal relationships between the proposed model's components. This analytical method is better suited for exploratory and confirmatory research to determine the number of links between exogenous and endogenous variables where independent constructs predict the eventual dependent construct (Bodoff & Ho, 2016; Henseler et al., 2012). This study initially conducted factor loading, composite reliability, average variance extracted, and Fornell and Larcker's (1981) Heterotrait-Monotrait (HTMT) criterion in reflective constructs by utilizing different proposed threshold values in analyzing the study framework in the PLS-SEM process (Ab Hamid et al., 2017). Finally, the structural model's relevance was tested using bootstrapping and blind-folding processes. In addition, the effect size of the inferred relations and the predictive relevance of the structural model were calculated (Hair et al., 2020).

5 Results

5.1 *Demographics of Respondents*

The respondents were questioned about their gender, age, program level, and previous semester GPA to obtain demographic information. According to the findings, most research participants ($n = 237$) were female, with 38% female and 146 (62%) male. The bulk of participants ($n = 237$, or 90.9%) were similarly young adults under the age of 25, with 7% between the ages of 25 and 30 and just seven (3.0%) above 30. Nearly 90% of participants were engaged in Honours (BSc, BBA, BSS, BSC.ag) degree programs, with 10% in MPhil/PhD programs. Students were also asked about their grades from the previous semester, and it was discovered that the majority of respondents ($n = 177$, 75%) had a GPA of at least 3.00, 60 (25%) had a GPA of 2.8–3.5, and only one participant had a GPA of less than 2.5.

5.2 *Measurement Model Assessment*

In order to determine convergent validity, the measurement model uses factor loading, composite reliability (CR), and average variance extracted (AVE) (Ab Hamid et al., 2017) (Table 10.1). Tables 10.2 and 10.3 shows that all item loading values surpassed the indicated threshold value of 0.5 (Ahmad et al., 2016), while the study

Table 10.1 Reflective measurement model assessment

Construct	Item	VIF	Loadings	CR	AVE	Convergent validity (Ave > 0.5)
CIS	CIS1: I am confident in accomplishing the fundamental tasks of Microsoft Office applications (MS Word, MS Excel, and MS PowerPoint).	1.664	0.860	0.836	0.631	Yes
	CIS2: I am confident in my understanding and ability to manage online learning software.	1.299	0.682			
	CIS3: I am comfortable utilizing the Internet (Google, Bing) to search for or acquire information for online learning.	1.438	0.830			
LC	LC1: I can direct my own learning progress.	1.335	0.913	0.854	0.745	Yes
	LC2: I am not distracted by other online activities when learning online (instant messages, Internet surfing).	1.334	0.811			
OCS	OCS1: I am confident in my ability to interact successfully with people utilizing Internet technologies (email, discussion).	1.761	0.844	0.873	0.696	Yes
	OCS2- I'm comfortable using writing to convey myself (emotions and humor).	1.476	0.778			
	OCS3- I am comfortable asking inquiries in Internet forums.	1.749	0.877			
OLM	OLM1: I am receptive to new concepts.	1.607	0.874	0.892	0.806	Yes
	OLM2: I have a strong desire to learn.	1.607	0.921			
SDE	SDE1: I carry out my own study schedule.	1.079	0.598	0.751	0.696	Yes
	SDE-2: When I am having difficulties with my studies, I seek assistance.	1.573	0.808			
	SDE-3: I'm really good at managing time.	1.505	0.671			
	SDE-4: I devised my learning objectives.	1.108	0.531			

(continued)

Table 10.1 (continued)

Construct	Item	VIF	Loadings	CR	AVE	Convergent validity (Ave > 0.5)
OLMS	OLMS1: Learning from own home possible in OLMS.	1.538	0.836	0.862	0.677	Yes
	OLMS2: OLMS is favorable for people with restricted mobility.	1.535	0.825			
	OLMS3: I have freedom in choosing teaching materials	1.548	0.806			

*SD51, LC3, LC4, OLM3, items were deleted due to loading Composite Reliability < .508 (Hair et al., 2014)

Table 10.2 Square root of the AVE and correlation of coefficient

Mean, STDEV, T-values, P-values					
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T-statistics (O/STDEV)	P-values
CIS -> OLMS	0.326	0.328	0.055	5.885	0.000
LC -> OLMS	0.021	0.021	0.056	0.379	0.000
OCS -> OLMS	0.232	0.207	0.152	1.526	0.000
OLM -> OLMS	0.132	0.147	0.121	1.090	0.000
SDE -> OLMS	0.220	0.232	0.066	3.345	0.001

Table 10.3 Fornell and Larcker criterion

	CIS	LC	OCS	OLM	OLMS	SDE
CIS	0.794					
LC	0.454	0.863				
OCS	0.550	0.532	0.834			
OLM	0.559	0.493	0.658	0.898		
OLMS	0.669	0.495	0.693	0.683	0.823	
SDE	0.598	0.626	0.654	0.619	0.662	0.660

Criteria: Discriminant validity is established based on Fornell and Larcker (1981)

Note: Bold diagonal values represent the square root of the AVE, and the off-diagonal value represents the correlation of coefficient

constructs CR values exceeded the standard critical level of the recommended value of 0.708 (Shau, 2017). Finally, the study discovered that all study constructs had AVE values larger than the recommended value of 0.5 for convergent validity (Raman & Don, 2013). As a result, the reflective model passed all three requirements for convergent validity.

Table 10.4 HTMT result

	CIS	LC	OCS	OLM	OLMS	SDE
CIS						
LC	0.661					
OCS	0.722	0.741				
OLM	0.752	0.693	1.224			
OLMS	0.891	0.676	0.879	0.882		
SDE	0.875	0.581	0.749	0.687	0.673	

Criteria: Discriminant validity is established at HTMT 0.90

Table 10.5 Results of the structural model

Direct effect	Beta	S.E.	<i>t</i> -value	<i>p</i> -value	Decision	f^2	VIF
H1a: CIS -> OLMS	0.326	0.055	5.885	0.000	Supported	0.119	1.262
H1e: SDE -> OLMS	0.220	0.066	3.345	0.001	Supported	0.110	1.445
H1b: LC -> OLMS	0.121	0.056	1.379	0.005	Supported	0.105	1.460
H1d: OLM -> OLMS	0.132	0.021	1.090	0.000	Supported	0.152	1.201
H1c: OCS -> OLMS	0.232	0.052	1.526	0.000	Supported	0.113	2.213

SRMR = 0.092; rms Theta = 0.253, $R^2 = 0.625$, $Q^2 = 0.311$

Path Coefficient 0.01**, 0.05* (Hair et al., 2017)

Lateral Collinearity: VIF 3.3 or higher (Diamantopoulos & Sigouw, 2006)

$R^2 \geq 0.26$ consider Substantial (Cohen, 1988)

$f^2 \geq 0.26$ consider Substantial (Cohen, 1988)

$Q^2 > 0.00$ consider large (Hair et al., 2017)

The test indicated by Fornell and Larcker's (1981) criterion as the classic technique (Franke & Sarstedt, 2019), and Henseler et al.'s (2015) HTMT criterion as a superior approach were used to examine discriminant validity (Shiu et al., 2011). According to the usual technique, the square roots of the AVEs were higher than the correlation values for each study concept pairing (see Table 10.4). The superior technique recommends that a discriminant validity criterion of less than 0.90 between two research constructs is acceptable. For each group-specific model estimation, the HTMT.90 (see also Table 10.5) indicates that the outcome is less than the suggested critical value of 0.90. As a result, it passed the discriminant validity tests.

5.3 Structural Model

The bootstrapping approach was used to test the path relations in the structural model. This analysis assures that the path relationships between the research constructs are precise and significant (Ringle et al., 2020). Five thousand subsamples were obtained from the primary sample in this example. The bootstrapping findings

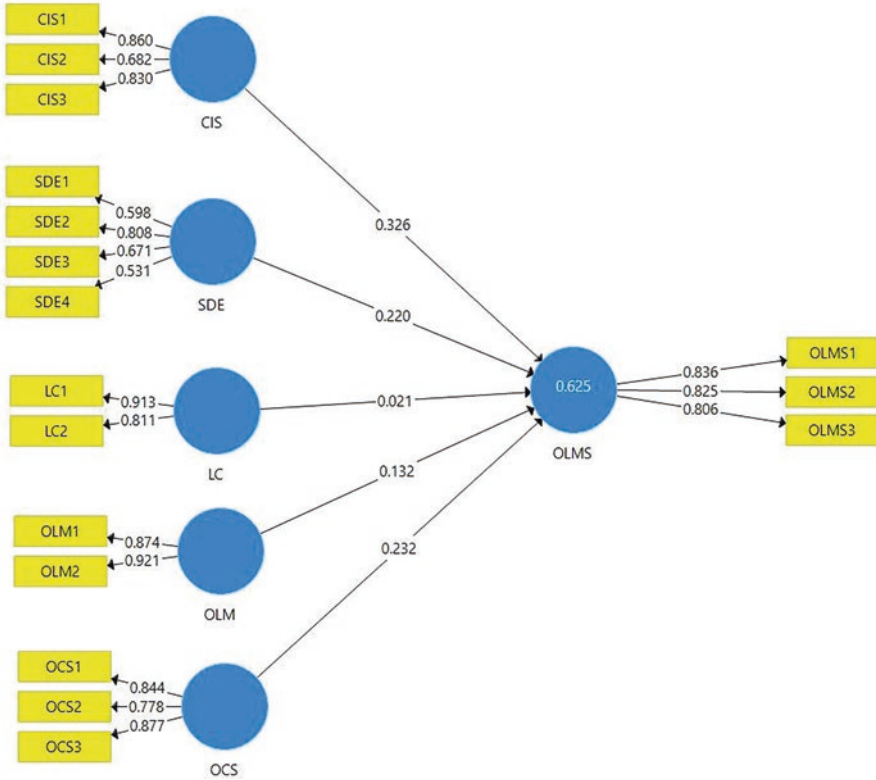


Fig. 10.2 Structural model

show that the direct effects of CIS, SDE, LC, OLM, and OCS on OLMS are positive and substantial (also see Table 10.5).

Figure 10.2 and Table 10.5 show each hypothesis’s path coefficient (β), t -statistics, and p -value. According to Table 10.5, all presented hypotheses were validated, indicating a direct association. H1a ($\beta = 0.326, t = 5.885, p = 0.000$) denotes the path between computer and Internet self-efficacy (CIS) and Online Learning Management Systems (OLMS), describing a significant positive association between the two. H1b ($\beta = 0.121, t = 1.379, p = 0.005$) depicts the path between learner control (LC) and Online Learning Management Systems (OLMS), demonstrating a significant positive association between LC and OLMS in utilizing online education systems. H1c ($\beta = 0.232, t = 1.526, p\text{-value} = .000$) suggests that the association between Online Learning Motivation (OLM) and Online Learning Management Systems (OLMS) was positively significant and therefore validated the current study. H1d ($\beta = 0.232, t = 1.526, p\text{-value} = .000$) indicates that the relationship between Online Communication Self-efficacy (OCS) and Online Learning Management Systems (OLMS) was positive and significant, justifying the current study. Finally, H1d ($\beta = 0.220, t = 3.345, p\text{-value} = 0.001$) suggests that there was a

significant positive relationship between Self-directed Education (SDE) and Online Learning Management Systems (OLMS) in terms of using an online platform for education.

The endogenous variables' R-squared (R²) values are used in PLS analysis to determine the standard path coefficient for each association between exogenous and endogenous variables. The R² values in PLS are evaluated similarly to those from multiple regression analyses. According to Hair et al. (2014), R² values of 0.75, 0.50, and 0.25 define considerable, moderate, and poor levels to predict accuracy (2014). After that, the degree of R² (determination coefficient) was assessed. The most typical use of r-squared is determining how well a regression model fits the observed data. The percentage of the dependent variable variance explained by a linear model is R-Squared. A greater R-Squared suggests a better model fit. The proportion of variance in the endogenous construct was calculated using the coefficient of determination (R²), calculated using the independent variables. OLMS has R² and Q² values of 0.625 and 0.311, respectively. It is meant that CIS, SDE, LC, OLM, and OCS explained 62.5% of OLMS variation. As a result, H1a, H1b, H1c, H1d, and H1e were valid. On the other hand, CIS, SDE, LC, OLM, and OCS had a favorable and substantial direct influence on OLMS.

The structural model's predictive relevance was further assessed (Hair et al., 2017). Using Stone-Geisser's (Q²), the structural model evaluated cross-validated predictive relevance (Q²). The predictive usefulness of the structural model was also demonstrated since their Q² values for OLMS were 0.311, more than 0 (zero). Furthermore, the effect sizes (f²) that defined the magnitude of a given independent variable's relative influence on a dependent variable were medium. Cohen's f² is one of the most frequent methods for estimating the effect size of each variable or construct in a multiple regression model when both independent and dependent variables are continuous (Aguinis et al., 2005). The results revealed that OLM has the most significant effect size, followed by CIS, which has the highest positive relationship to OLMS (f² = 0.152) and (f² = 0.119), respectively. The impact sizes between the other constructs used in this study are also included in Table 10.5.

6 Discussion and Implication

This study aimed to examine if there was a relationship between the online learning management system and the readiness determinants that led to university students at Rajshahi University, one of Bangladesh's major institutions, adopting it during the COVID-19 outbreak. According to the findings, students demonstrate a five-dimensional (factors) model of computer/Internet self-efficacy, online learning motivation, self-directed learning, online communication self-efficacy, and learner control as the adoption factor for Bangladesh's online learning management system. Its validity is confirmed by confirmatory factor analysis, and all constructs have strong discriminant validity and reliability. The composite reliability of the five subscales met the required minimum of 0.70 (Fornel & Larcker, 1981). All factor

loadings were statistically significant (p -value = 0.001), indicating that the factors accurately represented each item and that all constructs had more significant variance with their indicators than with other constructs. Consequently, the OLMS accurately predicted online learners' readiness, attitude, and behavior.

According to the findings of this survey, in the context of Corona, most students had a favorable view of online education. Online learning was beneficial since it offered learners flexibility and convenience. Students appreciated the information that was well-structured and included recorded lectures that were published in academic databases. They also mentioned the need for interactive sessions at each lesson's conclusion, with quizzes and assignments, to maximize the learning experience. However, due to technology limits, delayed feedback, and the instructor's failure to adequately handle Information and Communication Technologies, most students claim that online classes are harder than traditional classrooms. These criteria should be considered to make online education more valuable and productive for the learner. It is probable that, once the COVID-19 epidemic has passed, we will witness a continuous rise in educational systems adopting online platforms as study aids, although in a hybrid format alongside typical classrooms. As a result, this research will be valuable in envisioning and rebuilding higher education with online components.

This study presents a conceptual framework for measuring learner readiness in online learning environments and examines the validity and reliability of a quantitative instrument that might benefit research in this area. Academic support based on learning attitude, style, and ability has traditionally helped students and instructors. With the popularity of e-learning on the rise, it is more important to look into students' motivations and qualities when studying online. The scale's factorial structure is confirmed by examining the relationships between the components, which addresses essential psychological qualities (internal consistency and idea validity). These data show that, even though the scale is multidimensional, with five dimensions, the items represent the overall online learner-ready construct at a higher level. When comparing the current study to prior relevant studies, it becomes clear that learner readiness is a significant concern in online learning environments. In the Bangladeshi context, the OLMS supplied by this study appears to be more detailed than the readiness for online learning questionnaire provided by other scholars in the western context. The present study adds more dimensions and items to the mix, covering a broader range of online learners' attitudes and behaviors. These findings prove that although the scale is multidimensional, composed of five dimensions, the items reflect the overall online learner readiness construct at a more general level. Comparing the present study with previous related studies reveals that learners' readiness is critical in online learning settings. The OLMS provided by the present study seems more comprehensive in the Bangladeshi setting than the readiness for online learning questionnaire provided by scholars in the western setting. The current study constructs more dimensions and more items that cover the scopes of online learners' attitudes and behaviors; general factors (e.g., desire for learning and computer/Internet self-efficacy) and specialized dimensions (e.g., computer/Internet self-efficacy) are included in the OLRs instrument (e.g., online communication

self-efficacy). This study's instrument seems to merit enough to justify the additional investigation.

Furthermore, students' attitudes about e-learning are moderately favorable. One of the causes might be a lack of readiness for a pandemic. This viewpoint is supported by extant research. According to the findings of this study, students were not ready for an online learning experience during the pandemic. Students are either concerned that online would be difficult or believe instructors will not sufficiently assist them during the pandemic. Therefore, students refrain from using assessment methods at Rajshahi University. Student assessment techniques should be varied, and students should be taught self-learning abilities. These indications appeared in previous research, and they did so again in this one. When students' beliefs that they would not be successful in e-learning throughout the transition from face-to-face to complete online education are examined, it is clear that most students experience "uncertainty." It is a commendable endeavor to keep students interested in education throughout this time. However, how this system works, who can use it, what kind of instruction is delivered, and how it may be improved are all concerns that must be addressed. According to previous study findings from Bangladesh, infrastructure is the most crucial concern, and online education is not accessible to everyone. In rural regions, most schools and universities lack technology-based educational resources. Many students do not have access to laptop computers.

Furthermore, Internet connections and speeds are inadequate and sluggish in rural locations. Even in urban regions, the Internet connection quality is poor. However, to do so, they must maintain confidence in their ability to succeed, and negative psychology must be promptly erased during this moment of fear. It is critical that the e-learning approach, which has grown in popularity due to technological advancements, be analyzed from all angles and utilized correctly. This study looked at the influence of digital-age practices on e-learning in this direction. The outlines of the education system are altering as attempts to prevent the spread of the new coronavirus progress, with online education becoming the dominant mode of instruction. Universities and colleges are turning to online platforms to keep up with the curriculum. It is too early to determine how students and instructors will cope with online learning when they discover the restrictions and reorient to handle them, but students' perceptions and preparation are crucial factors that we have sought to capture.

7 Conclusion and Recommendations

Education is no longer limited to traditional classrooms but has spread worldwide. Virtual classrooms with online learning are an essential part of education and learning. It would save costs and increase learning flexibility without degrading cognitive development or excellence. Additionally, virtual classrooms preserve synchronized learning and lecture accessibility. Furthermore, the audio-visual display of knowledge makes learning more engaging and interactive. OLMS is a software program

that supports E-learning and virtual classrooms. This chapter describes OLMS use readiness in a university in Bangladesh and highlights its adoption factors. OLMS has many capabilities, such as mobile and webcam recordings, which provide teachers and students with a trustworthy lecture recording. The notice board function provides the social media forum and chat platform. Users can upload a videotape to a public domain or a cloud database and share it with others. The maintenance of profiles is both efficient and safe. The program is built to handle massive data, such as pictures and videos.

This study aimed to see whether Rajshahi University was ready for online education in Bangladesh. The new era and COVID 19 have demonstrated that online education will be an unstoppable force in education. As a result, educational institutions must conduct a SWOT analysis of their preparation and address any shortcomings quickly. In this regard, we established a conceptual model to evaluate this university's readiness from computer and Internet self-efficacy, online learning motivation, self-directed learning, learner control, and online communication self-efficacy. The results have revealed that readiness is not very high in private and public universities. It is probably because of the sudden introduction of online education, which causes immediate improvements in cultural readiness, cognitive readiness, strategic readiness, and innovative valence characteristics.

Furthermore, public universities' issues appear to be more serious than private institutions in the region. There is a significant divide between public and private institutions in all areas of contemporary research. In this regard, we suggest that Rajshahi University should adopt the following strategies:

- (a) Prepare for online education from a resource standpoint by planning and allocating appropriate financial resources, allocating adequate human resources, and assigning adequate IT infrastructure resources.
- (b) Culturally prepare for online education by streamlining decision-making processes for online education system development, allowing all faculty members to participate and share their ideas in discussions about online education development, and taking responsibility for online education support following those meet-ups.
- (c) Strengthen the strategic plan by establishing clear and relevant strategic goals for each organizational member participating in online education in some capacity, particularly when technology is used to support online learning. The strategic objectives of each member should be conveyed to them in order to increase their motivation to achieve them.
- (d) To be ready for online learning from an information technology perspective, organizations must continue to develop consistent, up-to-date-and-credible information technology facilities and infrastructure to support digital education, as well as develop particularly unique platforms or contract management with software providers for organizational members to connect a variety of technologies intended to support online education such as zoom, Google Hangouts, and Google Meet.

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Chapter 11

Blended Approach Learning in Leading Private Universities of Bangladesh During COVID-19 Pandemic: Opportunities, Challenges and Strategies



Mohammad Shahidul Islam  and Tania Akter 

Abstract During crises (e.g. COVID-19, natural disasters), education may never be set back to the usual frame of the traditional learning system—F2F learning and teaching in the classroom/laboratory. Such an innovative paradigm shift, the appearance/need of blended learning, brought by the novel COVID-19 pandemic put plans together in curriculum alteration and modification. This chapter seeks to position Bangladesh in an innovative reality and apply a new worldwide paradigm called blended learning. Methodologically, the perspective literature of blended approach learning is reviewed to direct its opportunities, challenges and strategies in focusing on the theoretical potentials of a blended teaching and learning approach in academic repossession during a coronavirus outbreak/nationwide crisis in private universities of Bangladesh. The chapter suggests that researchers need to highlight different aspects of blended learning, especially the characteristics of technology and the behaviour of teachers and students.

Keywords Blended learning · F2F learning · COVID-19 pandemic · Private university · Education policy

1 Introduction

The eruption of the COVID-19 pandemic has significantly transformed almost all aspects (e.g. lifestyle, food intake, social affairs, education, business) of life and Bangladesh has not been an exception to these changes (Hoque et al., 2021). The difficulty of fighting the outbreak of COVID-19 from spreading more extensively has made country leaders from all sectors develop strict rules so that the chain of the

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spread of COVID-19 can be wrecked and life can be normalized. The Ministry of Health has suggested some standard dos and don'ts, such as social and physical distancing, which have created difficult choices for each state institution, including those of education, to implement in the abrupt advent of COVID-19 (Tsang et al., 2021).

In Bangladesh, large-scale social restrictions were adopted from the 26th of March 2020 due to the increasing population infected with COVID-19. These were obeyed by other regulations in the form of office in the home for workers in all public and private sectors, not to attend prayer centres or assemble at a place and schooling from home for students ranging from the early childhood education level to universities (Hoque et al., 2021). UNESCO (the United Nations Educational, Scientific and Cultural Organization) reported that as many as 119 million learners or 68% of the total enrolled learners were affected worldwide by 144 countrywide terminations. Thus, all concerned nations had to alter their learning systems (F2F to online, for example) due to COVID-19 (Leal Filho et al., 2021).

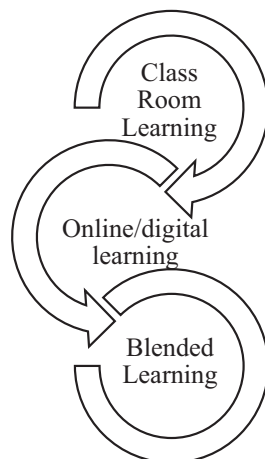
With the gradual eruption of the coronavirus, Bangladesh closed education institutions nationwide to avoid its spread. Universities, all public and private ones, were being prohibited from continuing classes in F2F. Social distancing was observed as proactive efforts to contain the further outbreak and spread of the coronavirus in Bangladesh (Adeyanju et al., 2022; Hoque et al., 2021). The emergency lockdown, imposed, on 26th March 2020, by the government of Bangladesh, had a profound impact on traditional higher education institutions, such as universities. The learning and education management had to switch from predominantly F2F teaching to a fully online mode. This required a fundamental change to core teaching and assessment processes which has innovated a new era of learning systems with new opportunities and challenges (Maatuk et al., 2021).

That being said, moving conveniently from an atmosphere of traditional education to distance and virtual learning could not ensue overnight. This immediate conversion is connected to various impediments and challenges at this (corona) issue. Because nobody comprehends when this pandemic will disappear absolutely, educational institutions across the country are determined to utilize the already available technical aids to construct online learning tools for students of all academic areas along with aiming to retain the scope of the traditional F2F learning mode, called blended learning approach (Fig. 11.1), during the developing situation of the COVID-19 pandemic (Singh et al., 2021).

More precisely, blended learning is the term assigned to the educational practice of integrating digital/online learning tools with conventional classroom face-to-face (F2F) teaching. Thus, a blended approach to learning is about the course scheme that reinforces teachers' and students' teaching and learning experiences by blending/combining F2F learning activities with online learning mechanisms.

The overall objective of this chapter is to place theoretical and practical implications of blended learning in leading private universities of Bangladesh during the COVID-19 pandemic. Thus, the broad objective of this chapter has been accomplished, first, by investigating the foundation of blended learning (e.g. its rise, advantages and practical approaches to blended learning) as reviewed from the

Fig. 11.1 Blended learning



current state-of-the-art literature (2020–2021) in the chapter’s topical areas (e.g. blended learning, F2F learning, COVID-19 pandemic, private university, COVID-19 education policy) then second, by looking at potentials of blended learning in leading private universities of Bangladesh during the crisis (e.g. corona disease, natural disaster), together with lessons learned and the future of blended learning. Third, potential challenges are investigated by proposing strategic planning. Finally, the chapter is concluded that blended learning can be implemented in Bangladesh’s education systems. Still, it is recommended that further development of the existing conceptual blended learning approach should go through empirical research based on psychographics, demographics and geographical locations of teachers and students.

2 Rise of Blended Learning During COVID-19

Rather than public universities, changes in learning systems during COVID-19 force private universities to implement distance education or online learning, external studies, flexible learning and massive open online courses. Due to extensive infrastructure and academic investment, most leading private universities were concerned about returning the investment (Parkes & Barrs, 2021; Singh et al., 2021). There were looming economic losses. Therefore, private universities’ e-learning plans, including digital learning options, have been introduced as sustainable and reasonable to provide continuing education for students during the COVID-19 pandemic (Chakraborty et al., 2021). Private universities implemented an online learning system by holding simultaneous online learning exercises (e.g. video lectures and handouts) to ensure that learning for students was not interrupted. On account of their closures, some private universities have implemented instruction and guidance for students by distance learning, digital learning environments and solutions,

where necessary and independent knowledge persuasion was premier (Parkes & Barrs, 2021), including creating an e-content repository, which publishes materials of pedagogical specialists for working in e-learning environments; several means to support e-learning have been established; for example, BRAC University introduced buX (an effective pedagogical online platform) first time in Bangladesh (Tasnim, 2021).

However, traditional classroom learning and teaching through being physically present in the classroom has still been in demand by students and guardians. Based on COVID-19's slow-down spread, private universities are considering a blended learning approach to pursue effective learning in more health-protective conditions (e.g. more minor meeting/interaction frequencies) and reduce the potential pressure of physical nearness among students (Mali & Lim, 2021). Thus, the blended learning approach could be an effective source for fighting COVID-19 and continuing students' effective learning because blended learning consists of two distinctive teaching and learning modes in the combination of (1) online classes through digital media and (2) traditional or in-person (both teacher and student) class methods. Face-to-face classroom practices are combined with computer/information communication technology (ICT) to facilitate content, delivery and exchange activities (Singh et al., 2021). Thus, the pandemic has directly influenced Bangladesh's university education and student experience. In most academic institutions, specifically private universities, F2F (face-to-face) learning has been replaced by blended learning, meaning online and F2F. Still, most universities keep several courses (e.g. business communication, English, research method) in online mode. The COVID-19 pandemic has dramatically influenced academics' professional/personal lives, putting forward the potential of blended learning with advantages and challenges (Mali & Lim, 2021).

3 Advantages of Blended Learning

Blended learning is considered one of the most modern types of education that mixes old and new in a single work frame; it preserves traditional methods and uses the technological invention to get students' attention who have already tended to be addicted to digital media in their social life. This also fulfils the global need to develop traditional teaching methods to qualify the existing trends and standards of different education systems in a crisis, such as the COVID-19 pandemic (Nijakowski et al., 2021).

In Bangladesh's city-centred quality education system, students come from distant places, so blended learning can help those with transportation and accommodation problems in cities (Juanda et al., 2021). In a blended learning course, students might make use of 20–40% of learning in a conventional classroom and approach online materials provided on the respective designed platform, such as buX and blackboard, independently by completing online aspects of the course outside the school from any place with access to the Internet (Alhadreti, 2021).

Blended learning may affect student perceptions of the experimental-based course and make them feel more responsible for their knowledge and ownership of learning material and e-learning strategies in parallel with traditional classroom/lap-oriented teaching methods (Lomer & Palmer, 2021).

The blended learning approach for enhancing meaningful learning using the ICT skills of contemporary students is found to be a significant essential increase in meaningful learning by the end of the course. Blended learning environments may be offered for higher education in high invested and self-financed private universities in Bangladesh (Al Salman et al., 2021). Blended learning expands students' opportunities of fulfilling course outputs that corresponded with fully online and face-to-face courses by decreasing dropout rates, improving test scores and increasing motivation. It will also be helpful for needy students who need to continue professional employment for supporting families in developing countries in which Bangladesh is one instance. On the other hand, it also feels like a virtual human touch to the teaching, while blended learning goes live weekly (Islam, 2021).

The interactive content may enable the teacher to create a high level of interest, accountability and accurate assessment. It may enhance individualization, personalization and relevance. It may let the instructor tailor learning content to the unique needs of different audience segments. Since the leading private universities, such as BracU and NSU, have adequate technical support, a blended learning approach may offer students the best learning and academic achievement (Berga et al., 2021) because teachers and students have higher flexibility and accessibility without renouncing face-to-face contact. A blended learning technique is a practical and less-risk approach planned to encounter the challenge of transformational changes due to the corona conundrum that technological developments bring to private universities in Bangladesh (Shahriar et al., 2021).

4 Practical Approaches to Blended Learning

As mentioned above, the introduction of blended learning, also called hybrid learning, combining both face-to-face and online learning, creates a blended model of synchronous and asynchronous learning (Raes et al., 2020). Thus, there have been many innovations in the teaching and learning environment. The pedagogical approach has gone through a rapid process. Therefore, adopting the blended learning approach requires practical analysis, especially in developing countries (e.g. Bangladesh). The blended learning approach challenges technological mixing in teaching and learning (Rasheed et al., 2020).

The authors discussed that most universities and institutions have invested in technology and infrastructure to support interactive and online activities. It is essential to understand that the new technology should be flexible for students' convenience (Tekane et al., 2020). More interactive learning, such as videoconferencing or meeting online, can engage students online and ensure more interactive learning as an alternative to physical learning (Azlan et al., 2020). Furthermore, COVID-19

Table 11.1 Examples of blended learning

Activity	F2F approach	Blended
Learners' group task (e.g. term paper, presentation, fieldworks)	Classroom meeting, learners' physical presence during collaboration/practice	Online sharing, review and revising projects via different platforms (e.g. Facebook, WhatsApp, email, Google docs, live chatting/conferencing)
Chapter-wise lessons' lecture	Classroom environment, learners-instructors F2F interaction	Zoom/Google Meet/video-classroom
Assessment	Learners' physical presence in tests, such as midterm and final examinations in the classroom	Learners' progress is assessed by quizzes and mini-task submission, digital submission (e.g. video, Turnitin, Google form)

has made the traditional classroom teaching methods impossible where webinars on recorded video recordings of class materials make it convenient and more accessible. Table 11.1 presents some examples of how to blend learning.

Shifting to online or hybrid learning requires re-examining the teaching style and course design to ensure students' effective learning (Sadeghi, 2019). Some of the practical approaches which can be adopted by the interested universities of hybrid or blended learning from Thompson (2016) and Alamri et al. (2021) are discussed below.

4.1 Face-to-Face Driver Model

As an alternative to the traditional classroom, students log in to an online interactive session where assignments are given using an online platform as a learning management system (LMS) or other learning management tools (e.g. Google Meet, Zoom) wherein the meeting session students can consult with the teachers to clarify concepts.

4.2 Enriched Virtual Interaction

Another alternative to a physical classroom or full-time online learning is where students may log in to a webinar or online meeting session and learning materials already shared with an online learning platform. Attendance can be ad hoc and give flexibility to the students to learn at their own pace.

Blended learning or hybrid learning should assess the student's level of understanding, flexibility or user experience (Singh et al., 2021). It is a blend of technology with synchronous and asynchronous learning. The following suggestions should be considered for practical approaches to blended learning.

Student-centric learning, the newly introduced blended learning, should be learner-driven, where instructors and students should build relationships with each other and students among themselves to feel socially connected and reduce their stress, as in the COVID-19-time students cannot see each other.

4.3 Communication with Students

As the blended learning model is new for the student, it is essential that the students are communicated with and guided on how to continue their studies, maintain their routine, set a clear expectation on their academic performance and understand the consequence of ignoring academic integrity standards (Lapitan Jr et al., 2021).

4.4 Connecting Face-to-Face with Virtual Learning

The instructors must create a virtual classroom environment between online learning and face-to-face online meeting sessions (Serhan, 2020). For example, online activity can be given to a pair or individual with follow-up online small group discussion using the Breakout Rooms options of the videoconferencing tools.

4.5 Motivating Interaction

Taking the support of social media channels or other information-sharing channels might motivate or encourage the students to be more connected with the asynchronous learning management system (Hamadi et al., 2021).

4.6 Learning Management Tools

Students can use several learning management tools like Google, Teams, OneNote, or other video recording software to facilitate their group work (Mazzucato et al., 2021). In addition, students can use data collection tools such as Google Forms and Survey Monkey, PowerPoint, and Google Slides to present their learning.

4.7 Engaging Assessments

Utilizing interactive assessment techniques for quizzes and online activities will encourage students' engagement (Zainuddin et al., 2020). For example, gamified learning platforms can be followed depending on the subject area, and instructors can also support students in building their games.

4.8 Innovative Assessment Technique

As blended learning is new for the students using digital resources, assessments should also follow digital reviews such as creating podcasts, videos, blogs and online discussion forums (Ihnatova et al., 2021). A live presentation can enhance their learning and understanding of the content.

5 Blended Learning in Private Universities

In the COVID-19 crisis, universities worldwide shifted from face-to-face to online or a hybrid education model (Singh et al., 2021). In Bangladesh, blended learning is followed already in many private universities wherein face-to-face classroom class is taken, and there is LMS or Moodle to get the materials online. In Bangladesh, the top private universities, including mediocre private universities, follow a mix of hybrid models (Shrestha et al., 2022). They use a dedicated online learning management platform to make learning materials available for learning at their own pace. Then students attend live meeting sessions to discuss or consult with the course instructor to clarify their concepts and knowledge.

Private universities developed a digital learning platform and invested in the tools available to contribute to education, considering the pandemic. The University Grant Commission (UGC) monitors all private universities regarding quality, course design, curriculum design or change (Genilo, 2021). During COVID-19, the private and public universities are monitored and instructed on how to operate educational activities. The top private universities in Bangladesh have their learning management platform to make learning materials available with videoconferencing meeting sessions to engage interaction between instructors and students (Shrestha et al., 2022).

To achieve pedagogical goals and enhance teaching qualities and students' quality learning in university education, blended learning has combined online learning with face-to-face (F2F) learning. Blended learning is explained as 20% classroom teaching linked with online content integrated with 80% high-quality online learning (Anthony et al., 2020). In another way, blended learning in university education consists of different didactic approaches such as cooperative learning, discovery

learning expository, presentations, personal communication, broadcasting, publishing, etc. (Graham, 2013; Klentien & Wannasawade, 2016).

The newly adopted blended learning system has given an alternative to a real-life environment, offering a flexible learning environment with quality learning. Moreover, in university education, while adjusting face-to-face with online learning and blended learning, it is observed that it enhances flexibility for both instructors and students and improves personalization, and self-directed learning improves student outcome, increases interaction and communication between the teacher and students and reduces cost allocation (Wanner et al., 2021). In addition, it is also stated that blended learning has improved critical thinking and writing ability and academic writing ability; most importantly, students have adopted the technological skills required to follow the process of blended learning (Hasanah & Malik, 2020).

6 Lessons Learned and Future of Blended Learning

The newly introduced blended or hybrid learning in the COVID-19 crisis is still under experimentation (Eradze et al., 2020). The educators are still applying the model to adjust the challenges requiring thorough analysis and implementation in terms of instructors and students. The developed countries can accommodate the challenges, while the developing countries face the challenge of adopting blended learning. It requires technological tools with needed technical expertise. In Bangladesh, the private universities are following an online learning platform available with follow-up videoconferencing classes and dedicated social network as optional; initially, it created some challenges as both students and instructors had to go through online self-paced training to understand how to operate and control online learning management platform (Genilo, 2021). In addition, recording the lectures in video format and editing the video files was also a new skill learned during the COVID-19 crisis. Moreover, students struggled to adjust to the online learning system, such as listening to video recordings, submitting assignments online, sitting on proctored exams, video-recorded presentations, etc. (Sangster et al., 2020).

After passing through almost 2 years with students and instructors, they have accepted and adjusted to the blended learning approach. However, it still requires observation in terms of students' perspectives and whether it needs improvement to make it more user-friendly so that students' learning experience becomes more accessible and they know and understand (Tekane et al., 2020). The blended or hybrid learning approach will stay even if the situation becomes normal and the corona situation is within control. The education sector has already shifted to a technological education system where the universities have invested. Students and instructors have also witnessed the advantage of online learning over face-to-face learning, where they do not have to attend the classes physically and stay distant and follow the course.

7 Potential Challenges

In Bangladesh, though blended learning is considered beneficial to encourage contemporary university students to participate in education actively, the blended learning approach is not free from challenges. The following challenges are predominant:

First, a challenge to be considered in implementing blended learning in private universities is adapting this element to the traditional university culture. Specifically, the issues likely to arise are related to the extension of comfort levels associated with using technology in education; the level of students' self-discipline, organizational and managerial backing; student responsiveness; and social norms and values. In some cases, the stand of blended learning towards some teachers/facilitators can be perceived against new technical methods as a substitute for F2F instructions that demonstrate a type of facilitator resistance that should be evaluated (Singh et al., 2021).

Second, blended learning requires high student discipline and responsiveness, unlike a traditional approach. From a cultural standpoint, students may not take online instruction seriously as other instructors and students did not use it at the university in previous trends. Students may perceive blended learning as stressful and minimize the value of their tuition fees. Indeed, taking online instruction seriously requires students to have adequate self-discipline and self-responsibility (Berga et al., 2021). Applying blended learning programs to senior undergraduate classes, as a first stage of the blended learning implementation, would help ensure appropriate student discipline and responsiveness levels. Some first-year students might need relevant skills training to succeed in blended courses (Lomer & Palmer, 2021).

Third, the flexibility of blended learning that addresses varying design needs is both a strength and a challenge. For a program to be blended in design, not just delivery, blended learning requires an intentional strategy for instructional design. If there were designated innovative frameworks that could be employed as procedures, it would considerably facilitate the task of executing blended learning. Besides, building effective and interactive digital content is another critical issue that challenges instructors of blended courses (Mali & Lim, 2021).

Fourth, the time required by instructors who implement blended courses will increase because they must develop digital content and moderate online learning. Transforming traditional systems into blended classes will require more instructor time than developing conventional methods because of the necessity of redesigning the course (Nijakowski et al., 2021). Furthermore, instructors and students typically spend more time learning new techniques and skills and interacting with each other in a blended learning setting. Instructors will have to customize their schedules to accommodate more frequent interaction with student groups who generally expect more regular feedback in online environments than in face-to-face settings (Singh et al., 2021).

Finally, online practice cannot be beneficial to enhancing pure scientific experiment courses and autonomous learning and learner motivation. The influence of blended learning environments on student motivation and engagement may significantly increase moderate academic accomplishment compared to students in the F2F learning environment in universities (Berga et al., 2021).

8 Strategic Planning

The education sector cannot deny that F2F lectures have their advantages. Still, we have to support using blended learning as much as possible to support education technology and use resources that private universities in Bangladesh provide to staff. Moreover, we must build our students for further studies inside and outside the country to meet the global development in the education system. We need to prepare our students to compete inside Bangladesh and outside it, anywhere around the globe (Rossiou & Mavridou, 2021). Using blended learning can help solve students' transport and accommodation problems, specifically female students who cannot reach universities daily. It can make education attainable to everyone, regardless of age or location (Singh et al., 2021). Also, it can help to amend the problem of few instructors on specific subjects. To overcome the cons of using blended learning, educators have to activate and increase electronic laboratories in universities, build electronic clubs in each city in central places with good net access and use students outside the universities to help those who have problems in their areas (Bebbington, 2021).

To explore further development of existing conceptual blended learning approach, education leaders should conduct empirical research based on psychographics, demographics and geographical locations. Researchers need to highlight different aspects of blended learning, especially the characteristics of technology and the behaviour of teachers and students. Researchers must argue for a more holistic approach to understanding the complexity of blended settings and processes as part of a whole system (Berga et al., 2021; Rossiou & Mavridou, 2021). The chapter agrees with this view and suggests additional avenues for future research into blending learning based on our discussion above. For example:

- More insights into the factors and methods should be investigated to improve connections between the virtual and physical elements of blended courses within universities.
- Comparative research should be conducted into the forces and drawbacks of diverse ICTs, particularly the contemporary technologies combined with F2F atmospheres, such as examining optimal blends' personality attributes for learning.
- Pedagogical frameworks can be modelled to sustain blended learning for teachers and students.

- More investigation is needed for successful professional development models and support for instructors who adopt this new teaching model. Blended learning should deliver flexibility in learning for both teachers and students.
- Integration of the virtual and physical topography facilitates teachers and students to evolve as learners. However, this is most persuasive when there is institutional sponsorship through the condition of professional learning, and the prospect of reframing courses for the most suitable blend must be mandatory (Islam, 2021; Rossiou & Mavridou, 2021; Shahriar et al., 2021; Singh et al., 2021; Tasnim, 2021; Tsang et al., 2021).

9 Conclusion

There was a continued appeal for online and digital learning during the COVID-19 time in Bangladesh. The diverse experiments with collaborative learning, innovative learning, cooperative learning and experimental learning have revealed that by embracing available, easy-going and inexpensive technologies in education and by incorporating physical and online activities while formulating the learning goals and evaluating the anticipated learning outputs of the learners, more unexplored and valuable methods of learning experiences need to be anticipated. Besides, a blended learning approach might significantly help educational institutes, such as universities, when our society faces a crisis like a pandemic.

Though students' relative and positive perceptions about face-to-face (F2F) and blended learning in periods when COVID-19 pandemic appeared are still rising and developing, financially, blended learning is perceived as an alternative to traditional F2F learning and teaching more positively during the COVID-19 pandemic among students and private universities. However, F2F prefers to be blended when COVID-19 is not an issue. F2F learning is observed more positively than blended learning because students feel there are limitations to blended learning in terms of interactions with the instructors, teamwork, peer assessment and engagement, class participation and the ability to question technical information and skills.

In a country like Bangladesh, the challenges mentioned in this article to meet the needs of a curricular achievement blended learning approach may not work. Consequently, before arranging particular blended activities into exercise, a university must take into concern the multiple variables of blended learning management and experience, for example, teachers' and students' social, cultural and economic backgrounds, age range, access to technological infrastructure, the technology readiness on the part of the universities and the associated issues, time and hours. Besides, the systematic research on integrating technology in teaching and learning in universities may provide policy implementation, capacity building and appropriate low-cost technologies, which can work as the harbinger of change. Through continuous research, online/blended learning can be a suitable road map that could

be prepared. A quality online/blended learning approach could be planned/invented to benefit both the teachers and learners enthusiastically coping with any crisis at present and in the future.

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Chapter 12

Technological Shock in Digital Transformation of Higher Education in Bangladesh



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Abstract The outbreak of the novel coronavirus has acutely disrupted the higher education system in Bangladesh. Its erratic nature forced the government of Bangladesh to close all the educational institutions on March 18, 2020. A digital transformation in the education industry facilitated education during this prolonged lockdown. Undoubtedly, this dramatic change introduced both teachers and students to unexpected challenges. This study aimed to unveil the challenges the students and teachers faced and focus on their overall experience adapting to the digital transformation in higher education during COVID-19. This study employed the semistructured interview with open-ended questions using qualitative content analysis and thematic analysis. The interview was conducted with two focused groups, including 109 students and 49 teachers from seven private universities in Bangladesh. The result shows that most of the respondents mainly struggled with lack of technical preparation, unavailability of resources, poor infrastructure of the Internet, and additional costs associated with e-learning.

Keywords Digital transformation · Higher education institutions · Online learning · Technology shocks

1 Introduction

The era of the twenty-first century is well recognized for the continuous development in information and communication technology. This rapid change breaks the traditional approach by adapting modern technology to transform the structures with innovative strategies in almost every area of the digital age. This reorganization

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*,
https://doi.org/10.1007/978-981-19-7299-7_12

of the technologies, processes, and business models is known as digital transformation (Rof et al., 2020). It affects different sectors, such as businesses (Rogers, 2016) and industry (Akdil et al., 2018). Undoubtedly, education cannot remain insensitive to these developments and changes. Digital and Internet technologies have been frequently recognized as the most effective way to connect the students of the twenty-first century to learning and teaching (Howard & Mozejko, 2021). According to the study, there are two types of digital solutions in the classroom: *hardware-based* and *software-based* (Kirkwood, 2009). Hardware-based solutions include tablets, smartphones, laptops, computers, and interactive SMART boards to improve learning. Software-based solutions can promote student collaboration or speed up the learning process.

Moreover, learning management systems and online courses are also prominent phenomena in the education of the modern economy. Digital tools and approaches used in educational settings are developing every moment. Therefore, the digital transformation in education is inevitable because of the increasing technology in everyday life (Marks et al., 2020).

The sudden emergence of COVID-19 and its rapid worldwide spread, causing it to become a pandemic in months, has given countries, governments, and general people little time to understand and tackle it. Each sector has been affected by the nationwide shutdowns. The education sector has been hit hard. The sudden closure of all education institutions has left the education authorities, institutions, staff, faculty, and students unprepared to deal with the unique situation. Over time, everyone found ways to adapt to the problem, including digital transformation to minimize face-to-face contact and social gatherings. However, with this transformation comes the shock of using technology in our everyday lives. Therefore, to help us be better prepared to tackle such natural calamities in the future, numerous studies need to be conducted on every aspect of this broad issue. As such, we are conducting qualitative research on the technological shock of digital transformation in the higher education sector of Bangladesh.

In Bangladesh, the digital transformation in the education sector came into force essentially from March 2020. Thus, education changed from a traditional face-to-face learning system to online classes. However, this transformation was not easy. Remote education and work from home (WFH) were ineffective solutions during the first phase of COVID-19 in Bangladesh since these practices were not widely standard before COVID-19 hit the country. Therefore, the sudden implementation of online education and WFH introduced new challenges for students and teachers.

According to newspaper reports and press releases by the government, the first case of COVID-19 was confirmed on March 8, 2020. Then on March 16th, to prevent the spread of the virus, the education ministry ordered the shutdown of all education institutions until further notice. Over the month, all sectors were closed, including factories, and this continued until May 31st. From September 2020, all restrictions were lifted as COVID-19-related infections and deaths were low, and educational institutions remained shut. From February 2021, the vaccination program began. In March, the second wave engulfed the country, causing more lockdowns over the next few months of 2021, most restrictions were lifted, and most

educational institutions were conducting online classes (Better Work). According to the WHO, 1,588,807 infections and 28,090 coronavirus-related deaths have been reported since the pandemic began.

The onslaught of COVID-19, its effects on people's lives, the sudden restriction of physical movement, the subsequent adaptation, and digital transformation in many sectors call for significant research. As this is a relatively new phenomenon, available research and publications are not sufficient, and as a result, we feel there is a research gap in this area. This study aims to identify the factors that determine and influence digital transformation's technological shocks in Bangladesh's higher education. The specific objectives are as follows: to identify technological shocks, to identify the nature of technological shocks derived in Bangladesh during the COVID-19 pandemic, and to understand the digital transformation situation in Bangladesh's higher education sector.

This research work tries to provide insight into how faculty members (teachers) and learners (students) at the tertiary level of education in Bangladesh have prepared themselves in handling the pedagogical shift, what kind of experiences they have had while adapting themselves to the use of digital devices for accomplishing teaching and learning during COVID-19, what kind of challenges they have had to come across, and how various limitations have brought impact on their teaching and learning processes. Since effective digital transformation in education requires all the people involved in the process to understand and adapt and to design an education system that is still dominated by traditional understanding (Marks et al., 2020), the concerned authorities related to the higher education system in Bangladesh can initiate other effective policies based on this study to make the digitalization process more effective.

2 COVID-19 and Digital Transformation of Education in Bangladesh

Digital transformation has occurred across all sectors since the fourth Industrial Revolution began. EDUCAUSE defines digital transformation as optimizing an institution's operations, strategic direction, and value proposition through collaborative culture, workforce, and technology shifts (Bogdandy et al., 2020).

Soon after the WHO (World Health Organization) declared COVID-19 a pandemic in March 2020, the government of Bangladesh immediately announced that all educational institutions in the country to be closed from March 17, 2020, till March 31, 2020, as a precautionary measure. However, the closure was repeatedly extended as the infection and death rate from COVID-19 increased alarmingly (Mamun, 2020). Many private universities began online classes after the University Grants Commission of Bangladesh (UGC) allowed them to do so. This sudden shift to a digital base called for significant changes in all aspects of education – class lectures, exams, communication tools, assessment methods, etc.

2.1 Technological Shock of Digital Transformation

Due to the COVID-19 pandemic, the rapid digital transformation is forcing higher education institutions to change their working and learning culture. The use of technology in education is relatively new in Bangladesh compared to developed countries. Therefore, the sudden and extensive digital leap we have had to take in our work, education, and everyday lives has led to technological shock. We use the word technological shock to refer to the unpreparedness of our education system and its stakeholders. Studies reveal several factors for this shock (Khatri, 2020) as follows:

2.2 Lack of Infrastructure

Bangladesh is a rising economy, and while it has progressed in many sectors, there is insufficient infrastructure to adopt digital transformation in all spheres of life, including the education sector. Four mobile operators and fiber-based Internet service providers (ISP) (Shamsuddin, 2018) primarily serve Internet consumers. The introduction of 4G has increased the nationwide backhaul transmission capacity requirement, but the current NTTN (National Telecom Transmission Network) operators are not equipped to manage this requirement. The basic telecom infrastructure needs to be strengthened by utilizing robust optical fiber transmission networks. One of the significant problems digital transformation faces is Internet connectivity consistency and the associated inflated cost.

2.3 Lack of Resources

At the user level, the socioeconomic status of end users determines their access to technical resources such as the Internet, laptops, smartphones, and other devices required for online education. Moreover, many families suffered a monetary crisis due to job loss or salary cuts, making it impossible for many students to continue their studies (Ramij & Sultana, 2020).

2.4 Lack of Training and Skills

According to research, many universities do not provide faculty members with sufficient technical resources and assistance to conduct successful online classes (Becker et al., 2021). Also, students are left on their own to learn how to use digital platforms and tools. It is a new area for everyone, and a lack of proper training leads to a lack of skills.

2.5 *Psychological Barrier*

Although the lives of today's youth are entwined with social media, smartphones, and Internet use, it does not automatically make it easy for them to adapt to online education. In a flash, their education has been transformed from traditional classroom practice to a remote, digitalized one, where they must master digital tools to participate in their education. Students face psychological barriers in doing online classes. According to the study, students feel that complex topics are challenging to discuss and are not used to self-learning. Also, introverts are hesitant to turn on their camera in class (Popova et al., 2020). For the faculty, psychological barriers include confusion about student response as immediate feedback is not always received and whether they are being listened to properly. For older faculty especially, there is fear of learning the new skills necessary to adapt.

3 Method

This is a qualitative study in the context of Bangladesh based on both primary and secondary data. The study period is covered from May 2020 to December 2021. All Bangladesh public and private university classes were conducted online during this time frame. To facilitate this, Bangladesh Research and Education Network (BdREN) offered its corporate license for Zoom, a videoconferencing platform free to faculties of all public and private universities, which overcame the limitations of meeting time duration and the number of participants.

Data were collected from seven (7) departments of Bangladesh's seven (7) private universities. At least two and a maximum of three departments from each university were covered. Out of these seven universities, two (2) are from the top rank, three (3) are from the mid-rank, and two (2) are from comparatively low-ranked universities as per the ratings of the various local agencies. Since most Bangladeshi universities do not qualify for international rankings (such as QS or THE), ratings of several local agencies such as StudyBarta.com and UniRank were used while selecting universities as a sample. Data were collected from two categories of focus group discussions (FGDs): the learners (i.e., the students) and the faculties (i.e., the teachers).

Each FGD consisted of 6 or 08 or 10 students and 3 or 05 or 06 faculties; departments include Business Administration (BBA and MBA programs), Computer Science and Engineering (BSc honors), Electrical and Computer Science Engineering (BSc honors), Civil Engineering, Economics (BSS honors), English (BA honors), and Environmental Science and Management (BSc honors). In response to the respondents' requests, the names of universities, faculty members, and students have not been mentioned anywhere in this study.

Qualitative content analysis and thematic analysis were used to collect and present the data. In this study, the narrative discussion was used since it includes the analysis of contents from various sources, such as interviews of respondents and observations from the field. Semistructured interviews along with open-ended questions were applied for collecting data. Two sets of questions used to collect data from two separate focus groups have been attached in the [Appendix](#) of this study.

Online Zoom and face-to-face meetings were arranged to receive primary data from the respondents. Moreover, since all the four (4) authors are teaching at both undergraduate and graduate levels, it was an excellent opportunity to incorporate their observations into the study findings. Secondary data were collected from literature reviews like published books, journal articles, newspaper reports and articles, and online publications.

4 Findings

4.1 Demography of the Respondents (Tables 12.1 and 12.2)

Table 12.1 Demography of focus groups (learners)

Category of university	Departments covered along with several participants						
	School of business/ Business administration	EEE	Environmental science and management	ECE/ CSE	English	Civil engineering	Economics
<i>Top-ranked university</i>							
University-1	6	8	–	–	–	–	–
University-2	10	–	6	–	–	–	–
<i>Mid-ranked university</i>							
University-1	10	–	–	10	6	–	–
University-2	8	–	–	–	–	–	8
University-3	8	–	–	6	–	–	–
<i>Lower-ranked university</i>							
University-1	10	–	–	–	7	–	–
University-2	–	–	–	–	–	6	–
Total no. of participants	= 52	= 8	= 6	=16	=13	= 6	= 8

Table 12.2 Demography of focus groups (faculty members)

Category of university	Departments covered along with several participants						
	School of business/ Business administration	EEE	Environmental science and management	ECE/ CSE	English	Civil engineering	Economics
<i>Top-ranked university</i>							
University-1	5	3	–	–	–	–	–
University-2	3	–	3	–	–	–	–
<i>Mid-ranked university</i>							
University-1	4	–	–	4	2	–	–
University-2	3	–	–	–	–	–	2
University-3	03	–	–	02	–	–	–
<i>Lower-ranked university</i>							
University-1	4	–	–	–	5	–	–
University-2						6	
Total no. of participants	=22	= 3	= 3	= 6	= 7	= 6	= 2

4.2 Focus Group Findings

As mentioned in the Method section, seven different departments were covered from seven private universities in Bangladesh. Two various focus groups (i.e., students and faculty members) were interviewed from each university. Accordingly, information received based on FGDs is articulated under three major sections:

- (A) Findings from top-ranked universities
- (B) Findings from mid-ranked universities
- (C) Findings from comparatively lower-ranked universities

Each section consists of findings from two focus groups: the learners and the faculty members (Tables 12.3 and 12.4).

4.2.1 Focus Group: Student Cohort

- (i) Altogether, (30 + 56 + 23) 109 students from different universities (top-ranked, mid-ranked, and lower-ranked universities) were interviewed. Out of 109 students, 43%, 70%, and 37% of students correspondingly from three different categories (based on ranking) agreed that the directive to initiate online classes from May 2020 was a timely decision as they were insecure about their academic progress, while the rest 57%, 30%, and 63% from the respective categories complained about the decision. Most participants said that the decision was too sudden, and they did not get enough time to prepare themselves for an unusual experience. Some added that they struggled with the immediate

Table 12.3 Major statements received from focus groups and the creation of key themes

Theme 1: Acknowledgement of pandemic	<p>We could assume in the mid of March 2020 that a decision on nationwide lockdown may arise. Therefore, we were mentally prepared to accept this decision and add to this as well. Finally, on march 08, 2020, Govt. of Bangladesh declared that one Covid-affected patient had been detected in the country (FG3, S10, top-ranked university)</p>
Theme 2: Uncertainty	<p>We were mentally prepared that at any moment, a decision may come out from the Govt. about a countrywide lockdown because we had been informed through global news that the number of Covid-affected patients was increasing in our neighboring countries. Therefore, we were at a high risk of COVID-19 during the early days of March 2020. After paying attention to the suggestions made by medical practitioners and social scientists, on March-18, 2020, Govt. enforced a nationwide lockdown (FG1, F5, top-ranked university)</p> <p>The closure of educational institutions and their continuation of it left me insecure about my academic progress (FG4, S2, top-ranked university)</p> <p>Our second midterm was supposed to start on 23rd March 2020, but it was postponed. As per the government decision about resting the physical classes, our university rescheduled the exam several times in the following 2 months (FG1, S9, mid-ranked university)</p> <p>After waiting for almost 2 months, when I got the instruction from the university to join online classes, I was clueless and did not know where to start (FG3, S1, low-ranked university)</p> <p>I returned to my hometown, leaving all my study materials in the hostel. Then came the announcement of moving towards online classes. I was utterly devastated, thinking about how I could bring all my study materials and start joining online courses as soon as possible (FG6, S6, mid-ranked university)</p> <p>Moreover, some groups comparatively were at ease with exploring online education. Being a tech lover, I was excited to experience the new learning method (FG2, S5, top-ranked university)</p> <p>Our university was halfway through the semester when the announcement of closure came. I was worried about accomplishing the courses' syllabus for the running semester (FG3, F1, top-ranked university)</p> <p>We were already stressing about our life and job security, and the following instruction to move towards online education added another shock for me. I did not know how to start (FG1, F2, mid-ranked university)</p> <p>Even after starting online classes, I was disturbed and insecure about my job and salary, as I received only 50% of my salary for several months (FG3, F4, low-ranked university)</p> <p>Moreover, some groups emphasized the positive side of the decision. The future of our country immensely rests on the students, and we cannot take risks with them. So, I think the government made a timely decision (FG1, F5, top-ranked university)</p>
Theme 3: Transformation into digitalization	<p>The transformation from offline mode to online mode was not an easy task at all. It was threatening and time-consuming since many did not have laptops, personal computers, or smartphones. Moreover, we were familiar with various online platforms until COVID-19 was hit over the country (FG1, S10, mid-ranked university)</p> <p>It took a short time for us to adapt to this digitalization. Since our organizations arranged training to the r us, and the respective offices' IT department was reasonably supportive, we did not face many difficulties in the transformation process (FG6, F3, mid-ranked university)</p>

Theme 4: Adaptation with advanced technology

Our teachers created messenger groups for courses to reduce the communication gap. We were guided to use a specific platform named “Zoom” our faculty members oriented us with the new venue in the first week, which made things easier. Besides, the class recordings were always available (FG1, S3, top-ranked university)

We were advised to use different platforms our teachers preferred, so adjusting (FG7, S1, mid-ranked university) was tough. Though I had a broadband connection at home, the supply was never guaranteed, so I always had to keep mobile data for backup (FG2, S4, mid-ranked university)

I stayed in a rural area where broadband service was not available, so the only option I had was to buy mobile data (FG3, S7, top-ranked university)

I could not attend classes in the first few weeks as I did not have android phones or computers (FG2, S7, low-ranked university)

The online theory classes were convincing. But despite the efforts of the teachers, quality degraded in mathematical courses (FG2, S9, mid-ranked university)

In the beginning, we had hurdles in lab classes as we did not have the required software; however, later, the IT department allowed us to connect the computers in the university lab via VPN (virtual private network) (FG2, S6, top-ranked university)

How can I learn the intense reactions in the chemistry lab without performing it? (FG4, S2, top-ranked university)

As we gave open-book exams, the questions used to be analytical. Understanding the questions and answering according to the teachers’ expectations within the specified time was extremely tough (FG1, S4, low-ranked university)

Once, while submitting the script in Google docs, I lost the data for some technical issues, which was traumatic (FG6, S6, mid-ranked university)

Right after the declaration to start online classes, a special committee was formed by the IT department, including the administrative body, to analyze available and easy-to-use online platforms that can be applied in teaching in Bangladesh. Finally, based on their study and the directions from the government through the University Grants Commission (UGC), the authority arranged a trial on the Zoom platform. They trained us by a step step-by-step approach (FG3, F2, top-ranked university)

Our university arranged online training to educate us about digital learning platforms. However, I did not find it compelling enough (FG5, F1, mid-ranked university)

I have always been indulgent in technology and managed to have good Internet connections throughout the time (FG1, F3, top-ranked university)

To tackle such network supply uncertainty, I always ensured backup with mobile data (FG2, F4, low-ranked universities)

In terms of teaching descriptive courses, the online platform was quite fascinating. Lack of interruption from the class noise allowed us to teach fruitfully (FG4, F1, mid-ranked university)

I used different approaches such as presenting on a writing pad, using a whiteboard, etc. but it seemed none of these was good enough to teach mathematical courses (FG7, F1, mid-ranked university)

As I did not have any lab equipment, I only taught theories and showed tutorials on YouTube. Besides, the students did not have to attempt any practical in the exams, only gave written exams. And I find it inappropriate (FG4, F2, top-ranked university)

Table 12.3 (continued)

Theme 5: Additional cost incurred	<p>Daily purchasing mobile data was expensive (FG6, S6, mid-ranked university)</p> <p>After losing my exam data due to load shedding, I bought a UPS the next day (FG, S2, top-ranked university)</p> <p>We had done many assignments during this period which slowed down my laptop. Hence, I had to pay for the servicing (FG5, S7, mid-ranked university)</p> <p>I had to buy an android phone to attend the online classes and exams (FG3, S5, low-ranked university)</p> <p>I belong to a lower-middle-class family where my father is the only earning person. In such a situation, asking for extra money to buy mobile data and other required materials was pathetic (FG3, S1, low-ranked university)</p>
Theme 6: Work-family conflict	<p>I purchased a good quality webcam and a real whiteboard to teach particularly mathematical courses (FG2, F3, mid-ranked university)</p> <p>My laptop was broken. I had to get it fixed to take online classes. Otherwise, I wouldn't have. In such a situation when the economy was already down, these additional costs were troublesome (FG1, F4, low-ranked university)</p> <p>I take mathematical courses, so I had invested heavily to purchase a good quality webcam, Wacom digital writing pad, and a whiteboard though these devices did not help much (FG2, F2, top-ranked university)</p> <p>We sometimes lived in a financial crisis since our parents' salaries were temporarily reduced, or some of them were sacked from their job during the pandemic. All of these put pressure on us to quit studying and start earning for the family (FG1, S10, low-ranked university)</p> <p>Often, we were stuck in online classes and work-from-home jobs. Our salaries were reduced temporarily, and our jobs were in vulnerable conditions. Sometimes, it took too long time from our personal lives, which occasionally negatively impacted our family lives (FG1, F10, low-ranked university)</p>
Theme 7: Adaptation with new normal	<p>New variants of COVID-19 are being discovered frequently. However, most of us have received two doses of Covid-vaccine. Nowadays, we are trying to cope with this "new Normal" age (FG3, S8, mid-ranked university)</p> <p>Since the Bangladesh Govt. does not want to go for another lockdown countrywide as it limits transactions and slows down the economy, we, too, are respectful towards this decision. We are trying to live following this new normal trend (FG1, F5, top-ranked university)</p>

Table 12.4 Some crucial findings of the impact of the COVID-19 pandemic on different aspects of students' learning

Sl. no	Area of concern	Category of the university					
		<i>Top-ranked university</i>		<i>Mid-ranked university</i>		<i>Low-ranked university</i>	
		Agree	Disagree	Agree	Disagree	Agree	Disagree
01.	The timing of making decisions by the government regarding launching and carrying out online education was appropriate.	43%	57%	70%	30%	37%	63%
02.	Benefits online studies brought to them (in terms of academics and others) during COVID-19:						
	Time savings	73%	27%	80%	20%	87%	13%
	Free from traffic congestion	100%	00%	100%	00%	100%	00%
	The opportunity of creating more interaction with faculties	53%	47%	71%	29%	70%	30%
	Free from memory-based examinations	69%	31%	61%	39%	72%	28%
03.	Problems digital transformation brought to them:						
	Academic uncertainty	00%	100%	13%	87%	26%	74%
	Unavailability of required resources (Internet, mobile data, smartphone, laptop/desktop)	14%	86%	45%	55%	52%	48%
	Financial threats	12%	88%	20%	80%	65%	35%
	Additional costs incurred	100%	00%	100%	00%	100%	00%
04.	Online education should be continued even in this "new-normal" age	90%	10%	90%	10%	34%	66%

arrangements of required resources to join the online classes. Therefore, they stated that the government could have launched the online classes in the following semester, i.e., summer 2020.

- (ii) The respondents shared varied opinions regarding using digital platforms to connect with online classes. Of the 109 students, 23% were explicitly guided to use "Zoom," their universities instructed 15% to use "Google Classroom," and the remaining 62% of students used both platforms per their faculties' instruction. Initially, 22% of students had difficulty connecting and adapting to these platforms. Nevertheless, all the students confirmed that slowly but surely, they had learned and adopted these digital learning platforms by receiving continuous support from their teachers and the IT department of their respective universities.
- (iii) A mixed opinion was derived from the students regarding online education's effectiveness/feasibility/convenience in the curriculum of different courses. Of

Table 12.5 Some crucial findings of the impact of the COVID-19 pandemic on the different aspects of teaching

Sl. no	Area of concern	Category of the university					
		Top-ranked university		Mid-ranked university		Low-ranked university	
		Agree	Disagree	Agree	Disagree	Agree	Disagree
01.	The timing of making decisions by the government regarding launching and carrying out online education was appropriate	82%	18%	80%	20%	90%	10%
02.	Benefits online studies brought to them (in terms of academics and others) during COVID-19:						
	Time savings	64%	36%	80%	20%	75%	25%
	Free from traffic congestion	100%	00%	100%	00%	100%	00%
	The opportunity of creating more interaction with students	65%	35%	20%	80%	30%	70%
	Free from memory-based examinations	73%	27%	40%	60%	60%	40%
03.	Problems digital transformation brought to them:						
	Low job security	60%	40%	55%	45%	60%	40%
	Financial threats	15%	85%	75%	25%	65%	35%
	Additional costs incurred	100%	00%	100%	00%	100%	00%
04.	Online education should be continued even in this “new-normal” age	86%	14%	100%	00%	80%	20%

the 109 students, 76% confirmed that online platforms are convenient and time-effective for learning theoretical approaches and attending academic exams. However, 82% of the 109 participants vehemently opposed and stated that online education is unsuitable for learning mathematical methods and practical lab activities (Table 12.5).

4.2.2 Focus Group: Academic Staff Cohort

- (i) In total, (14 + 20 + 15) 49 faculty members from different universities (top-ranked, mid-ranked, and lower-ranked universities) were interviewed. Out of 49 faculties, 18%, 20%, and 10% of faculties, respectively, from three different categories (based on ranking) expressed disagreement about the timing of launching and continuing online classes from May 2020. Some of them believed that the government could have implemented this decision on the following semester, i.e., from summer 2020. Another group stated they had anticipated imposing a lockdown across the country. Therefore, they were mentally

- prepared to adapt to all sorts of digitalization in the academic arena. Consequently, they expected that launching and continuing online education from the government should have been implemented earlier. It could have been at the end of March 2020 or the beginning of April 2020 instead of May 2020.
- (ii) A mixed opinion was derived from the faculties regarding using digital platforms to conduct and carry out online education. Of the respondents, 51% used Zoom Meeting, especially the connection provided to them named BdREN. In contrast, the remaining 49% used “Google Classroom” or “Google Meet” platforms in conducting online classes and exams.
 - (iii) All the respondents expressed that adapting to these digital platforms took a short time. Furthermore, whenever they faced any sort of problems, they could contact the IT department of their university. Besides these, 41% of participants opined that their organizations arranged training for them at the beginning of digitalization on smoothly conducting classes using these digital platforms. The remaining 59% is split into two groups: one group expressed dissatisfaction with the arrangement of training by their employers, and another said that their organizations did not arrange any workshop on it at all.
 - (iv) Of the 49 faculties, 61% expressed that they were living in great uncertainty regarding the possibility of being affected by COVID-19, the reduction in job salary, or even being fired from their jobs. They added that the university authority should provide monthly incentives for arranging various physical facilities and logistics (like a laptop, smartphone, Internet connection, etc.) for at least the first 3/4 months of the pandemic.

4.3 Thematic Analysis of the Study

Based on the interview taken with the focused groups, the following factors have been derived that are responsible for a technological shock (Fig. 12.1).

4.3.1 Acknowledgment of the Pandemic

The first COVID-19-affected patient in Bangladesh was identified and officially declared by the government on March 8, 2020 (Moni, 2020). Soon after, the number of COVID-19-affected patients increased alarmingly, causing medical practitioners and social scientists to urge the government to enforce a lockdown across the country. Consequently, the government announced that the country was facing high risks of a pandemic from COVID-19 and implemented a nationwide lockdown (Prothom Alo, 2021).

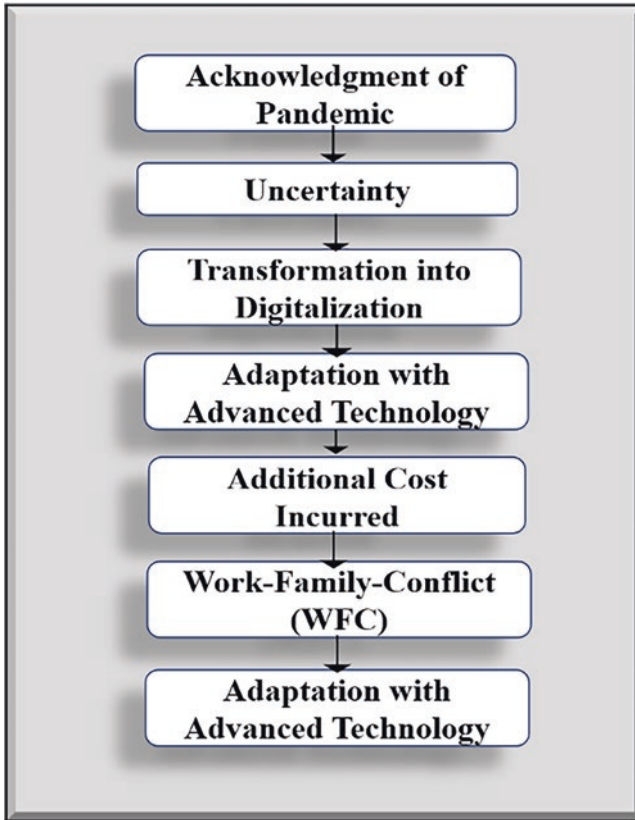


Fig. 12.1 Conceptual model

4.3.2 Uncertainty

In the initial phase of the COVID-19 lockdown in Bangladesh, there was panic among the public for fear of the deadly virus and extreme uncertainty regarding job security. Before the lockdown, the educational institutions were suddenly closed on March 18, 2020 (The Daily Star, 2022) and remained closed until September 2021 (The Business Standard, 2021). At the first announcement of the closure, some universities were halfway through the semester or academic term. The entire higher education industry was unsure about the future and was left in a state of upheaval. Finally, in the middle of May, an instruction came from the UGC that private universities could take the initiatives to continue their classes and exams online from then onwards. Following this notice, many universities started to conduct virtual classes, but this was a monumental challenge for most instructors because they had to use different teaching methods and media they had never used. Initially, they were extremely nervous and lacked confidence in teaching online. Students were no exception either. It was a completely new experience to switch to online classes.

Consequently, both students and instructors were insecure and doubtful about the new way of learning.

4.3.3 Transformation into Digitalization

In 2008, the Bangladesh government established “Digital Bangladesh.” In 2014, the government defined goals for upgrading the country’s status from developing to developed by 2050. The four (4) pillars of “Digital Bangladesh” were specified: Digital Government, Human Resource Development, IT Industry promotion, and Connecting Citizens (ICT Department, Bangladesh, 2019).

Although various public and private companies had begun adopting digitalization, the transformation in higher education in Bangladesh was minimal before COVID-19 hit. However, when in March 2020, the UGC declared that private universities could resume classes in online mode, this added an extra layer to the digitalization process countrywide (Dhaka Tribune, 2020).

4.3.4 Adaptation with Advanced Technology

The sudden need to switch from the conventional learning method to online learning has left many people in higher academia in Bangladesh struggling to adapt. In the beginning, instructors and students suffered from a lack of awareness of educational technologies. However, many universities arranged online training on the usage of those advanced technologies to educate the instructors, who, in turn, helped students to adapt. Apart from this, the unavailability of essential resources, such as devices, access to the Internet, uninterrupted Internet connection, and high-speed network, created a constant crisis to conduct online classes smoothly. As a result, it took time to adapt to the massive changes, but now, they are in a better place than before.

4.3.5 Additional Cost Incurred

The pandemic has hit the economy hard. It has led most people to experience a drop in income, and many have even lost their jobs. In such circumstances, another major setback for effectively conducting online classes in Bangladesh was the inability to afford the required resources. Teachers and students had to bear the additional cost of purchasing necessary gadgets, high-speed Internet, and mobile data to work and attend online courses. Students, who could not afford the burden of these extra expenditures, simply had no choice but to drop out of their study.

4.3.6 Work-Family Conflict (WFC)

During the extensive lockdown from 2020 to 2021, faculty members of various private universities had to go through different levels of extra work pressure. In most of the cases, this work pressure was relatively high. The findings of this study show that the first two, three, or even four semesters that were run online during COVID-19 brought unlimited work pressure for many of the faculty members as no office hours were maintained. Moreover, many mid-ranked and comparatively low-ranked private universities became irregular in paying their faculties and staff; some adopted a temporarily reduced salary policy. These factors (unlimited work pressure, lack of job security, reduced salary) brought serious work-family conflict among many faculty members.

Moreover, our study shows that many students were uncertain about continuing their studies since their jobs or parents' jobs were under threat during the pandemic. Some students had to drop out of their ongoing classes, while many had joined work for their livelihood. All these created work-family conflicts in the students' lives too.

4.3.7 Adaptation with the New Normal

Although COVID-19-related deaths and infections have reduced significantly in the country over the last couple of months, and citizens are being administered two doses of the COVID-19 vaccine, new cases are still being recorded daily. Moreover, new variants of COVID-19 (e.g., Delta, Omicron, etc.) are being discovered frequently (United Nations, 2021). Given the situation, scientists, medical practitioners, and other groups have predicted that the risk of COVID-19 will not be erased. Instead, people need to adapt to this (Abbacan-Tuguic, 2021). The Bangladesh government does not want to go for another lockdown countrywide since it limits transactions and slows down the economy. All of these indicate that citizens must adapt to this changing environment, denoted by the "New Normal" (Prothom Alo, 2021).

5 Conclusion

Although digitalization in higher education in Bangladesh has brought a suitable number of positive changes during the outbreak of COVID-19, its negative impacts are still soaring in the context of Bangladesh. Higher education is highly focused on the specialization of various disciplines; therefore, it encompasses practical classes, group discussions, solving real-life cases, field visits, lab tests, and so on. Replacement of these diverse aspects on a long-term basis cannot bring satisfactory results, as evident in this research work. Implementing online education is costly for a developing country like Bangladesh. Prolonged use of computers or smartphones is dangerous and is associated with significantly higher risks of heart disease, diabetes, obesity, cancer, depression, and muscle and joint problems (Mollah & Parvin,

2021). Moreover, in the name of online classes, or work-from-home settings, universities often keep faculties engaged in official work for unlimited time or on weekends. Therefore, policymakers in the education sector may consider these implications and develop strategies to address the problems.

Appendix

Our focused group discussion with the learner groups (i.e., students):

1. Do you think the timing of making decisions by the government regarding launching and carrying out online education was appropriate? Why or why not? Please specify.
2. What are the modes/mediums that your teachers used in reaching you over online classes?
3. What benefits do online studies bring you (in terms of academics and others) during COVID-19? In terms of:
 - (a) Time savings
 - (b) Free from traffic congestion
 - (c) The opportunity of creating more interaction with faculties
 - (d) Free from memory-based examinations
 - (e) Others (if any)
4. What type of problems did digital transformation bring to you during COVID-19? In terms of:
 - (a) Academic uncertainty
 - (b) Free from traffic congestion
 - (c) Unavailability of required resources (Internet, mobile data, smartphone, laptop/desktop)
 - (d) Financial threats
 - (e) Additional costs incurred
5. Did you face any financial or nonfinancial threats in digital transformation during COVID-19?
6. Do you think online education should be continued even in this “new-normal” age? Why or why not? Please specify.

Our focused group discussion with the faculty members (i.e., teachers):

1. Do you think the timing of making decisions by the government regarding launching and carrying out online education was appropriate? Why or why not? Please specify.
2. What are the modes/mediums that you used in connecting with your students during COVID-19 to conduct online discussions and arrange online examinations?

3. What benefits do online studies bring you (in terms of academics and others) during COVID-19? In terms of:
 - (a) Time savings
 - (b) Free from traffic congestion
 - (c) The opportunity of creating more interaction with students
 - (d) Free from memory-based examinations
 - (e) Others (if any)
4. What type of problems does digital transformation bring you (in terms of academics and others) during COVID-19? In terms of:
 - (a) Low job security
 - (b) Financial threats
 - (c) Additional costs incurred
5. Did you face any financial or nonfinancial threats in digital transformation during COVID-19? For example:
 - (a) It took too much time from your personal life to adapt and carry out digital transformation.
 - (b) Your family may have asked you to quit the job.
 - (c) Others (if any).
6. Do you want online education should be continued even in this “new-normal” age? Why or why not? Please specify.

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Part III
Leadership in Higher Education

Chapter 13

The Leadership in Tackling the Unforeseen Consequences of the Covid-19 Pandemic: Who Is the Emergent Leader?



Deniz Palalar Alkan, Mustafa F. Özbilgin, and Rifat Kamasak

Abstract This study explores the emergent leadership behaviours in the Covid-19 pandemic and finds that emergent leaders among post-millennials value success, knowledge and freedom over conservatism and traditionalism. Turkey, considered a middle-aged country in terms of age distribution, provides an adequate context to examine and explore the post-millennial perceptions of emergent leadership. To examine emergent leadership during the Covid-19 pandemic in higher education in Turkey, we utilised a sequential explanatory mixed-methods design that included collecting, analysing and implementing quantitative and qualitative data to understand the emergent leaders' personality and behavioural patterns among 19 distinctive groups. Turkey is a country where authoritarian and paternalistic leadership approaches are widely idealised. Counterintuitively, our findings show that Turkey's leadership emergence gives signs of an inclusive turn. As a generational and cohort issue, the post-millennial generation appears to demand greater flexibility, security, fairness and value diversity and inclusivity as emergent leader behaviours. Our findings align with the literature, showing the significance of inclusion as a value in leadership emergence, even in a nation such as Turkey, which lacks regulations, discourses and interventions that promote equality, diversity and inclusion.

Keywords Leadership · Covid-19 · Pandemic · Turkey · Equality · Diversity and inclusion

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1 Introduction

Leadership can be defined as influencing others to uphold a shared vision and achieve common goals (Yukl, 2006, p. 7). There has been a growing interest in the role of leadership in utilising dynamic, self-managed and horizontal teamwork to attain agility, competitiveness and effectiveness (Antonakis & Day, 2018; Gerpott et al., 2019). Emergent leadership refers to how a leader is identified and selected. The process of emergence often relates to the degree that an individual is perceived as leader-like by others, including peers in leaderless groups (Judge et al., 2002; Kaiser et al., 2008).

Since the novel coronavirus has induced various challenges for organisations globally, managing such unprecedented impacts calls for new insights in leadership as traditional models prove inadequate. As Kniffin et al. (2020) emphasised, aside from advancements in medicine, epidemiology and economics, leadership plays a pivotal role in minimising the adversity faced due to the global pandemic. Since leadership is related primarily to decision-making and resource allocation, the effectiveness of leaders' strategic choices substantially impacts society (Abrams et al., 2021). Moreover, digitisation has increased with the effect of Covid-19 and led to new work settings that have yielded the rise of emergent leadership across institutions. As organisations and institutions face high complexities and ambiguity, transitioning from a traditional hierarchical leadership model towards an emergent leadership model (Hanna et al., 2021) in which a leader-like influence without formal authority, is observed particularly in self-managed teams (Kezar & Holcombe, 2017; Lanaj & Hollenbeck, 2015).

Aycan et al. (2022) note that there are problems with leadership emergence based on worries about leadership effectiveness, demographic representation and competence (Torunoglu Tinay et al., 2022; World Economic Forum, 2015). For example, 77% of global organisations report poor leadership (Global Leadership Forecast, 2021). Therefore, leadership emergence is critical in addressing research's leadership gap. In particular, exploring leadership emergence among post-millennials could provide insights into the leadership pipeline and what needs to be done to tackle the leadership gap.

Higher education leadership is an essential factor due to its dual role in response to the Covid-19 pandemic, first as centres of scientific knowledge that can help overcome the challenge of the pandemic and, second, as vital institutions that affect a large number of communities such as students, academic staff, local economy and social and political life. As such, leadership in the HE context is vital in understanding how the national and regional actions could be shaped in response to the pandemic. However, early signs of HE leadership show a lack of convergence in collaborative efforts to combat the effects of the pandemic. Leadership responses in the sector remain patchy and divergent depending on national and local circumstances. The impact of the global pandemic on the HE context is immense. For example, educational institutions have experienced closures throughout various countries, fundamental cultural and organisational changes (Khan et al., 2021) and

budget cuts (Kruse et al., 2020). In addition, HE institutions need to comply with health protocols and regulations by embracing distance education to prevent crowds and reduce physical contact. Furthermore, there was a heightened adoption of digital platforms to conduct educational practices (Batez, 2021).

Exploring the pivotal shifts in leadership emergence in higher education may provide theoretical and practical benefits since the post-millennial generation will constitute 51% of the global workforce and 55% of the worldwide population by 2030 (Bloomberg, 2021). The post-millennial generation, known as digital natives, are uniquely diverse, raised in urban settings and highly multicultural (Prensky, 2001; Twenge, 2006). Furthermore, Turkey is considered a middle-aged country in terms of the age distribution of its population (Turkish Statistical Institute, 2020), providing an adequate context for examining and exploring the post-millennial perception of emergent leadership. Although an emic distinction exists in leadership approaches, understanding these nuances will help contribute to the existing body of research.

2 Theoretical Framework

2.1 Leadership Emergence

Leadership emergence has numerous definitions in the extant literature; however, the standard reference includes a leader “emerging” in a team setting with an informal authority (Côté et al., 2010; Lanaj & Hollenbeck, 2015). Scholars generally conceptualised emergent leaders through physical and dispositional characteristics or achievements due to specific competence (Paunova, 2015; Vongas & Al Hajj, 2015). Some theorists suggest that emergent leadership is based on attributes such as narcissistic behaviours (Nevicka et al., 2011), dominance (Cogliser et al., 2009; Lanaj & Hollenbeck, 2015; Paunonen et al., 2006; Smith & Foti, 1998) and empathy (Wolff et al., 2002). Other researchers have examined emergent leadership with a focus on team-level analysis and stated team dynamics (Hanna et al., 2021), communication frequency (Druskat & Pescosolido, 2006; Sudweeks & Simoff, 2005), virtuality (Hoch & Dulebohn, 2017; Yoo & Alavi, 2004) and shared concerns (Meliou et al., 2021).

Since emergent leadership does not possess a formal authority or status, individual perception is vital. Thus, emergent leadership scholars highlight the importance of the perceptions of others in describing who emerges informally as leaders (Cantor & Mischel, 1977; Hollander, 1992). For example, Yoo and Alavi (2004) indicated that initiating task-oriented communication, monitoring progress and giving appropriate feedback to improve team members’ performance and confidence lead to emergent leadership perceptions. Misiolok and Heckman (2005) also argued that providing direction and guidance are standard features of group emergent leader behavioural patterns. In addition, promotive and prohibitive voice

(McClellan et al., 2018), fulfilling the team's task and social needs (Ensari et al., 2011) and compassion (Melwani et al., 2012) are also aspects of identifying leadership emergence.

Although a vast amount of research is conducted on emerging leadership in the extant literature, much of it emanates from developed nations (DeRue et al., 2015; Hanna et al., 2021). As a country with a unique history of leadership in the Global South (Özbilgin, 2011), Turkey offers an ideal setting to explore leadership emergence. Various cross-cultural studies, including the GLOBE project, aim to assess the effect of cultural practices such as societal norms, beliefs and values on leadership effectiveness (House et al., 2014). From this perspective, exploring how leaders emerge in developing country contexts may advance our understanding of the leadership phenomenon. According to GLOBE, Turkey is part of the Middle Eastern cluster and is characterised by a unique cultural mosaic that blends East and West (Kabasakal & Bodur, 2007; Marcus et al., 2017). Despite most of the population holding Islamic beliefs, Turkey is a secular state with a cultural value system striving to transform and modernise its widely accepted traditional values (Bozkurt, 2018). Turkish society also has experienced shifts such as heightened internationalisation of the business and educational context (CoHE, 2015; Yildirim, 2017). Since these shifts may have an impact on the perception of leadership in the Turkish context, it is interesting to explore the leadership construct in Turkey, in which individuals exhibit paternalistic (Aycan, 2006), charismatic (Kabasakal, 1998), transformational (Bozkurt, 2001) and autocratic (Altan & Özpehlivan, 2019) leadership styles commonly. In parallel with the challenges of the global pandemic of Covid-19, societies and economies have faced unprecedented change. Therefore, describing key individual attributes related to emergent leadership during the pandemic may enhance our understanding of the concept. At the same time, it helps identify and predict the characteristics of who may emerge.

2.2 The Context of Higher Education to Explore Emergent Leadership in Turkey

Education is one of the vital mechanisms aligning individuals to the expectations of the practical context, and higher education institutions provide a basis to develop, transfer and maintain cultural values and increase belongingness to a society (Druguş & Landoy, 2014). One of the focuses of leadership education in higher education institutions is to transfer theoretical and practical knowledge of various leadership concepts. Leadership can be learned through traditional classroom sessions and by supporting the curriculum with numerous approaches, including capstone projects and simulations. With Covid-19, we have experienced increased social and interactive platforms in higher education institutions (Kamasak et al., 2021; Narayandas & Moldoveanu, 2019) to respond to the exacerbating challenges in an educational context. Moreover, in the recent EUA (European University Association) 2021

“Universities without Walls”, few keynote speakers emphasised the role of the leadership amid Covid-19 to tackle these challenges, and leadership education is an essential instrument in leadership development to prepare individuals for unprecedented crises. Today, most business schools offer leadership courses at various levels and parallel to developed nations; Turkish higher education institutions also promote leadership education to diffuse management thoughts and models. The Global Competitiveness Report by World Economic Forum (2020) stated that developing countries such as Turkey recently improved the inadequacy of skill sets of all graduates. This recent change is partially due to several initiatives, such as CoHE’s (Council of Higher Education, CoHE, 2021) quality assurance projects aiming to attain accountability and transparency and foster innovation in 160 higher education institutions (European Commission, 2021).

Bass (1990) stated that leadership education is imperative. Higher education institutions have a substantial impact in providing leadership development to help societies advance and assist individuals in obtaining the necessary competence and skill set for future employment opportunities (Connaughten et al., 2003). Additionally, one of the impacts of the Covid-19 pandemic on economies is an increasing trajectory to adopting the gig economy (Petriglieri et al., 2018) that promotes a freelance workforce. With the global pandemic’s effect, organisations have also expedited digitisation efforts. The digitisation efforts coupled with the adoption of the gig economy may create tremendous opportunities for individuals in developing countries as the gig economy expands the existing labour market (Forbes, 2017; Heeks, 2017). Thus, the advances in technology and social transformation may also generate paradigm shifts in leadership as modern organisations operate in increased complexity and uncertainty; a distinctive approach is required to influence and motivate individuals across boundaries. As the collaborative effort towards exploring leadership emergence during challenges of Covid-19 attracts attention, exploring these in the Turkish higher education context may provide valuable insights.

3 Method

To examine emergent leadership during the Covid-19 pandemic in higher education in Turkey, we have utilised a sequential explanatory mixed-methods design that included collecting, analysing and implementing both quantitative and qualitative data during the research process (Creswell, 2005). The mixed-methods approach was adopted to explore the emergent leaders’ expressed personality and behavioural patterns that distinguish them from their group members. When appropriately combined, quantitative and qualitative methods can provide a researcher with a broader and more comprehensive assessment of the research problem (Creswell & Plano Clark, 2011). The quantitative data were collected and analysed initially to inform the selection of individuals for qualitative data collection. Finally, the results of the quantitative and qualitative phases were fully consolidated in the research findings and discussion sections.

Phases	Procedure	Product
↓		
Quantitative data collection and data	Web-based survey (n=76) PMBC and Emergent Leader Rating Factor analysis SPSS 17 Software	Numeric data, descriptive statistics Factor analysis
↓		
Connecting quantitative and qualitative phases - Qualitative data collection	Researchers observed that the recordings lasted between 60-90 minutes for each group/case Documents of the leadership	Cases/groups (n=19) Text data (chatbox communication) Recording narratives
↓		
Qualitative data analysis	Coding and thematic analysis Within case and across-case theme development	Coding and thematic analysis, summative content Similar themes and categories
↓		
Integration of quantitative and qualitative results	Interpretation and explaining the results	Discussion and implications

Fig. 13.1 Design of the study

We adopted Creswell and Plano Clark’s (2011) mixed-methods evaluation criteria to describe the study results as authors express “results or interpretation sections in which the authors explicitly brought together the two databases” (p. 269). In this study, the quantitative data of a voting procedure and Likert-type scale to identify the emergent leader have provided a general assessment of the perceived emergent leaders. In addition, the qualitative data further explained the statistical results by exploring the participants’ perceived emergent leaders in more depth. The phases of mixed-methods design, its procedures and the outcomes are shown in Fig. 13.1.

3.1 Sample, Data Access and Data Collection

We examined emergent leadership among 19 distinctive groups of four participants attending a leadership course at a large university in Istanbul. The sample consisted of 24 female and 48 male participants with an average age of 22 years. In the 15-week leadership course, students engaged in an intensive theoretical learning curriculum regarding leadership theories. Due to the Covid-19 pandemic, the classes are fully remote, and participants communicate digitally. Before the assigned project, teams participated in various small task projects, so they were familiar with the digital platform for utilising breakout room tools and engaging in group activities. However, these were not the actual teams assembled for the study. We have used Internet-based videoconferencing platforms to conduct the study. In parallel to

Narayandas and Moldoveanu (2019), interactive platforms are efficient tools for exploring leadership in higher education since they promote small group interaction. Due to Covid-19 challenges, online group-based integrative case assignments were utilised to observe leadership emergence.

In this study, we have focused on an individual level of analysis to explore the leadership emergence in self-managed teams during the Covid-19 pandemic. The participants' selection process was based on their ability to provide the researchers with the requisite to examine emergent leadership in higher education. The choice of methodology and topic also influenced participant selection and helped establish the study's data credibility (Graneheim et al., 2017, p. 33). The participants' names were kept confidential and given anonymity and confidentiality. Before data collection, we obtained all the necessary permissions from the ethical committee. The goal of the project was to implement decisions such as (i) understanding the current challenge exhibited in the given case (case synopsis), (ii) executing decisions as laying out a rationale for firing or keeping the specific personnel and (iii) writing down a summary of objectives to regain success and attract new consumers in the marketplace. We distributed the case regarding the project before the group discussion, so the participants had sufficient time to discuss the assigned questions. The teams had to submit the final report on the day of the discussion period.

3.2 Data Analyses

We have distributed two questionnaires for each team for the data analyses, including a voting procedure and a Likert-type scale to identify the emergent leader personality assessment. Thus, each participant had to submit a personality questionnaire of Goldberg's (1992) short version of the Big Five personality (PMBC) to measure personality traits. The scale measures five distinctive features – extraversion, agreeableness, conscientiousness, emotional stability and openness to experience – and consists of 25 items. The short version of the scale is adopted since it is a commonly used scale that offers cost-efficiency to researchers while being less tiresome for the respondents. Scholars identify emergent leaders with various techniques in the literature, including administering a voting procedure (Baird, 1977), a Likert-based questionnaire (Lord et al., 1986) and a sociometric approach. Parallel to Yoo and Alavi (2004), this study identified emergent leaders implementing two methods as voting and the perception-based Likert scale. In the following questionnaire on the emergent leaders, we have asked participants to rate each group member based on four questions such as “please indicate the amount of Ratee's contribution to the task performance” and “In the future, how willing would you choose this person as the formal leader in a similar group project?” on a 5-point Likert scale. At the end of the questionnaire, we asked each participant to rate the emergent leader by asking, “If this group was asked to come together a second time for the same type of task, who would you want to be the leader (including yourself)?” Please write in

order from “the most desired to the least desired” for voting purposes to calculate the score of emergent leaders.

In the second phase, a qualitative design was adopted. Each recording lasted approximately 60–90 min of group discussion, which were digitally recorded and transcribed verbatim and checked for accuracy. To capture the verbal behaviours of the perceived emergent leaders, we have used a predefined coding scheme based on previous studies (Schlamp et al., 2021; Madera et al., 2009; Kickul & Neuman, 2000; Guzzo & Salas, 1995; Lord et al., 1980). In line with Schlamp et al. (2021), we have coded certain behaviours that cannot be categorised in the coding scheme as “other” (i.e. laughter, irrelevant statements). To ensure the reliability of the data, each researcher read the transcript individually, gathered and compared themes to validate analytical triangulation (Patton, 2002). Once the coding process reached saturation in generating themes, we obtained two main verbal behaviour categorisations: task-oriented and relation-oriented. Consistent with the extant literature, we have categorised task-oriented leader verbal behaviours as (i) developing orientation and defining problems, (ii) facilitating information exchange, (iii) developing plans and coordinating behaviour and (iv) facilitating evaluation and analysis. The relation-oriented verbal behaviours included (i) enhancing motivation, (ii) reducing conflict, (iii) developing a positive group atmosphere and (iv) taking the initiative (Guzzo & Salas, 1995; Kickul & Neuman, 2000).

Additionally, we have explored the frequency and preferred method of communication means during the group discussion (chat box and share screen options). For the decision-making subset, we have adopted the four styles of decision-making: (i) directive type (making decisions based on information and tendency of aggression), (ii) analytical type (deciding on the current data and higher tolerance for ambiguous context), (iii) conceptual type (decision-making after extensive elaboration and a tendency for creativity) and (iv) behavioural type (making a decision based on democratic style with a tendency to build a good relationship with members) (Rowe & Boulgarides, 1992). As depicted in Fig. 13.2, this study focuses on the emergent leaders from an individual-level analysis exploring antecedents such as (i) individual traits, (ii) communication methods, (iii) decision-making and (iv) verbal behaviours, including task- and relation-oriented (Gilson et al., 2015; Schlamp et al., 2021).

4 Research Findings

The voting procedure revealed that 17 out of 19 teams had salient ratings and identified an emergent leader who received more than 50% of the votes. We calculated differences in the average score of leadership perception for the two teams that did not have a clear emergent leader based on the voting procedure. Parallel to Lord et al. (1986), we calculated each leader’s perception on a five-point Likert scale and the five items loaded into a unidimensional structure with a reliability of 0.945 (Cronbach’s alpha) and Kaiser-Meyer-Olkin (KMO) 0.870. The gender dispersion of the emergent leaders from the voting process revealed that male students

Traits	Skills	Behaviors	Emergent Leadership
Extraversion Agreeableness Openness to experience Conscientiousness Emotional stability	E-communication <ul style="list-style-type: none"> • Verbal • Written Decision-making style <ul style="list-style-type: none"> • Directive • Analytical • Cognitive • Behavioral 	Task-oriented behaviors <ul style="list-style-type: none"> • developing orientation and defining problems • facilitating information exchange • developing plans and coordinating • facilitating evaluation and analysis Relation-oriented behaviors <ul style="list-style-type: none"> • enhancing motivation • reducing conflict • developing a positive group atmosphere • taking initiative 	

Fig. 13.2 Visual model of the study

perceived as emergent leaders (10 out of 19) were slightly higher than the female participants.

In the research, the PMBC scale had an internal consistency reliability range for each dimension of Cronbach’s coefficient between 0.67 and 0.82, which is within an acceptable level (Vaske, 2008). Female emergent leaders’ trait expression revealed the highest rating on openness to experience (71.6%), agreeableness (65.7%), and conscientiousness (65.7%). Male emerging leaders also reflected a similar finding and scored high openness to experience (70.8%), agreeableness (65.8%) and conscientiousness (64.9%). From the quantitative analysis findings conducted on trait expression for the study, we can say that emergent leaders defined themselves with traits of openness to experience (71.2%), agreeableness (65.7%) and conscientiousness (65.3%). Kickul and Neuman (2000) also reported that personality traits such as openness to experience and extraversion are distinctive characteristics of an emergent leader. In this study, the extraversion trait expression of the participants was slightly lower (on average, 61%). Aside from gender, we have asked for a grade point average (GPA) and birthplace for the participants’ demographics. Table 13.1 indicates each team’s emergent leaders’ gender, GPA and birthplace.

Table 13.1 shows that the average participants’ GPA ranges between 2,50 and 4,00, and most emergent leaders are born in Turkey. Since the respondents were born after 1998, we have identified them as the post-millennial generation in the study. Interestingly, half of the study’s emergent leaders are female students in a cultural context characterised by low gender egalitarianism and high assertiveness (GLOBE, 2020). This result draws attention since the rate of Turkish women assuming leadership roles is lower than their male counterparts (McKinsey, 2016). While the general representation rate of women in the workforce is 41%, this rate drops to

Table 13.1 Demographic information about the participants

Team number	Gender	Birthplace	GPA
1	Female	Turkey	3,02
2	Female	Germany	2,90
3	Female	Turkey	2,51
4	Female	Turkey	3,97
5	Female	Turkey	4,00
6	Male	Germany	2,60
7	Female	Turkey	2,83
8	Male	Turkey	2,50
9	Male	Turkey	3,94
10	Female	Turkey	3,76
11	Male	Turkey	3,73
12	Female	Turkey	3,59
13	Male	Turkey	3,21
14	Male	Turkey	2,73
15	Male	Turkey	2,45
16	Male	Turkey	2,53
17	Male	Iran	3,41
18	Male	Turkey	2,63
19	Female	Turkey	3,02

25% for senior management positions and 15% at the top management level (McKinsey, 2016; OECD, 2016) in Turkey. Various factors contribute to women attaining fewer leadership positions, such as (i) increased care responsibilities (Bekdemir & İlhan, 2019; TUIK, 2019) and (ii) limited access to necessary training and finance (OECD, 2016) to initiate career-building opportunities.

For the study's second phase, the qualitative analysis resulted in 1998 codes of emergent leaders' verbal behaviour. The analysis shows that emergent leaders frequently engage in behavioural decision-making and oral communication. Parallel to Yoo and Alavi (2004) and Misiolek and Heckman (2005), emergent leaders preferred verbal communication in this study. They utilised written communication only when compiling others' input to attain a final consensus (Table 13.2).

We have observed that the emergent leaders of this study generally preferred getting feedback and increased participation in the decision-making process. Emergent leaders aimed to increase inclusivity, fetched for each member's contribution and preferred behavioural decision-making. As Rowe and Boulgarides (1992) indicated, behavioural decision-making has people/social orientation. In the study, we observed that the emergent leaders exhibited supportiveness and were receptive to others' suggestions. The preferred decision-making style of emergent leaders shows that the participants were inclined towards an inclusive leadership approach (Roberson & Perry, 2021), since inclusive leaders are characterised by creating a climate of approachability, displaying openness to new ideas and communicating norms of availability and accessibility (Carmeli et al., 2010; Edmondson, 2004).

Table 13.2 Summative content

Individual antecedents of emergent leaders			Frequency
Skills	E-communication	Verbal	723
		Written	27
	Decision-making	Directive	125
		Conceptual	102
		Analytical	50
		Behavioural	215
		Total	1242
Behaviour	Task-oriented	Developing orientation	31
		Defining problems	83
		Facilitating information exchange	156
		Developing plansS	134
		Coordinating	111
		Facilitating evaluation and analysis	92
	Relation-oriented	Enhancing task motivation	29
		Reducing or avoiding conflict	11
		Developing a positive group atmosphere	42
		Taking initiative	67
		Total	756

The analysis result of this study reflects that participating emerged leaders frequently encourage others to provide input, show appreciation for others' work and facilitate teamwork and collaboration.

“Over here in the first quarter, and the first four months of the strategy implemented, sales were great, investors are coming in, but after that things start getting worse and worse. This is what we have written so far. Do we agree on this? What do you think about the scene over here? What will be the consequences, I think we should discuss them all together. (Emergent leader, Team 12)

Similarly, another emergent leader reflected social orientation as the participant preferred creating a positive climate in which the individual valued relationship building and attaining a team consensus in the decision-making process. This finding corroborates the emerged leaders' personality traits of being open to new ideas and an inclusive approach. These individuals reflected active listening, synthesised various opinions and exhibited collaboration in the process.

Do you think we should fire Ray? There are reasons for firing him, but why do you think we should go with the firing option?..... Guys, let's review first; we have the market dynamics, and he wants to impress the family....OK, I have written all the comments, are we OK? We have done a great job, guys! (Emergent leader, Team 13)

For the verbal behaviour theme of the emergent leaders in this study, we have coded 756 statements, out of which emergent leaders frequently exhibited task-oriented behaviours such as facilitating information exchange, developing plans and coordinating activities. Although we have observed that emergent leaders of the study demonstrated high task orientation (80%), such verbal behaviours are expressed

with an emphasis on increasing interpersonal relations and a sense of unity (Barbuto & Gifford, 2010; Eagly & Johannesen-Schmidt, 2001; Schlamp et al., 2021). The illustration of task-oriented verbal behaviours expressed in the study included navigating others to accomplish the task, ensuring unity, considering others' input, and represented with statements such as "can you go first" or "what do you think of my solution" (Schlamp et al., 2021, p. 9).

So, I think we should say that we should not fire Ray because his strategy has an infinite mindset, is very innovative, and in the long term, his strategy will be very successful. What do you guys think? (Emergent leader, Team 6)

This finding is interesting since, in the Turkish context, paternalistic and charismatic leadership is commonly exercised. However, with the post-millennial generation in Turkey, there may be an increasing orientation towards incorporating a sense of social cohesion and value equality (Singelis et al., 1995). Contrary to the existing empirical support of Turkish society's acceptance of inequality and rank (Cukur et al., 2004), the post-millennial generation's interconnectedness through advanced technology platforms minimises socioeconomic differences. As McKinsey's report (2020) on post-millennials indicated, "this generation is interested in what unites them rather than what sets them apart". Additionally, various emergent leaders of teams exhibited behaviours such as encouraging others to participate in decision-making, being inclined to facilitate collaboration and being involved in planning functions to ensure the group's unity and effectiveness. As inferred from the illustrated quote below, emergent leaders emphasised dialogue and sense-making capability. These are vital attributes in leading today's competitive fast-paced business context, especially during the global pandemic.

So, OK, let us do this; let us first discuss why Ray should be fired; then I will gather each input and write down our answers one by one; we should link our answers to the strategies we have discussed in the class diversification or cost-leadership. Then, we should incorporate our answers accordingly, and I will sum up all the answers for us and organise them together. (Emergent leader, Team 17)

For the relation-oriented behaviour theme, the study shows that emergent leaders are inclined to value uniqueness and facilitate belonging while reducing barriers to participation. For example, the emergent leader of Team 1 demonstrated reconciliation among team members' diverse opinions and encouraged participation while creating a psychologically safe environment for each team member.

It is good that we all expressed our opinions; there was no inconsistency in our responses; they are aligned. We have done a great job! When we brainstorm, we can develop great ideas. (Emergent leader, Team 1)

One of the predominant displayed relation-oriented verbal behaviours that emerged among leaders in this study was taking the initiative.

I have an idea for the third scenario...I will go first share my thoughts on this, and once we all agree, I will write down all the marks you have mentioned. I will add all of our comments here, and I will summarise them. (Emergent leader, Team 9)

As we can observe, emergent leaders are prone to share their perspectives and seek additional responsibilities in accomplishing the assigned task and taking the initiative essential leadership capability in building healthy in-group relationships when one shares their knowledge to increase collaboration and attain success. According to the study findings, it is possible to argue that emergent leaders exhibited increased inclusivity in the decision-making, took the initiative and frequently engaged in planning and coordination efforts. In addition, it was a typical behavioural pattern for emergent leaders of the groups to assume responsibility and duty of the given task, promote a sense of unity and create a safe environment for each group member to freely share and present their input in parallel with the extant literature (Kickul & Neuman, 2000; Guzzo & Salas, 1995; Lord et al., 1980).

Based on the coding procedure of the 19 recordings, since emergent leaders did not exhibit formal authority, frequent information exchange towards planning and coordination efforts can indicate leadership emergence in assigned self-managed teams. Hanna et al. (2021) also indicated that task-based factors could predict emergent leaders. Although the emerged leaders engaged in task-oriented verbal behaviours, these behaviours created a positive atmosphere that increased inclusivity and participation. This is one of the exciting findings from the study since the commonly adopted leadership typology in the Turkish context includes paternalistic, charismatic and transformational styles. As a collectivist and high-power distance culture, Turkish cultural values are shaped by vertical collectivism that embraces leadership styles that maintain authority and status, expecting loyalty and deference from subordinates (Aycan, 2006). Furthermore, Aycan et al. (2013) stated that individuals validate leaders who expect commitment and express authority in the Turkish context. On the contrary, this study demonstrated that an inclusive approach to leadership was preferred.

The study findings revealed that emergent leaders displayed a behavioural decision-making style. In parallel, the leader seeks to increase affiliation/belongingness to the team, value each member's contribution and increase collaboration. This finding corresponds to the post-millennial generation's adopted values, such as commitment to sustainability and social causes. In addition, the National Association of Colleges and Employers (NACE) survey (2021) stated that over 79% of the students valued inclusivity; in parallel with these paradigm shifts, the post-millennial generation in Turkey also prioritises values such as justice (Tari-Kasnakoğlu et al., 2020). As Covid-19 created increased isolation and loneliness (Yavuz et al., 2019), the rise of inclusive behaviours can mitigate the adverse effects of the pandemic while increasing empathy and productivity (Palalar et al., 2022). Thus, the emergent leaders of this study exhibited behaviours such as allowing others to voice valuing diverse input into decision-making to combat the feeling of disconnection. Furthermore, the emergent leaders' personality traits of openness to experience and agreeableness are significant antecedents of inclusive leadership.

5 Discussion and Limitations

Turkey is a country where authoritarian and paternalistic leadership approaches are widely idealised. In this study, we explored whether these traditional approaches to leadership had survived the Covid-19 pandemic, which brought many challenges to leadership. Counterintuitively, our findings show that Turkey's leadership emergence gives signs of an inclusive turn. Among our study participants, those who showed inclusive characteristics emerged as leaders in higher education. Although this finding is surprising and provides a contrast to earlier research (Aycan, 2006; Aycan et al., 2013) in the Turkish context, a closer inspection of the growing resentment among students in the Turkish higher education sector to the deterioration of democratic values and structures of equality and inclusion might have given rise to leadership emergence along inclusive lines. In particular, the lack of protective legislation, supportive discourses and practices of equality, diversity and inclusion in the Turkish context (Kamasak et al., 2020; Kusku et al., 2021) calls for an exploration of leadership emergence in the higher education sector. There is no provision for students from different backgrounds in the higher education sector, which operates with assumptions of national unity and homogeneity without dissent (Baykut et al., 2021).

We recognise that although trust is at an all-time low in institutions and leadership in all sectors of work and life (Edelman, 2021), the demand for social justice, fairness, equality and inclusion are on the rise in Turkey as in other countries (Ozbilgin & Erbil, 2021). These patterns account for why the pandemic conditions have led to a turn in the leadership emergence in Turkey. However, we are yet to see whether these emergent forms of leadership will survive the tests of time and context. Furthermore, as a generational and cohort issue, Twenge (2017) argues that today's post-millennial generation demands greater flexibility, security, fairness and values diversity and inclusivity. Our findings align with this literature, showing the significance of inclusion as a value in leadership emergence. Most leadership education happens in disciplinary silos. Our study is also located within a business school context's subfield of leadership education. The literature suggests that leadership education should be enriched through cross-disciplinary and interdisciplinary approaches. Further research could explore how leadership emergence happens across other science disciplines and be enriched through multidisciplinary insights.

As leadership emergence among self-managed teams is one of the responses to the heightened ambiguity in the external environment, understanding those perceived as leaders without formal authority is vital. In today's business context, characterised by increased volatility, uncertainty, complexity and ambiguity, implementing the desired change necessitates a distinctive leadership approach. This study has highlighted numerous benefits of an inclusive approach in leadership that expresses authentic commitment to the group, takes the initiative and responsibility to accomplish the given tasks, exhibits an open mindset, genuinely listens to others' input and focuses on group cohesion. We have explored our study in higher education institutions as these institutions provide an opportunity to identify, learn

and attain practical interpersonal skills to experience leadership. Additionally, higher institutions give an ample opportunity to exercise leadership to those in lower hierarchy levels and explore horizontal leadership (Middlehurst et al., 2009).

The counterintuitive finding of our study was that despite an apparent preference for more charismatic and paternalistic forms of leadership in formal positions in Turkey, informal leadership emergence suggests a taste for more democratic and inclusive leadership behaviours among Turkish participants. This finding is hopeful as informal leadership emergence over time may change the moral landscape for acceptable leadership behaviours. We predict that Turkey's transformation would emerge from paternalistic to participative and inclusive leadership behaviours over time. Meliou et al. (2021) identify that shared concerns can, over time, lead to the emergence of responsible forms of leadership, such as inclusive and participatory leadership. Therefore, our findings are promising indicators of behavioural and moral changes to Turkey's acceptable and legitimate leadership behaviours.

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Chapter 14

Navigating the Crucible of Crisis: Effective Leadership Strategies for Higher Education COVID-19 Recovery



Samantha Thompson and Xavier Hoy

Abstract The novel coronavirus disease (COVID-19) has overwhelmed leaders of countries across the globe and created a tempest of academic, economic, cultural, health and political crises. In its wake, COVID-19 continues to leave behind discombobulation, chaos, confusion and insecurity, across every realm of society. In Academe, the myriad crises propagated by COVID-19 begs the question of how university leaders can balance the risks of this calamity with the opportunity for future resilience. This work reveals the univocal truth that higher education will never be the same, and as with most crises, HEI leaders are in a race against the clock to ensure the continued operation of their campuses. This chapter dissects the dichotomy of HBCU and PWI institutions, reviews decisions in response to COVID-19 and explores pertinent crisis management literature. Through a comparative process, the authors postulate the use of RACERS, a new transformative crisis management model. Such a model requires a mechanism that can provide efficacious leadership stratagems to navigate future crises at HEIs and provide options for COVID-19 recovery.

Keywords Higher education · HBCUs · Leadership strategies · RACERS model · Transformative crisis management · COVID-19 resilience

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1 Introduction

A crisis is an opportunity riding a dangerous wind. (*Chinese proverb*)

The novel coronavirus disease (COVID-19) has overwhelmed leaders of countries across the globe and created a tempest of academic, economic, cultural, health and political crises. COVID-19 dwarfed other epidemic and pandemic diseases in contemporary society, including SARS, Ebola and the H1N1 flu, based on its high transmissibility levels across continents, mutation and mortality rates. World leaders did not sufficiently prognosticate this pandemic's indelible and far-reaching impact as a new, highly communicable virus. Higher education institutions (HEIs) were no different in this regard. As loci of higher learning, leaders at these organizations were forced to tackle an invisible enemy without a foolproof battle plan or proven tactics, strategies and best practices.

The educational landscape for tertiary institutions has been irrevocably changed, quintessentially encapsulating this Chinese proverb. The myriad crises propagated by COVID-19 begs the question of how university leaders can balance the risks of this calamity with the opportunity for future resilience. The univocal truth is that higher education will never be the same, and as with most crises, HEI leaders were in a race against the clock to ensure the continued operation of their campuses. Such a drastic shift in the status quo necessitates new crisis management and leadership approaches at historically Black colleges and universities (HBCUs) and predominantly White institutions (PWI). HEI leaders must have the conation to invest in the requisite resources to sustain their institutions. The authors believe that scholars who lucubrate about leadership, governance and innovation will continue to contribute to HEIs' global knowledge economy.

To that end, higher education innovation in a post-COVID-19 world demands differentiated leadership strategies that are pliable and withstand various stress tests. Although the COVID-19 crisis caused severe disruption to HEIs, it also engendered a unique opportunity for these institutions to re-examine, augment and transform critical aspects to promote their resilience and sustainability. The juxtaposition of crises and opportunity is at the heart of transformative crisis management strategies and should be utilized by higher education institutions.

The scope of this chapter covers qualitative research of a comparative nature. It is an interpretative study of strategies, tools and policies utilized by higher education institutions to navigate the unprecedented crises created by the COVID-19 pandemic. Thus, much of this research is based on analysing individual interpretations of the crisis and their logical inferences and implications. To collect the necessary data, we randomly selected HEIs and compared their documented responses to the current crisis. This is achieved by means of examining cases, the language and the elucidation of institutional leaders, as well as current literature. This approach permitted the authors to critically analyse the connotations and implications of these strategies and the values and doctrines that reinforce them. The chapter adopts a

comparative method to assess the suitability of the leaders' interpretations and strategies. Where significant, this chapter explores alternative strategies to consider.

Moreover, this chapter provides an alternative model to solidify a viable process, streamline future response efforts and adjust protocol with minimal barriers. This chapter dissects the dichotomy of HBCU and PWIs, reviews decisions in response to COVID-19 and explores pertinent crisis management literature. Subsequently, the authors postulate that a new transformative crisis management model, RACERS, can provide efficacious leadership stratagems to navigate future crises at HEIs and provide options for COVID-19 recovery.

1.1 Higher Education

Public higher education institutions in the United States deal with an increasingly competitive environment, decreasing government funding and, most recently, reduced revenue from a shrinking international student population. These problems were not classified as crises before COVID-19 but were relegated to cyclical challenges that plagued HEIs yearly. Unfortunately, very few HEI leaders have the insight to augment and refine their crisis management strategies pre-emptively actively (Kovoor-Misra, 2020), choosing instead to focus resources and human capital on immediate issues such as enrolment, retention and graduation rates. While the aforementioned issues impact the operability of HEIs, the emergence of the COVID-19 pandemic further threatens their viability by adding another layer of complexity to the fray.

Examining contemporary challenges in higher education literature reveals many issues with finances, enrolment, diversity, inclusion and retention (Mintz, 2021; Anthony et al., 2017). However, an emergent challenge is competition from the private sector, where faculty and staff have responded to the disruptions of COVID-19 by doubling down on their remote and hybrid work options, which caused uncharacteristically high turnover (Ellis, 2021). According to the US Labor Department, at least 650,000 workers have left or lost their jobs since the pandemic's start (Ellis, 2021). At this juncture, employees are prioritizing flexible work options for future career endeavours, which means that higher education leaders now have a new potential crisis to contend with. It stands to reason that new hiring and telecommuting policies should be on the horizon for these institutions, but many resist the change. Unfortunately, most higher education institutions have not demonstrated agility in offering permanent remote work options for faculty and staff, some of whom discovered a preference for the flexibility that hybrid and remote work provides. In light of the ongoing COVID-19 pandemic, these job market changes are just another example of why HEIs need to transform their approach to managing crises using the RACERS model.

1.2 COVID-19

In the United States, COVID-19 spread unprecedentedly, pushing leaders at HEIs to swiftly create plans, make decisions and implement strategies to mitigate the spread on their campuses. Since the initial SARS-CoV-2 in 2020, there have been over 48 million cases and over 780,000 deaths in the United States (Centers for Disease Control and Prevention, 2021). Additionally, several concern variants emerged in 2021, including the Delta and Omicron variants. However, the infection rates were not equitable across race, gender or age categories. Specifically, the data on COVID-19 infections indicate that African American, American Indian, Alaska Native (AIAN) and Latino people shared a disparate burden of the total number of cases and deaths to date compared to their White counterparts (Artiga et al., 2021).

In March 2021, AIAN people had the highest mortality rate in the United States, with 256 deaths per 100,000 people (American Public Media Research Lab, 2021). At the outset of the pandemic, African Americans were 3.5 times more likely to be hospitalized and 2.4 times more likely to die from COVID-19 than their White counterparts (Artiga et al., 2021). The Centers for Disease Control and Prevention (2021) also estimate that Latino people between 30 and 39 years old are five times more likely to die than White people in the same age category. The body of knowledge on this topic concurs that African American and Latino people in the United States have less access to medical care, have higher rates of comorbidities and are less likely to be able to work from home (Johnson et al., 2021).

These statistics indicate that as institutions that serve minority populations who were and continue to be disproportionately burdened by the pandemic, HBCU leaders were faced with the additional pressure of balancing the need to continue providing quality education, remaining operational with limited resources and keeping their employees and students in a safe and healthy environment. Additionally, PWIs, which typically have larger student populations compared to HBCUs, were faced with heightened resilience issues, navigating test-optional admission processes, depression/mental health concerns, pedagogical flexibility and learning management system adjustments for their numerous classes (Thompson & Rodriguez-Nikel, 2022). Ivy League universities, especially, were faced with an enormous increase in admission applications, with Columbia University and Harvard University receiving a 51% and 43% increase in the number of applicants from the previous year, respectively (Adams, 2021). To that end, it is important to examine the leadership strategies at these institutions.

1.3 HBCU Leadership

Historically Black colleges and universities (HBCUs) have always played a pivotal role in educating underrepresented minority scholars in the United States. When examining the unique history and the circumstances that precipitated the

establishment of these institutions, it is evident that HBCU leaders have managed crises since their inception. The first HBCUs were founded by the second 1890 Morrill Land-Grant Act to allow persons of colour and underrepresented backgrounds to access education (Association of Public and Land Grant Universities, 2013). Seventy-five years later, when Congress passed the Title III of the Higher Education Act of 1965, it demarcated HBCUs as “any historically Black college or university that was established prior to 1964, whose principal mission was, and is, the education of Black Americans and a nationally recognized accrediting agency accredits that” (*Thurgood Marshall College Fund*, 2021, p. 1).

The nation’s 101 HBCU leaders must continuously find ways to serve the distinctive demographics that comprise their student populations. Most students are Black or African American, first-generation college attendees with low-income backgrounds (*Thurgood Marshall College Fund*, 2021). Additionally, more than 75% of the student population is dependent on Pell Grants or some form of financial aid to complete their matriculation (*Thurgood Marshall College Fund*, 2021). In addition to providing education to underrepresented minorities, HBCUs generally survived on exiguous resources in comparison to their PWI counterparts. Recent state reports have revealed that many HBCUs were systemically excluded from accurate state funding for decades (Lorin, 2021). Over time, legislators across states failed to provide one-to-one matches for federal dollars to HBCUs. A report from the Association of Public and Land-Grant Universities highlighted that from 2010 to 2012 alone, all 1890s land-grant HBCUs were collectively underfunded by approximately 57 million dollars (Association of Public and Land Grant Universities, 2013). HBCUs in the southern part of the country also contend with funding issues. Prairie View A&M University and Florida State University were insufficiently funded from 2011 to 2020 by \$46 million and \$19 million, respectively (Lorin, 2021). Additionally, a 2021 Tennessee state budget report delineates the impact of this disparate treatment of HBCUs, revealing that 544 million dollars have underfunded Tennessee State University since 1957 (Brooks, 2021). Moreover, HBCUs only possess 1/8 of the average endowments that PWIs have (*Thurgood Marshall College Fund*, 2021), making it difficult to upgrade facilities and complete campus improvements.

Despite the chronic low levels of funding, HBCUs have achieved notable outcomes. The 1890 land-grant institutions are responsible for 35 US patents and have over 112,000 (97,115 undergraduate and 15,434 graduate) students (Association of Public and Land Grant Universities, 2013). In 2018 the White House National Science and Technology Council released a report that detailed the federal government’s five-year strategic plan for STEM education in the United States, including a mandate to increase diversity, equity and inclusion in STEM fields (National Science and Technology Council, 2018). This vision cannot be achieved without the involvement of HBCUs, which have contributed 4.4 billion dollars to their local economies and conferred 28,607 science, technology, engineering and mathematics (STEM) degrees from 2016 to 2020 (Association of Public and Land Grant Universities, 2013). According to the Thurgood Marshall College Fund, HBCU graduates represent 80% of judges, 50% of professors at non-HBCUs, 50% of

lawyers and 40% of engineers among African Americans. Several HBCU leaders took essential steps to transform their campuses with much-needed technology upgrades (Galvin, 2020).

Notwithstanding the protracted low levels of funding and the myriad challenges their students face, HBCU leaders have produced remarkable achievements, bringing their leaders resilience and continuous dedication to students, faculty, staff and key stakeholders. However, with the other crises that emerged because of COVID-19, HBCU leaders must innovate and alter their previous reactive crisis management approaches to catalyse sustainable change at their institutions to remain viable. Similarly, leaders at PWIs need to review current strategies and assess their efficacy for future challenges.

1.4 PWI Leadership

There is little dispute that there are stark differences in how HBCUs run compared to PWIs. Financial resources have much to do with it, but so do the leadership and culture of these institutions. PWIs seek specific qualities while vetting leaders, qualities that do not necessarily influence their HBCU counterparts. PWIs seek leaders that have exceptional financial acumen. A survey conducted by the consulting firm Deloitte in 2017 found that nearly two-thirds of college presidents ranked fundraising, alumni relations and donor relations among their top three priorities. They also alluded that fundraising was the most important leadership attribute they needed to improve on (Clark, 2017) further. Fundraising is vital to a college president's job description; private funding pays for employee salaries, research initiatives, campus projects and financial aid. Leaders at PWIs need experience in developing budgets, overseeing endowments and creating financial master plans. This is particularly true in times of economic uncertainty. Therefore, financial acumen is even more important than fundraising.

Another chief attribute of PWI leadership is bridging the gap between internal and external interests. This drives PWIs to prioritize "collaborative leadership" abilities. For example, collaborative leaders often seek out opportunities for departments on campus to work with, support and learn from one another. Externally they engage in activities such as fostering partnerships with local, national and global industries to meet the needs of students and faculty. These types of relationships could come from internship programs, mentoring programs, job placement, scholarship opportunities or influence with government policymakers about community issues such as criminal justice reform, education or environmental issues (Middlehurst & Elton, 1992).

Unlike their HBCU counterparts, PWI leadership need not be experts in crisis management. Instead, PWIs tend to prioritize team strategic planning abilities. In this capacity, leaders must be able to evaluate what their team is doing well, whether there is a need for improvement and what it will take to achieve stated goals. Leaders will need to consider short-term plans that can be executed quickly

and with little disruption and long-term plans that will have a broader and more profound impact.

Predominately White universities have always had significant advantages over HBCUs, the least of which has never been funded. Funding is arguably the chief disparity between HBCUs and PWIs. However, COVID-19 brought unprecedented challenges that impacted all HEIs with equal stealth and indiscriminate ferocity. In Washington, DC, both Howard and Georgetown suffered losses. In New Orleans, Tulane University was subjected to the same citywide lockdown as Dillard University. Death touched many American campuses via COVID-19. No race or gender was spared; it has been an unbiased killer. Finally, while COVID-19 functions in one aspect as a “great equalizer”, PWIs still enjoy some residual advantages. Their superior financial standing and less complicated ability to secure private investment allow them to recover from crises more rapidly, efficiently and completely. They often leave a crisis in a better position than they were entering. HBCUs typically have the opposite experience. To quote one party: “The public institutions that enrol high numbers of Black students have been hamstrung by limited state funding; the ones that have few Black students have been showered with it” (Spencer, 2021, p. 1). As PWI leaders navigate the challenges engendered by COVID-19, they will need practical crisis management approaches in their arsenal.

2 Crisis Management

HEI leaders have faced their fair share of crises; however, these calamities’ nature, complexity and severity have become more severe over time. The body of literature on crisis management assents that crises typically have the following elements: significant, high impact, urgency, ambiguity, threat and stress (Gigliotti, 2020; Kovoormisra, 2020; Coombs, 2015; Simola, 2014; Heath, 2010). Additionally, crises are typically complex and exacerbated when they intersect with other organisational failures or weaknesses.

In light of the current global pandemic, renewed attention has been placed on how leaders of countries, governments, companies, schools and individuals can effectively manage crises. In recent years, companies have been plagued with contemporary challenges such as cybersecurity issues or financial issues (Waller et al., 2014) that pale in comparison to the global impact of COVID-19. Previously, scholars in the field focused on the role of crisis communication and crisis management teams in guiding organizations through the turbulence of crises (CMTs) (Mitroff & Pearson, 1993; Pearson & Sommer, 2011; Waller et al., 2014; Jong, 2021). A crisis can be described as an event that causes a significant disruption to an organization. As Pearson and Clair stated (1998): “An organizational crisis is a low probability, high impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effects, and means of resolution, as well as by a belief that decisions must be made swiftly” (p. 60).

There are several examples of how crises can be the ultimate stress test of leadership, potentially damaging institutional reputations or catapulting them to a new status (Gigliotti, 2020). Gigliotti (2020) describes crises as “disorienting and unwieldy events for an organization and its leaders” (p. 2). This description is apt; COVID-19 did leave leaders disoriented when it sliced through the higher education landscape in 2020 like a whetted knife, eviscerating HEI’s veil of normalcy and control. The authors posit that crisis communication strategies alone are insufficient for HEIs to recover from this pandemic. For example, many institutions operated from the perspective that their existence was perdurable; however, there have been several recent college and university closures in Alabama, California, Delaware, Illinois, Indiana, Nevada, New York, Ohio, Oregon, Tennessee, Vermont, West Virginia and Wisconsin. These closures have shed light on the reality that while most HEIs will survive, a few will continue to succumb to the pressure of crises without apposite crisis leadership strategies (Higher Ed Dive, 2021).

3 Transformative Crisis Management

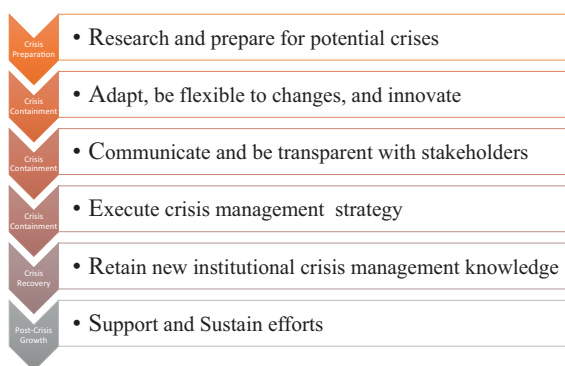
Transformative crisis management (TCM) is how leaders drastically change and improve their organizations during a crisis (Kovoor-Misra, 2020). It differs from previous crisis management models, which can be prescriptive and focus on the process instead of the leaders (Fink, 1986; Gonzalez-Herrero & Pratt, 1996; Jaques, 2007). TCM involves “having positive resilience” and the “capacity and willingness to create positive change in one’s environment” (Kovoor-Misra, 2020, p. 41). In a post-COVID-19 world, this entails HEI leaders intentionally becoming “catalysts for positive change” (Kovoor-Misra, 2020, p. 41). To that end, it is important to contextualize leadership in higher education. According to Hayashi and Soo (2012), leadership can be described as an “ability to shape the environment and leave behind a pattern for success” (p. 81). This is a crucial interpretation relevant to HEI leaders who must cultivate an atmosphere of success through transforming paradigms, processes and programs to recover and thrive after COVID-19. Transformative crisis management is comprised of four (4) phases: crisis preparation, crisis containment, crisis recovery, and post-crisis growth (Kovoor-Misra, 2020). It is important to note that the TCM approach is not linear; transformative behaviours and actions within each phase should not be conducted in silos. Instead, leaders need to leverage that each phase shares a measure of interconnectedness and attempt to achieve crisis management goals concurrently, always thinking ahead to the next phase. Most HEIs were forced to compete with the first two phases without warning and in a short period. Transformative leaders must possess a high emotional quotient, excellent problem-solving abilities and a growth mindset. At this juncture, HEIs must focus on recovering, improving and sustaining themselves (crisis recovery and post-crisis growth phases).

To recover from the pandemic, HEI leaders should drastically transform their campuses to fit the new reality in higher education. Institutions that have not done so should begin forming teams to tackle the minor crises that ensued in the wake of COVID-19. As stated earlier, the organizational culture and decision-making practices at most colleges and universities are predicated on the notion that there will always be a steady flow of students, traditional face-to-face classes are the most effective methods to instruct and learn and that remote work is a luxury reserved for the private sector. Nevertheless, when mandatory shutdowns occurred in 2020 because of the pandemic, all of those long-held assumptions were shattered. Consequently, traditional full-time students who live on campus and high fee-paying international students whom immigration policies have recently stymied can no longer be the bread and butter of targeted enrolment for HEIs. The reality is that due to the increasing cost of attendance, the average college student in the United States needs to work part-time to make ends meet and support their families (Perda & Odle, 2020). Institutions should expand their paradigm and provide degree offerings that incentivize non-traditional students to enrol in higher numbers. Thus, a renewed focus should be considered on student support services that extend outside academia, such as day-care services and mental health and wellness services.

4 RACERS Model

The authors' RACERS model in Fig. 14.1 builds on aspects of the concept of transformative crisis management and focuses on the retention of knowledge to support leaders through future crises. The authors believe this approach to be the roborant for HEIs' COVID-19 recovery. The RACERS model created by the authors encourages institutions to research and prepare for potential crises, adapt in order to be flexible to changes, communicate and be transparent with stakeholders, execute the crisis management strategy, retain institutional knowledge and support and sustain crisis management efforts.

Fig. 14.1 RACERS COVID-19 transformative crisis management model. *Note* This model was prepared by the authors for this chapter. (Thompson & Hoy, 2023)



4.1 *Research and Prepare*

Tomorrow belongs to those who prepare for it today. (African Proverb)

Crises typically manifest with some time component involved. Commonly, all things are held constant; the sooner crises can be addressed, the sooner they can be eliminated. A solid plan to address crises is a characteristic of a great organization. It also provides the added benefit of a potentially faster crisis response time. A general crisis plan (GPC) is a set of rules and protocols to prevent and respond to crises. Preparation is impossible without a plan, and planning is impossible without initial research. Since no one is privy to what will occur in the future, it is impossible to be sure what crises to plan for. Thus, research linked to crisis preparation must be focused on generalities and potential crises.

There are several steps universities can take to be more prepared. First, leaders must research what has happened to other schools. A logical next step is to ask key people to identify the most vulnerable parts or processes throughout the school. This is simply an evaluation of the school's state of readiness. This may be achieved by asking key questions: Is there a crisis plan? Who are the people critical to the process? Are they prepared and knowledgeable about the school's policies and procedures? Is up-to-date and relevant contact information for them available? Third, when preparing for potential crises, it is helpful to understand what prior crises the university experienced and the outcomes. Another strategy to shore up crisis preparation is establishing the credibility and image of key university leaders (Scudder, 2021). An organization facing a crisis may have an advantage if its leaders are respected and thought well of. Fourth, schools should invest in strengthening external relationships that may prove beneficial in crises. This includes media, state and local government and influential community members (Scudder, 2021).

Finally, no organization is fully prepared without some form of litmus test. An efficient way to accomplish this is to have crisis readiness simulations. Simulations help identify weaknesses in existing crisis plans. Another benefit of simulations is that they highlight leadership qualities (Scudder, 2021). A crisis is an excellent indicator of character. Individuals must either overcome or succumb to pressure; choices are few. Seeing how such simulations may inform and elevate collective awareness is plain. This is useful in multiple ways, all producing a better state of readiness. The sad truth is that the true test of preparedness is an actual crisis. Whatever lessons learned from the experience must be recorded, evaluated, interpreted and incorporated into future preparations.

4.2 *Adapt*

The pandemic put high demands on governments as well as the private sector. The rapid onslaught of such demand and unprecedented need requires HEIs to be adaptive and innovative. The term "adaptive governance" is a concept rooted in

evolutionary theory but applies and may be useful in crisis management. It is defined as the ability to deal with complex societal issues involving many stakeholders, diverging interests and uncertainty about the actions to be taken (Janssen & Van der Voort, 2020). Adaptability is vital when confronting a significant chaotic and disruptive change, such as the challenges presented by the COVID-19 pandemic. In responding to COVID-19, successful schools could implement adaptive governance with little to no planning time. Nonetheless, it provides opportunities to evaluate institutional adaptability.

The primary focus of adaptive governance is responding to and dealing with uncertainty and changes in an environment. Adaptability in this context was initially applied to examine organizations in their natural environment (Janssen & Van der Voort, 2020). The concept places learning at the core of its efforts. Highlights of adaptive governance include that nothing is fixed (set) and that organizations change to fit with fluid environments. Also, there is no fixed approach for adaptation itself. Bureaucracies often have predefined tasks, protocols and tools to secure more stability and efficiency. At times they function as “silos” concerning mindsets. This may compromise potential innovation and flexibility (Janssen & Van der Voort, 2020). It is important to note that adaptability is not a method. It is a characteristic of an organization, embedded in how it functions. It should not be crude or inefficient but rather a matter of altering protocol. Adaptability relates to contingency, and contingency often requires innovation.

As humans, we will not consider change until confronted with events that force us to accept that things are not normal. In the early days of the COVID-19 pandemic, images of overrun ICUs and improvised morgues forced us into action. Indeed, necessity is the mother of invention, and innovation is principally problem-driven. Every innovation arrives with the inherent assumption that the problem can be solved. New problems have always provided the basis for new technologies and innovations (Ardito et al., 2021). However, crisis management demands that problems be solved in a limited time. Thus, a reasonable assumption is that innovations necessary for such situations cannot be conventional.

Few would dispute that the COVID-19 pandemic changed the world significantly in various ways. HEIs must face the reality of an evolving landscape and adapt to survive. Be it an HBCU or PWI, no HEI can withstand the perils of diminishing student enrolment and retention rates. Traditional HEIs are facing just that. New innovative non-traditional HEIs are entering the market and show no signs of relenting. These new players offer cutting-edge technologies to provide outcome-based education delivery models. The University of Phoenix and Western Governor’s University fall into this category, offering streamlined, completely online courses and degrees (Levine & Van Pelt, 2021). Other innovative higher education platforms award non-traditional credentials that employers are increasingly accepting. On average, these alternatives are also less expensive than traditional colleges and universities. Altogether these indicators suggest that traditional HEIs are likely to experience student reductions, and system-wide retrenchments are likely to follow. Traditional HEIs must find new modes of delivery—hybrid models and

practical-based learning approaches. For example, they emphasise project-based vs. theoretical efforts to improve postgraduate outcomes. Finally, an increasingly interconnected world means crises of all varieties are more likely to arise. Thus, all HEIs must have a health crisis team or health partner in place to deal with future outbreaks on campus.

4.3 *Communicate*

Communication is often overlooked and seemingly intangible, but it is one of the most critical aspects of successful crisis management. In times of crisis and uncertainty, how organizations communicate internally and externally is among the most significant determinants of how efficiently the crisis may be contained. Communications may be verbal or non-verbal and come in any form of media, including print, broadcast or online social media platforms (Kovoor-Misra, 2020). In crises, communications should provide the knowledge required to make corrections or at least positive decisions. Positive in this context means any decision that provides some net benefit for the school. This area overlaps with the innovation components of transformative crisis management. Officials use communication tools to share updates and essential company information during a crisis. A cohesive crisis communication plan should be incorporated into every university safety program. When a crisis occurs, lives may be spared or saved by the proficiency of campus communications. Universities with the capability to promptly connect staff to the appropriate entity are at an advantage. Officers who can alert the proper staff of an emergency with a flick of a switch are better prepared for crisis.

The actual communications being sent are just as important as the ability to distribute communications. Sticking to a few keys may help communications in TCM be more effective. First, keep the messaging simple and comprehensible for everyone. Remember that the crisis may affect everyone, so being straightforward, clear and concise is better for everyone. It reduces the opportunity for confusion and may save valuable time. Leaders should ensure that communications have a clear objective. Each communication should be tailored to the targeted audience. Second, be credible at all costs. Be sure the message matches how it is delivered. For instance, it would be inappropriate to send out a video message appearing gleeful while informing viewers that the campus has a COVID-19 outbreak. This could be problematic for several reasons, including people interpreting it as not being serious. Finally, assure and reiterate competency. Assure the targeted audience that their organizational leaders have the skills, knowledge and resources to address the crisis and get results. Remind them of past crises the organization has faced and overcome. Reiterate the organization's ability to manage unprecedented situations.

4.4 *Execute*

Crisis containment is at the heart of the crisis management process and is typically where most organizations allocate their time. No matter how much you plan, some crises cannot be prevented from occurring, such as earthquakes, floods, hurricanes and other natural disasters. In these instances, it is crucial to minimize the damage in the quickest time possible. When creating a team to manage a crisis and execute the selected strategy, HEIs should focus on the following attributes: cross-functionality, representation, diversity and expertise. Creating a task force, committee or network of individuals who have access to current information and can quickly generate implementable solutions is imperative. Crisis management literature recommends hiring a crisis management firm or consulting team external to the organization to deal with specific issues. In the wake of this pandemic, the ideal crisis management team should, at a minimum, comprise a member of the supervising board, president/chancellor, senior-level administrators, faculty, staff and, in some cases, subject matter expert and a student representative.

Additionally, forging strategic partnerships with an expert organization can be efficacious when dealing with a crisis that has never been encountered. For example, at the outset of the COVID-19 pandemic, Southern University Law Center, an HBCU within the Southern University System located in Baton Rouge, Louisiana, forged a relationship with Ochsner Health to evaluate its facilities to create a safe and healthy work environment for faculty, staff and students to return (Southern University Law Center, 2020). For institutions like HBCUs or small institutions that do not always have a surplus of financial resources readily available in emergencies, leveraging the power of the institution's alumni could also add value to the crisis containment phase of the process. Creating alumni response teams and tapping into their expertise in pertinent areas widens the university's reach for industry best practices and fosters new and meaningful strategic partnerships that assist with the race against the clock. Moreover, having dedicated alumni with strong nexuses to the institution on call from the private sector or federal, state and local governments allows HEIs to access solutions from critical-thinkers external to the institution with unique perspectives and skillsets and a vested interest in their success.

Traditional TCM models focus on external resources but typically limit the scope or overly focus on internal resources. Public institutions should also rely on state agencies and expertise in crises. One partnership between Governor John Bel Edwards of Louisiana and Southern University A&M College's progressive administration provides a clear example. In the spring of 2020, the Edwards administration created a task force to address the health disparities in the state exposed by the COVID-19 pandemic. Edwards appointed two Southern University officials to leadership positions on the task force: Dean of the School of Nursing and Dean of the Mandela School of Government and Public Policy. Simultaneously, like the rest of the world, SU's administrators, faculty, staff and students were struggling to grasp the nature and severity of the virus. The Governor sent in the region two Medical

Directors for the LA Department of Health as an advisor to SU on how to best navigate the pandemic. This type of collaborative strategy could only serve to improve TCM approaches.

4.5 *Retain*

Crisis recovery entails decisions made after the crisis has been contained and regular operations have resumed. Most crisis management models focus on financial recovery; however, this model details how and why decisions were made, documenting the process and cataloguing it for future purposes. Previously established ways to learn from crises involved integrating crisis management in strategic planning or budgeting processes at HEIs. The authors believe these steps are helpful, but the reality is that most strategic planning only occurs a minimum of every 5–10 years, and budgeting transpires annually. This pandemic has delineated the need for crisis planning and management strategies to be a topic of discussion on a semester-by-semester basis and to be incorporated into key university events such as faculty convocation, faculty meetings, board meetings, staff meetings and even student government meetings. Each time an organization undergoes a crisis, mistakes are made, lessons are learned, and decisions can take the institution into uncharted territory, all of which engender new institutional knowledge about handling crises. To retain the new lessons learned from COVID-19 and anticipate dealing with new COVID-19 variants and other health-related crises that could emerge, creating a repository of easily accessible information is now a key component of institutional knowledge retention. With the anticipated high turnover rate in higher education leadership in the upcoming year (Basken, 2021), it is more important than ever to ensure that the incoming senior leadership team is made aware of previously made decisions, contemporary strategies, and key available resources to reduce the learning curve. HEIs must capitalize on available technology and use key features to make retrieving the data as seamless as possible. A simple and cost-effective solution could be using a SharePoint page as a repository for crisis management information and making it available and accessible to crisis management team members or key stakeholders as needed.

4.6 *Support and Sustain Efforts*

Completing all phases of the crisis management process without systems in place to ensure future iterations of this practice are smooth, seamless and effective equates to a sunk effort. To ensure that HEIs are continuously learning as organizations and constantly implementing ways to improve, the ideation for a framework that supports institutional crisis management efforts in the absence of an apparent disaster must begin early, during the crisis preparation phase. The implementation of the

framework, including the retained new institutional knowledge, is executed during this phase. Evaluation systems and feedback loops to measure the efficacy of decision-making effectiveness of the crisis management team and areas for improvement need to buttress crisis management leadership at these institutions. Actions taken at each phase of the crisis need to be assessed for effectiveness and to identify areas for improvement. Pertinent questions will gauge the adequacy of resources, information and authority attached to decision-making abilities.

As a corollary, financial resources should be prioritized and allocated to TCM efforts in the form of training for senior leadership members, board members, faculty and staff. One attribute of a transformative leader is integrating positive change in an organization. The authors contend that transformation can only indeed occur when this change is amalgamated and entrenched within institutional culture. At HBCUs, although they may feel that they are always in crisis mode based on the paucity of available resources, leaders must be intentional and strategic about how human capital is leveraged and used prior to, during and post-crisis. At PWIs, where circumstances are less frequently precarious, garnering support for implementing crisis management strategies as early as possible will be crucial to optimize efficacy in the long run. Consistent communication for these strategies' buy-in and support at the senior administrative levels are crucial for future crisis preparation (Kovoor-Misra, 2020).

5 Conclusion

As HEI leaders navigate the vicissitudes of COVID-19 impacts, resilience, flexibility and viability must be at the forefront of their minds. The recovery process will necessitate continuous innovation, capitalization of cutting-edge technology and transformative leaders with the conation to accomplish bold visions that positively disrupt the higher education landscape. At the start of 2020, the world began to identify COVID-19 as a global public health threat. Not many could begin to foresee the impact of this pandemic on humanity and how we go about our daily lives. US healthcare leaders began recognising the virus' severe impact on marginalized groups. It became increasingly evident that the rates and outcomes of COVID-19 varied among racial, ethnic and economic groups. This was direct proof of how social determinants of health affect disease distribution (Bassett et al., 2021). Among the groups disproportionately impacted by COVID-19, by June 2020, Black non-Hispanics represented 20.8% of cases, further supporting the concern that COVID-19 was exacerbated in environments of social and economic inequalities among existing health conditions (Bassett et al., 2020).

Historically, HBCUs have served as the grounds for protest and resistance to social injustice. They are the traditional home to the forces of progressivism. The very creation of these illustrious institutions was to improve the conditions of Blacks in America. One need only consider the paths of leaders such as Dr. King (Morehouse); TJ Jemison (Alabama State), prominent figures in the 1953 Baton

Rouge bus boycott and former President of the Southern Christian leadership Council; or late US Congressman John Lewis (Fisk), to grasp that HBCUs serve as a fertile environment for advocacy. This environment cultivates more civically engaged students who have gone on to lead the continuous fight against systemic racism, inequality and bias. These students have sparked local and national civil disobedience campaigns against injustice (Davis III et al., 2021). This mission is inherent and inseparable from the HBCU experience. Its continuity in the age of COVID-19 has remained important, but specific events over the last 2 years have elevated the need for such leadership incubators. Predominantly White institutions hold esteem in higher education, with premier college rankings, preferred research designations, high levels of funding and student enrolment. They are responsible for a significant portion of the nation's graduates and constitute a vital part of higher education in the United States.

This chapter examined the impact of COVID-19 on HEIs across the board, by exploring the differences and similarities in how HBCUs and PWIs navigate the unprecedented challenges they face. We determined that the most appropriate mechanism to address the pandemic and its challenges is via transformative crisis management. While traditional TCM models have been adequate for traditional challenges, a more aggressive approach must be taken to remain relevant in higher education. We offer a contemporary TCM model to meet the new challenges: RACERS. This model provides a complete strategy for HEIs to address and navigate crises. The pandemic has permanently changed the higher education landscape, and future research will investigate the model's efficacy at HEIs. At the same time, new innovative entities are entering the market, offering products and services that are becoming increasingly more accepted in the job market. The advancement and acceptance of these contemporary non-traditional modes of higher education delivery are indicators of a shifting market. Traditional HEIs must incorporate new strategies and models to survive an uncertain race in the future and remain sustainable.

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Chapter 15

The Relationship Between Leadership Styles and Crisis Management Strategies: The Context of University Education in Bangladesh During the Covid-19 Pandemic



Tania Akter and Mohammad Shahidul Islam

Abstract The chapter advances the new field of leadership styles and crisis management—that of strategy scholarship in the context of university education in Bangladesh during the COVID-19 pandemic. This chapter demonstrates how transformational leadership and management concepts have evolved and reviews contemporary debates about the nature of crisis events and leadership styles in university education during emergencies or difficulties. In contrast, these debates involve crisis management strategies for university education—(1) crisis planning, diagnosis and response and (2) resilience, dynamic learning and strategic renewal. Therefore, the chapter methodologically *reviews the contemporary perspective literature of leadership* styles and crisis management strategies during COVID-19 in university education. Future strategies are suggested in the chapter as a guideline to follow in the crisis management of university education or other levels of education in Bangladesh or other developing countries.

Keywords Leadership theories · Transformational leadership · Education · COVID-19 · Private university · Education policy

1 Introduction

COVID-19 adversely impacted the world, stopping business, education, travelling, shopping, wedding programs, etc. The education industry faced a massive challenge in continuing the studies to make the decision-maker or leader in a critical moment

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_15

(Beauchamp et al., 2021). The chapter relates leadership styles to crisis management strategies in university education in a critical situation. The COVID-19 pandemic has confronted university leaders across Bangladesh with a period of unprecedented crisis. This responsive, small-scale, but Bangladesh-wide review focuses on university education perspectives on leadership and management in the primary stages of this pandemic, contributing to our understanding of this crucial period and the specification of leadership, viz. transformational leadership (Charoensukmongkol & Puyod, 2021; Harris & Jones, 2020). The chapter discusses the leadership theories and style evolution and then analyses the COVID-19 crisis management in university education. A later section is articulated how effective leadership can manage the crisis in university education. Eventually, based on the previous analysis, some strategies are suggested to follow which can play a role in the COVID-19 crisis management for university education. The chapter progresses with three specific objectives in mind, where the first objective is to understand and analyse the leadership theories and styles and the university education system during the pandemic. Second, the relationship is to develop effective leadership styles and crisis management in university education. The third objective is to suggest future strategies based on the understanding and analysis of available literature, which can act as a guideline during the crisis management situation of the education system of countries like Bangladesh.

To accomplish the posed objectives, the chapter methodologically draws upon the current literature on leadership styles and crisis management strategies and the relevant literature on COVID-19. Thus, to respond to the global COVID-19 outbreak, the relationship between leadership styles and crisis management strategies within the context of university education in Bangladesh is analysed in this chapter. These insights may support strategic (e.g. leadership style and crisis management) decision-making and policy outlining activities for the top-level management of university education or other levels of education in Bangladesh.

2 Leadership and Leadership Styles

A leader is responsible for identifying the strengths and weaknesses of the followers and influencing the followers to achieve set objectives (Antonakis, 2021). In addition, a leader should be able to build trust and respect and support the followers while changing the leadership styles based on the situation. Leadership is always an essential topic in any organization, and an organization is a group of people that needs a leader to efficiently and effectively achieve its goals. Leadership is a process of influencing, leading and bringing people in their desired direction efficiently and effectively using their skills and knowledge (Yukl, 2006; Gregoire & Arendt, 2014).

There have been several discussions on effective leadership styles. The Great Man theory of leadership was first codified by Carlyle (1993) in *On Heroes, Hero-Worship, and the Heroic in History*, where it is discussed that leaders are born, not made, and this theory is used to apply to historians and adopted by the male

(Peretomode, 2021). It is discussed that a few great men drive history, but soon after, shortcomings were exposed as Carlyle merely codified a tacit cultural belief. Later there was a discussion of the trait approach focusing on the physical and personal characteristics and competencies a leader should possess. “A trait approach emphasizes the extraordinary attributes, and thus, it differentiates influential leaders from less effective ones” (Spector, 2016, p. 251). It is assumed that the leaders’ behaviour results from essential traits (Truninger et al., 2021).

Moreover, Stogdill (1948), in his comprehensive leadership trait studies from 1907 to 1947, acknowledged five personal characteristics influencing leadership effectiveness: achievement, capacity, responsibility, participation and status. Later, in repeated studies from 1948 to 1970, Stogdill (1974) identified a list of 20 different attributes that are common among influential leaders. In another study, House (1977) discussed the charismatic theory, focusing on five characteristics of charismatic leaders. Each time, research and theories led us to a new list of attributes characteristic of influential leaders. There is much discussion on the leadership styles and competencies for the organization’s success (Rathi et al., 2021). In addition, Lewin and Lippitt (1938) explained the behavioural approach to understanding leadership, which led to behavioural leadership styles of autocratic, democratic and laissez-faire, with an associated list of characteristics. To further study, the University of Michigan assessed more than 500 studies to evaluate authoritarian leadership and democratic leadership effectiveness (Likert, 1961) which identified four leadership systems consisting of leader attributes. Likewise, the Ohio State University refined 1800 leader behaviour descriptions to 150 that identified the characteristics of good leaders (Hemphill, 1949). McGregor (1960), focusing on human motivation, also proposed Theory X and Theory Y to identify attributes of leaders and their views on subordinates.

Moreover, Covey (1991) recognized seven attributes and Goleman (1998) noted five emotional intelligence attributes (habits) of influential leaders. Fiedler (1967) proposed the contingency model of leadership that studied leader task or relationship orientation and the related attributes. Hersey and Blanchard (1969) proposed the situational leadership model that focuses on workers’ job and psychological maturity and the requirement of leaders to adjust to different needs and the leader’s ability to adapt to those different needs. Leaders have abilities to influence subordinates with varying types of power. It became clear that good leadership could not be differentiated from a dominant single trait or style (Crawford et al., 2005). Scholars (e.g. Gardner et al., 2021; Holmes et al., 2021) explained five significant leadership functions:

- Create a vision and focus on it
- Set up a high-performance team
- Keep the team motivated
- Maintain a good rapport with people around to know the information needed
- Satisfy employees to minimize attrition

It is stated that the leadership study attempted to identify attributes of influential leaders and progressed to descriptions of different perspectives and aspects of

leadership. These successive contributions of the leadership studies presented various theoretical frameworks to increase understanding and as a platform for future work. Figure 15.1 attempts to portray the leadership theories without specifically emphasizing one theory. The leadership study began with a focus on historical figures believed to be great, followed by analysing traits related to leaders. In developing the leadership theory at each stage, identifying effective leader attributes circled back to early efforts to identify characteristics commonly found in influential leaders.

Moreover, the contingency theory emphasizes the environmental factors that may influence leadership style to be appropriate in any situation. In contrast, the behavioural theory explains that leaders are “made and not born”, and leadership skills can be learned and developed, opposite to the great man theory. Leadership skills can be learned and developed (Ortez et al., 2021). The participative approach focuses on the subordinates and their feedback on the decision-making collectively. It motivates team members to give importance to their suggestions or inputs (Roberson & Perry, 2021).

A leader’s ability to be understood when a crisis arises and how effectively and responsibly leaders can handle difficulties and issues shows leadership quality. Thus, the leaders can create a long-term impact on the organization.

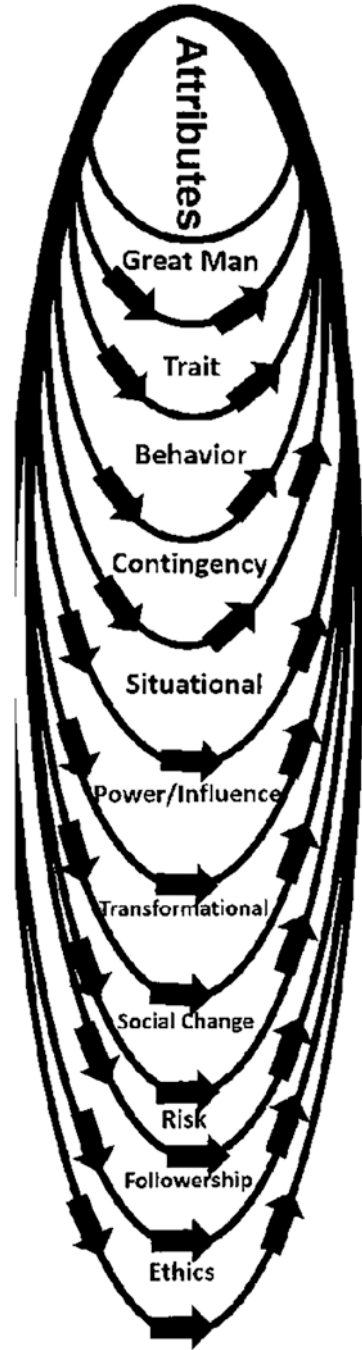
Transformational leadership is emphasized in the literature (Bass, 1985; Schmitt et al., 2016). It is described as a transformation process for the people (Bass & Riggio, 2006). The concept is followed widely in increasing organizational effectiveness and followers’ performance, changing personal values and self-concepts. The theory also discusses that followers need to be respected, trusted and appreciated for the leader to gain their loyalty, which ensures the contribution of everyone (Northouse, 2014). Researchers have claimed that transformational leadership creates subordinate commitment, improves performance and inspires more creative problem-solving (Mittal & Dhar, 2015; Yukl, 1981). Moreover, it highlights followers’ primary motivation, the leadership quality among team members, shared vision and goals and ethical behaviour.

In a higher education environment, it is stated that transformational leadership can engage and encourage faculty in participative educational programmes while enhancing their skills to bring exceptional performance (Pounder, 2009).

Transformational leaders influence and stimulate followers and create challenges for the workers to perform well. In addition, with the help of four components such as idealized influence, inspirational motivation, intellectual stimulation and individualized consideration, they act as a role model for their followers (Nuel et al., 2021).

To implement transformational leadership, teachers are suggested to encourage and engage students in idea-generating discussion, developing students’ capability of critical thinking and problem-solving abilities. Moreover, transformational leadership enhances student performances, motivating students to transcend self-interest and embrace change.

Fig. 15.1 Leadership theory. (Allen, 2018, p. 153)



3 COVID-19 Crisis Management

Despite the negative aspects of COVID-19, it has also brought opportunities. The recent surge of the coronavirus has created worldwide challenges, including in the education sector. Every business sector felt the urgency of innovation and transformational leadership to tackle and handle the challenges. During the pandemic, practical and transformational leadership is necessary for an institutional or national crisis. Any effective and responsive leadership shortage will create a negative organizational impact (Varma, 2021). To effectively manage an emergency, transformational leaders may be present and visible in every difficulty and communicate thoroughly and frequently with the team members to exercise teamwork and sharing attitude (D'Auria & Smet, 2020). Effective crisis management also requires patience and resilience (Ball, 2020). The challenging time and stress have also improved poor team performance with effective and exceptional leadership. Eventually, great leaders protect people, encouraging connection and collaboration, creating a safe environment of trust to manage and control the crisis (Lawton-Misra & Pretorius, 2021).

In addition, during the pandemic or in crisis, when the management of an organization gets hampered and the significant uncertainty creates challenges and pressure to faster decision-making, trust is another critical factor mentioned to control the environment (Lalani et al., 2021).

Moreover, suppose policymakers or organizations do not promptly solve crisis-induced problems and remain unaddressed. In that case, it may damage the firm's organization. The timely, responsive and alternative short-term innovation and leadership can help adjust and survive; however, in the long term it requires thorough analysis with proper research and implications (Cankurtaran & Beverland, 2020).

4 COVID-19 and University Education

COVID-19 has created an enormous challenge for the education sector, including schools, colleges and universities. During the pandemic, the higher education sector has adopted the blended learning approach where the learning materials are available online with live interactive sessions. The teachers, officials and institutional heads face the challenge of shifting the education system from face-to-face to online and virtual education overnight (Daniel, 2020). The institutional leaders and educators struggled to change the education system by managing the assessment planning, learning platform, investment needed to address virtual education, curriculum adjustment, student welfare and effective distant learning. In addition, faculties and staff have been given training and support to teach online with video recordings available in the online learning platform, taking online assessments and online-proctored examinations (Karalis & Raikou, 2020).

The COVID-19 pandemic has interrupted students' lives in many forms, such as level and course of study, point of the programs, transitioning to tertiary education from school or tertiary education to employment and facing particular challenges.

5 Leadership in University Education

When dealing with COVID-19 across the country, the issue that university education leaders encounter additional challenges along with common ones is how to retain quality education and cater to thousands of students' enrolment flow (Mishra et al., 2020). In contrast, the COVID-19 pandemic prohibits F2F classes on the university campus. In contrast, as part of the rising market dominance in private and public university education for the last decade, it has been essential to meet the tremendous demand for quality education and uninterrupted session/semester continuation during COVID-19 (Tamrat, 2021). Within the pandemic crisis of university education, a new discourse (e.g. quality management issue) is generated in which university education leaders become stakeholders or players (Omar et al., 2021).

Thus constituted, leadership becomes a suitable catalyst in a valuable addition to the smooth operation of courses and management of hybrid learning offered by a growing educational leadership (Alam & Asimiran, 2021). To appreciate these leadership tendencies in Bangladesh's higher education system, which may call for the need for crisis management, such as COVID-19 leadership, has been an important call to justify the university leaders in the context of the moral and political economy of education, a new paradigm of education leadership philosophized because of the appearance of the COVID-19 pandemic (Duke et al., 2021).

Within education, specifically, the university, in particular, leaders during COVID-19 have rationalized its approach to reform in stages of observing gradual changes both worse to better and vice versa of the coronavirus effect to education management and experience. Thus, the crisis management strategies for change have been best seen as forming two dimensions: (1) relating to the improvement of the existing system and (2) to its transformation (Harris & Jones, 2020).

First, leadership by initiating the improvement dimension can be said to include the promotion of standard-based reform that is about to be broken because of the coronavirus crisis (e.g. continuous lockdown, economic and social disruption), assigning clear responsibility based on individual university needs for succeeding themselves within a comprehensive framework that provides both pressure and support and expanded provision for professional development (Pan & Chen, 2021). Aside from owning up to the COVID-19 crisis, the respective leaders may need to adjust strategy following the unexpected circumstances in which COVID-19 is an instance. One of the essential goals of a leader in the university is to promote university education by maximizing quality education and increasing its market value (Djaelani et al., 2021). While leaders realize this specific objective, on the other side, user groups (e.g. students, guardians and stakeholders) contribute to the

university's development and the education's prosperity (Fleming et al., 2021). However, during an unpredictable COVID-19 pandemic operating under risk and uncertainty, university education may encounter difficulties from time to time—worse to better and vice versa of the coronavirus effect. COVID-19 problems are unpredictable. Leaders may arise from within their respective university structures and the (vulnerable) effects/negativities in the general economic conditions of the country (Walton et al., 2021).

That is why (second), the leaders have been called to mitigate the crisis aroused from the COVID-19 pandemic. Thus, leaders may foster a culture of trust and safety during the crisis (Antonopoulou et al., 2021). Such leaders can be influential and may allow university education across the value chain to retain and improve quality education to voice university's concerns and bring the needs into focus with regards to mitigating raised disruption because of the COVID-19 crisis—by initiating an ecosystem of truth, integrity and transparency that may put university education management at the focus of the ecosystem (Franks, 2021). During COVID-19, leaders may understand both organizational and sectoral crises better and may also be able to connect university administrations' full support and drive to navigate the change better and revitalize the economic losses (Messersmith et al., 2021).

For example, leadership may benefit the university, employees and society by establishing the value of education, setting out ambitious business goals and fostering organizational culture sharing justice, rights and empathy for COVID-19-affected workforce and student groups (e.g. stricken by the coronavirus, unpaid salary, tuition fees, shifting location, parental health, familywise financial crisis) (Lawton-Misra & Pretorius, 2021). It means the critical step for such leaders is to foster a work/education culture that eliminates the stress of the COVID-19 pandemic among employees and students. In addition, leaders may prioritize maintaining a culture of positive productivity—a standard force of competitive education DNA of the university (Nuevo-Chow, 2021). Thus, leadership may bring to the university education: (1) having the most satisfied students, (2) being an excellent employer, (3) leading financial development in the sector and (4) having a faster than usual market share (Beauchamp et al., 2021).

6 Crisis Management in University Education

Crisis management requires the department chairs or the leaders in the frontline to play an essential role in reinventing higher education, such as policies, practices and the pattern of behaviour at the department level and university-wide. The convergence of crises during this challenging moment of global pandemic, growing economic concerns, heightened partisan polarization, sweeping racial unrest and the ongoing impact of climate change, among others, poses tremendous threats to higher education institutions such as academic chairs with formal leadership responsibilities (Gigliotti, 2021). Other frontline leaders resist and do not initiate because

of fear, distrust and disregard for the financial crisis while taking reinvention efforts (Spais & Paul, 2021).

During the pandemic, as one of the critical crises, department chairs or responsible leaders face decision-making tensions such as task tension, people and relationship tensions, and organizational and role tensions (Gigliotti, 2021). Leaders often struggle to find a balance in their decision-making approach while working with others with limited institutional authority (Mackay, 2021).

The pandemic has created paradoxes for leaders across the higher education sector, faculty, staff, students and other stakeholders. In a situation where access to information and connecting is difficult due to social distancing, the need for agile leadership is felt as deliberate decision-making to continue the workflow. In addition, a well-informed set of principles might guide or give a systematic understanding of the nature of a crisis (Brennan & Stern, 2017).

The best way to take advantage of asynchronous learning is the crisis that has hit the education sector during the pandemic (Daniel, 2020). Asynchronous learning works best in digital formats where teachers get the flexibility of preparing materials and uploading them online. Students can access, watch and learn the materials at home and make an online appointment with the faculty to clarify and discuss particular questions or problems. Thus, students and teachers can have enough room to manage difficulties and crises.

It can be stated that the higher education sector or the universities have been adjusting very efficiently by reinventing their education process from face-to-face to blended learning within a short time. During this time of shifting, influential leaders are seen to innovate and make changes within the existing education system of the institution with appropriate funding and investment very quickly. Rather than ignoring and fearing, facing the challenge requires effective crisis leadership, agility, honesty, compassion, clarity, preparation, trust, resilience and transparency (Elbedour et al., 2021).

Eventually, the COVID-19 pandemic and the overall situation are difficult to predict when face-to-face class learning can be relaunched. However, the higher education management and leadership strategies may be articulated to handle the crisis without hampering students' learning process and flow, including identifying the weaknesses and difficulties students and faculties face, thus improving the student's experience and learning process.

7 Leadership Styles and Crisis Management

Transformational leadership means a leadership style that transforms followers' attitudes, beliefs and behaviours into a higher realm of encouragement. The leader motivates followers to be motivated to advance above and beyond existing levels of accomplishment and execution to even more elevated levels of achievement and performance (Dwiedienawati et al., 2021). In reflection on the above discussion, selecting a leadership style has now been a harbinger of the ultimate success of

university education management during the COVID-19 pandemic (Hussain et al., 2021). Since the spread of the coronavirus across the country has shaken total usual affords and efforts of university education in Bangladesh, the leadership style should be such that can ensure the success of the team (e.g. university education) as a whole, indicating the leadership traits of those of transformational leaders because leaders and followers operate together to promote motivation and morale in transformational leadership (James, 2021).

University education in Bangladesh bears witness to the many modes of the COVID-19 pandemic, with its miserable effects on students, employees, families and societies, emerging to be excavating divides in educational prospects across classrooms and campuses (Alam & Asimiran, 2021). As is well informed, COVID-19 overturned classrooms and campuses across the university at the same time as the pandemic's shattering impacts were being felt in our nation's economy and loss of life. Educators, teams and university leaders have made outstanding commitments at all educational levels and in all parts of the country (Alam, 2021). They are committed to their talents, vitality and resources to address the needs of students and families in their neighbourhoods. Parents and family members have accomplished the same, sustaining their students while responding to profound concerns in their own lives. With the pandemic's limelight on these long-standing challenges, we have a rare moment as a country to take inventory and initiate the hard work of constructing our universities back better and more robust (Valsaraj et al., 2021). Nevertheless, COVID-19's impacts have collapsed unevenly, and preliminary, it is evident that they deepen discrepancies in educational prospects and triumphs, many of them generations in the making. Thus, we must resolve the necessity to ensure that university education is restricted not by discrepancies but by equity and prospect for all students (Mathrani et al., 2021).

Thus, to strategically retrieve the university education management crisis and the impact of the COVID-19 pandemic on university education, transformational leadership may positively influence university leadership's ability to expedite change in university restructuring initiatives, such as the educational learning atmosphere and digital potential of COVID-19 shield learning approaches, and is best suited for coping with the demands of university education in Bangladesh (Alam, 2021; Elgelal & Noermijati, 2015).

Thus, due to the mentioned facts of (1) extra effort, (2) effectiveness and (3) digital skills, these three portfolios that make up a transformational leadership outcome are the degree to which users (e.g. students, employees of university) feel that their leader motivates them, the effectiveness with which they perceive their leader interacts at different assessments of the effect of COVID-19 pandemic (Huang et al., 2021). In contrast, users' digital skills or awareness of different online and offline learning and teaching systems may originate from their leader's working methods concerning others (Sukdee, 2021). It is worth noting that extra afford/effort transformational leaders motivate others to do more than they thought they would do, increase the desire of others to succeed and ultimately improve the willingness of others to work harder, which is essential to meet the COVID-19 crisis (Elgelal & Noermijati, 2015; Valsaraj et al., 2021). Thus, this type of leadership, meaning

transformational ones, may also answer effectiveness as feedback to users as to whether it is effective in meeting the work-related needs of others and whether it is effective in representing the team in university education and leading an effective team. Eventually, leadership satisfaction is related to appropriate leadership methods and excellent and advantageous cooperation with others (Cengiz Ucar et al., 2021).

8 Future Strategies

As reflected above, a crisis is an abrupt and unanticipated event that disrupts an organization's operations. It also poses both a financial and a reputational threat. We have agreed in our above critique that university education has been one of the critical areas (e.g. negative impact on society's financial, environmental and social aspects) impacted by COVID-19 (Sukdee, 2021). According to a recent report by UNESCO, about 1.5 billion students from more than 190 countries have been required to shift from F2F (face-to-face) education to learning through online resources. The effects of the COVID-19 pandemic have been far more significant for university education (Shoss et al., 2021).

The physical distance as a spatial restriction and a stretched maturation period is a time constraint in COVID-19. Furthermore, time restrictions and shortage of resources in the immediate need of continuing education and gathering students in the classroom and other support services (e.g. transport, accommodation, financial backup) further impact university education in classroom settings (Lawton-Misra & Pretorius, 2021). Online learning has always been at the heart of university education management during the crisis. Interestingly, some developing countries in Africa and South Asia used e-learning in emergencies to change online education during/after the pandemic (Al-Karaki et al., 2021).

The core of crisis management has been developing strategies that minimize semester loss and economic loss and increase resilience through a crisis event (Boyacı-Gündüz et al., 2021). Due to resource constraints, university education and weaker digital positioning may be more vulnerable to crisis events. However, university education may have flexibility, learning capabilities, innovation and student relations (Vladova et al., 2021). Compared with preceding crises (e.g. severe acute respiratory syndrome), COVID-19 is more intricate. It generated enormous social and economic complications in all walks of life, including financial lockdown, social phobia, unemployment, stock market crashes, supply chain disruption and de-globalization. Ultimately, it dramatically impacts university education, where millions of students have been the consumer of education services (Bari et al., 2021).

However, identifying specific challenges can be focused on before recommending crisis management strategies to safeguard university education. For example, COVID-19 compresses the place of university education in Bangladesh because of its social distancing that reduces the physical presence of students in educational settings, classrooms, internships, lab settings and dormitories (Karimian et al.,

2021). In addition, COVID-19 compresses university education more toward online education and occasionally compels a hybrid learning approach, which does not rely on a specific time and venue. The COVID-19 pandemic compressed the resource accessibility for university education (Azionya & Nhedzi, 2021). Due to spatial and chronological constraints and the necessity of closing universities, the students' access to face-to-face classes, interaction with professors, attendance in clinical settings, consulting the library and physical presence in educational environments were impossible (Bari et al., 2021). All of these challenges have directly affected university education in all disciplines. After reviewing the mentioned challenges/information, the following strategies are recommended:

(a) *Crisis Planning, Diagnosis and Response*

Universities in Bangladesh should establish a crisis plan in the regular days beforehand. Universities with proper crisis planning may survive and recover better from crisis events, such as during the COVID-19 pandemic. University education leaders must be responsible for formulating a crisis plan involving various administrative levels and promise its timely dissemination (Decker et al., 2021).

University should come forward to have a crisis management team involving staff from various fields and even outside crisis specialists because the university may not have/be able to manage resources (Sukdee, 2021). Having a crisis warning culture is vital to survival from crisis events. Universities need to adopt an inclusive crisis warning culture that considers both academic (teaching and learning resource management) and non-academic factors (infrastructural resource management). Thus, relevantly, university leaders should provide proper training for mid-level managers on crisis stress management and resolving struggles in the workplace (Gold et al., 2021). Timely communication at the management level is essential during crises. Professionals and management widely use social media to channel effective crisis communications. Finally, robustness and flexibility are highly demanding when managing transboundary problems. Universities must customize their strategies rapidly and reorganize their courses of action (Decker et al., 2021).

(b) *Resilience, Dynamic Learning and Strategic Renewal for University Education*

Evidence shows that some crisis-stricken organizations may recover from designed crisis management strategies, and others may not get rid of them. Due to resource constraints and weak reputation value positioning, recovery from crises can never be complete and comprehensive, particularly in university education (Decker et al., 2021). During challenging times, newly established universities have a less chance of surviving during crisis periods than those set during the growth period, likely due to the lack of understanding of good sectoral response and developing organizational culture, which is yet stood among the crowds (González & Pérez-Uribe, 2021). Academic activities based on university quality resources and vital research funds could counterpoise the negative impacts of crises by maintaining the flow of quality education, research and associated services (e.g. job fair, reputed organizational internship arrangement, social and community volunteering

opportunities) and restoring consumer confidence of other counterparts and the community at large (Boyacı-Gündüz et al., 2021).

That is why designated leaders in university education in Bangladesh should pursue new opportunities and establish new directions for their universities during crises such as COVID-19. A diverse and vigorous knowledge store may foster education management after crisis events. Despite the inherent limitation, universities may display resilient market approachability (Gold et al., 2021). A university as an organization's response strategies and repositioning affordability and efforts may define its long-term post-recession performance. Resilience strategies require possessing a leadership mindset; adopting multiple crisis management practices in which transformation leadership, which we have proposed in this chapter, is one instance; upholding a good relationship and robust digital/network; identifying threats and opportunities; and taking punctually and adaptable (Boyacı-Gündüz et al., 2021; Gold et al., 2021).

Unlike the traditional view that universities, if not government-funded, may be highly subject to financial constraints during crises, self-financed universities do not find additional difficulties in seeking financial support during emergencies. However, they suffer more from demand constraints, such as losing students or market share. Given this, the aftermath strategies need to focus on increasing demand by using digital/network/communication platforms such as own online platform for learning, teaching and dissemination to keep exploring students' admission opportunities after crisis events (Yiu et al., 2021).

Post-crisis organizational learning capability can also be critical to recovery. Universities with dynamic solid, innovative capabilities and infrastructures need to be willing to learn from crisis events and recover quickly (Bergdahl & Nouri, 2021). Furthermore, universities need to arrange digital training and seek digital/networking events or special lectures to learn by modelling other universities in neighbouring countries or the other focused examples which have survived through challenging times, such as adapting to the new normal post-COVID-19 (Le & Phi, 2021). Therefore, universities' abilities to endure recession may impact their ability to circumnavigate subsequent recessions, another signal that universities may learn from earlier crises. Learning to fight a situation can be done in formal and informal ways through case studies, networking, workshop, mentoring and digital apps by utilizing universities' technological/academic resources, which are meaningfully budget-friendly (Abbas, 2021; Yiu et al., 2021).

9 Conclusion

This chapter highlights some key points concerning leadership style specification and crisis management strategy recommendations in the context of university education in Bangladesh during the COVID-19 pandemic and how this pandemic resulted in some evolution (e.g. the urge of leadership style and crisis management) in university education. The pandemic resulted in a significant unexpected

interruption in schooling due to two fundamental and interconnected factors: (1) the individual-level faculty members and (2) students who have not been ready to move to education in fear of getting safe from coronavirus in the primary stage. Due to these special conditions of COVID-19's up and down phases, there has been growing interest in research in educational leadership, especially in university education, which may create an environment embedded in a collaborative culture, open to improvements, evaluation and repeatedly sudden challenges. Thus evidently, the chapter, by achieving the second research objective, has suggested that among the different styles of leadership, transformational leadership can be effective as the most appropriate for application in university education in a crisis, as it focuses on the dissection of leadership among academics with different skills to manage in a collective way the range of leadership duties required specifically in crisis events.

Therefore, to fulfil the third objective, the authors have provided insights into how universities in Bangladesh can respond to the recent COVID-19 crisis and have suggested recommendations for leaders. Authors have also proposed a resilience note for university education in Bangladesh, such as a couple of constructs—student relations, dynamic learning and digital platform. However, survival and resilience strategies may depend on context, infrastructure, digital/technological strength, time and crisis coverage. The coronavirus outbreak has created radical mayhem in university education in Bangladesh. Due to the low degree of digital, financial and unfamiliar crisis roused by the COVID-19 pandemic and leadership style, university education in Bangladesh has reacted quickly and effectively to COVID-19.

Nevertheless, the chapter recognized specific crisis planning, management, resilience and renewal issues. As crisis management strategies are a constant process, ongoing improvement by entrenching lessons learned may reduce the risk of the subsequent crisis. Above all, university education in Bangladesh should enhance its resilience and renewal policies to survive and recover from the COVID-19 pandemic rather than depending on support from the concerned ministries and authorities mandated for university education supervision and development in Bangladesh.

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Chapter 16

Leadership in Higher Education During COVID-19 in Australia: A Critical Reflection



Nilufa Khanom

Abstract COVID-19 has emerged as a devastating and unexpected global public health crisis in the last 2 years. The Australian higher education system was very hard hit by this pandemic. This chapter aims to evaluate the higher education institutions (HEIs) leaders' responses during COVID-19 and to explore the leadership styles in Australian HEIs using stakeholder theory to explain what they did. Qualitative secondary data were collected from publicly available documents such as news articles, and the data were processed using thematic analysis. It emerges that Australian HEIs leaders made quick decisions, but the impacts of the decisions were mixed; subsequently, these HEIs leaders are not always 'responsible leaders'. This is the first research on *responsible leadership* that investigates the roles played by HEIs leaders during COVID-19 through the lens of the stakeholder theory. It will improve our theoretical understanding and the practical aspects of responsible leadership.

Keywords Responsible leadership · Stakeholder theory · Higher education · COVID-19 · Australia

1 Introduction

COVID-19 emerged in early 2020 as an unexpected and devastating global public health crisis, leading to widespread economic dislocation and community lockdowns. The World Health Organization (WHO) declared the COVID-19 as a pandemic on 11 March 2020 (WHO, 2020), posing a serious threat to humanity. Consequently, the Australian borders were closed for non-citizens and non-residents, including international students, on 20 March 2020 (Morrison, 2020). The Australian

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_16

297

higher education (hereafter HE) system was the hardest hit sector of the economy due to the closure of Australia's borders, while higher education was, up to that point, the country's biggest industry (McCrohon & Nyland, 2018). A Mitchell Institute report has estimated that the university sector may lose up to A\$19 billion up to 2023 (Moodie, 2020).

Due to the complex nature of higher education institutions (hereafter HEIs), making decisions was challenging for the HEIs leaders as they were confronted with numerous unpredicted issues caused by the dramatic shifts in the spread and effects of COVID-19. HEIs are quasi-commercial organisations (McCrohon & Nyland, 2018) that involve a complex set of stakeholders (Nwajiuba et al., 2020). The HEIs leaders have the significant responsibility of better understanding and integrating the concerns of stakeholders when decisions have to be made; these are for the success of HEIs (Langrafe et al., 2020), and much of this is linked to their leaders' abilities (Cho, 2017).

The Australian university leaders undertook several decisions during the first few months of the pandemic in relation to teaching, research and other support services. Given this context, the purpose of this chapter is to, firstly, evaluate the HEIs leaders' responses to the COVID-19 pandemic and, secondly, explore the leadership styles of the HEIs in Australia using the lens of the stakeholder theory.

Recently, several studies investigated the implications of academic leadership and provided guidelines for education leaders during COVID-19, for example, Strielkowski and Wang (2020), SáJose and Serpa (2020), Ahmed et al. (2020), Nugroho et al. (2021), Samoilovich (2020) and Aagaard and Earnest (2021). Other researchers, for example, Dirani et al. (2020), Al-Dabbagh (2020) and Dumulescu and Mutiu (2021), highlighted leadership characteristics and skills in relation to COVID-19. Meanwhile, Antonopoulou et al. (2020) investigated transformational leadership, Fernandez and Shaw (2020) focused on distributed leadership, and Marshall et al. (2020) examined crisis leadership. In the context of Australian HEIs, Bebbington (2021) proposes future strategies, Tjia et al. (2020) looked at the universities' workforce responses to COVID-19, and Thatcher et al. (2020) assessed the impacts of COVID-19.

Despite the studies that have been published, there is still a significant research gap in the field of responsible leadership in the context of higher education, considering the concerns of the HEIs stakeholders during COVID-19. Moreover, research in the field of responsible leadership has been encouraged to address the HEIs stakeholders' views and roles of the institutional leaders (Waldman et al., 2020), and the stakeholder theory is yet to study in the contexts of HE where the stakeholder groups and their interests are complex (Langrafe et al., 2020).

Education is Australia's biggest service export (McCrohon & Nyland, 2018). Consequently, the economic requirements and competitiveness of the HE market have strengthened the demands for HEIs to meet the needs of stakeholders. It is thus imperative to explore the HEIs leadership styles and their roles in assuaging the concerns and interests of HE stakeholders. Consequently, with the lens of the stakeholder theory, this study aims to address the following questions: (1) What quick

decisions were made by the Australian HEIs leaders during the COVID-19? (2) What were the consequences of those decisions? and (3) what leadership styles did they follow?

The rest of the paper is organised as follows. Section 2 reviews the literature on responsible leadership, Sect. 3 elaborates the theory and research question, Sect. 4 defines the methodology, Sect. 5 delineates the findings, and Sect. 6 outlines the discussion and study implication. Finally, Sect. 7 concludes the research with a note on the limitations.

2 Responsible Leadership

There are several studies available on leadership regarding higher education, such as academic leadership (Settles et al., 2019), distributed leadership (Fernandez & Shaw, 2020), shared leadership (Kezar & Holcombe, 2017) and servant leadership (Eva et al., 2019). This research specifically focuses on responsible leadership; thus, no other leadership style is covered in the literature review.

Responsible leadership (hereafter RL) is one of the newest additions to the literature (Cavagnaro & van der Zande, 2021) and is still a nascent concept (Witt & Stahl, 2016). Consequently, a consensus definition has not yet been established. Several authors defined and delineated RL according to their points of view. For example, Waldman et al. (2020) provided a generic definition of RL: ‘Responsible leadership is an orientation or mindset taken by people in executive-level positions toward meeting the needs of a firm’s stakeholder(s). As such, it deals with defining those stakeholder(s), assessing the legitimacy of their claims, and determining how those needs, expectations, or interests can and should best be served’ (p. 5).

Stakeholders are the central focus of RL. Responsible leaders are inclined to cater to multiple stakeholders’ needs (Waldman et al., 2020). They are accountable to internal and external stakeholders (Javed et al., 2021) and are responsible for organisational value creation (Maak et al., 2016, p. 464). RL is a combination of ethics, leadership, social awareness and stakeholder engagement in organisational practices (Witt & Stahl, 2016). Responsible leaders have obligations to society, the environment and future generations (Pless et al., 2021). Voegtlin et al. (2020) posit that responsible leaders have three roles: *expert*, *facilitator* and *citizen*. When doing all three, they are responsible for achieving excellent performance, motivating employees and creating long-term values for the wider society (Schwab, 2017).

Trustful relationships, shared values and positive outcomes are the key features of RL. Responsible leadership tries to build a trustful and sustainable association with stakeholders, and there is an emphasis on shared values (Miska & Mendenhall, 2018), promoting positive change for society (Barreto et al., 2013) and cultivating a productive climate where employees’ well-being is emphasised (Doh & Quigley, 2014). Recently, Cavagnaro and van der Zande (2021) delineated that responsible leaders are individuals who, shaped by contextual and individual factors, are exerting their influence (behaviour) in order to ‘do no harm’ and ‘do good’ to ‘both

human and non-human stakeholders' (width). Cavagnaro and van der Zande (2021) define responsible leadership with three continuums: *identity*, *behaviour* and *responsiveness*. According to Cavagnaro and van der Zande (2021):

'Identity' is through which individuals are able to develop an integrated identity with an understanding of the self as capable to create value on a care for me, care for me and you, and care for all dimension; 'Behaviour' is through which individuals exert their influence by acting on all three care dimensions to 'do no harm' and 'do good'; and 'Responsiveness' is through which individuals develop a systemic understanding of the interrelationships among the self, the society they live in including the natural and physical world, and the ability to respond to it. (pp. 146–147)

3 Theory and Research Question

3.1 Stakeholder Theory

The stakeholder theory emerged during the 1980s and marked responses to the rising complexity of organisational environments. Stakeholders are 'any group or individual who can affect, or is affected, by the achievement of an organisation's objectives' (Freeman, 1984, p. 46). The stakeholder theory (Freeman, 1984) (hereafter ST) argues that there is a need for a paradigm change in how organisations are managed to align with changes in society that mirror those occurring in many kinds of organisations. As it evolved, ST has pointed out several issues that are important to the strategic management of organisations, such as identifying and prioritising stakeholders, understanding their interests and demands, building and managing strong relationships among various stakeholders and engaging stakeholders in organisational activities as these are key factors to be successful in business (Freeman et al., 2020; Campra et al., 2020).

ST posits that the stakeholders' relationships are based on principles of knowledge and information sharing, mutual trust and involvement in making decisions as these principles create more meaningful values for organisations (Langrafe et al., 2020; Stocker & Boaventura, 2020). The mechanisms of creating and distributing value to stakeholders (Boaventura et al., 2020; Langrafe et al., 2020), catering to multiple stakeholders' needs (Waldman et al., 2020) and incorporating stakeholders' interests within the processes and procedures that promote justice and fair outcomes (Freeman et al., 2020) have been key motivations of stakeholder theorists.

3.2 Managing Stakeholders in Higher Education (HE)

The HEIs are complex organisations with many stakeholders (Nwajiuba et al., 2020). The stakeholder theory has been widely used in strategic management research; it is yet to be better studied in higher education (Langrafe et al., 2020).

Moreover, the ability to meet the needs of HEIs stakeholders has been essential since universities play a key role in society by transferring knowledge to improve the wider community (Ferrero-Ferrero et al., 2018). From the perspective of ST, keeping the concerns of HEI stakeholders in mind, the leaders should promote value creation, distribute these values to stakeholders proportionately (Langrafe et al., 2020) and consider the multi-level contexts (e.g. social, economic) in making decisions that have impacts on the relevant stakeholders (Saubier, 2021). For this study, HE stakeholders include academics, students, employees, administrators, the HEI leaders, governing councils, parents, industry partners, unions, state and federal governments and local communities (Lourenço & Mano, 2017).

3.3 Research Question Development

Principles of knowledge and information sharing, involvement in the decision-making process and alignment of stakeholders' interests in the strategic planning process are what ST focuses on (Langrafe et al., 2020). Stakeholders can contribute with their knowledge, skills and experience to increase the exchange of ideas with organisations (Nghah & Wong, 2020). A greater exchange of information and collaboration allows stakeholders to understand better and implement their interests (Li & Nguyen, 2017). Particularly, in the context of HE, a collaboration between HEIs stakeholders is essential to respond to the needs of contemporary organisations, society and economies (Nwajiuba et al., 2020). Sharing knowledge and information with stakeholders about significant public health issues can give HEIs leaders the superior ability to make decisions about the unexpected challenges in COVID-19. With the logic of ST, I develop the following research question:

Q1. Did Australian HEIs leaders respond quickly during the COVID-19 pandemic based on shared knowledge and information focusing on the preferences of HE stakeholders?

Identifying and prioritising the demands of important stakeholders and improving relationships (Bosse & Coughlan, 2016; Freeman et al., 2020), the mechanisms of creating and distributing value to stakeholders (Tantalo & Priem, 2016; Boaventura et al., 2020), involvement of stakeholders in the decision-making process (Langrafe et al., 2020) and 'principles of fairness' in distributing values proportionately to the stakeholders (Boaventura et al., 2020; Freeman et al., 2020) are the central tenets of ST.

Value is an essential concept in strategy (Garcia-Castro & Aguilera, 2015). Value is 'anything that has the potential to be of worth to stakeholders' (Harrison & Wicks, 2013, pp. 100–101). Value can refer to, for instance, employees' participation in the decision-making process, better payment for personnel, job satisfaction, etc. (Harrison et al., 2010). From this perspective, HEIs leaders should promote value creation and ensure that such values are distributed fairly and proportionately to stakeholders through sound management practices (Langrafe et al., 2020).

Thus, drawing on the literature on the stakeholder theory, I develop the following research question:

Q2: What were the consequences of the decisions made by Australian HEIs leaders that have created values for HE stakeholders?

Responsible leaders positively contribute to organisations' performance (Wang et al., 2015). They are motivated to satisfy the needs of multiple stakeholders to the best of their ability (Waldman et al., 2020) and are concerned about internal and external stakeholders (Javed et al., 2021). Responsible leaders have obligations to society and future generations (Pless et al., 2021) as part of their *citizen role* (Voegtlin et al., 2020) and thus are inclined to practice a responsible approach of 'doing good' and 'avoiding harm' toward stakeholders (Cavagnaro & van der Zande, 2021). Considering all the traits and features of responsible leaders, the following research question is put forward:

Q3. Are Australian HEIs leaders 'responsible leaders' in managing COVID-19?

4 Methods

The study employed a thematic analysis system for identifying, analysing and reporting patterns (themes) within the data (Braun & Clarke, 2006, 2012). Thematic analysis is one of the most common approaches for examining and explaining qualitative data (Braun & Clarke, 2006; Guest et al., 2012). It is appropriate for this research that collects secondary qualitative data as the subject of thematic analysis (TA) goes beyond simply counting phrases or words in a text. It explores explicit and implicit meanings within the data (Guest et al., 2012).

4.1 Data Collection

Qualitative secondary data were collected from publicly available documents such as online news articles/news portals and research articles. Please see Table 16.1 for more information.

4.2 Data Analysis

Data were analysed following the *six phases of reflexive thematic analysis* (Braun et al., 2019; Braun & Clarke, 2012). In the first phase, all the collected relevant articles are read and re-read within the data to familiarise themselves with the content. After reviewing important data features, several codes were generated corresponding to the research objectives. After examining the codes, I organised data to identify significant broader patterns of meaning and themes using existing literature

Table 16.1 Sources of secondary data

Source	Google/Google Scholar	Australian university websites	Peer-reviewed journal articles	Online newspapers/news portal	Government websites
Keyword searched	COVID-19, Australian University, Higher Education, Leadership, Responsible leadership, Academic leadership, Decision making, Managing stakeholders, Stakeholder theory	COVID-19, Annual Reports, Newsletter	COVID-19, Australian University, Higher Education, Leadership, Crisis leadership, Responsible leadership, Academic leadership, Decision making, Managing stakeholder, Stakeholder theory	COVID-19, Australian University, Higher Education, Leadership, Decisions	COVID-19, Australian University, Higher Education, Health and security during COVID-19, Border closures, COVID-19 restrictions
Online newspapers/Portals	The Age, The Conversation, The Guardians, The Australian, The Sydney Morning Herald, The Weekend Australian, www.abc.net.au/news ; www.universityworldnews.com				

on the stakeholder theory and responsible leadership. These codes were then incorporated into organising data relevant to each theme. After multiple rounds of review, all themes were refined and combined to address the central concepts of research questions and then named. In total, 15 codes for 15 sub-themes and three key themes were developed. Finally, I merged the narrative data extracts systematically and wrote the report contextualising the analysis concerning existing literature published on the stakeholder theory and responsible leadership and the research questions. Three main themes emerged as relevant to research questions upon the data analysis: (1) quick decisions made by the Australian HEIs leaders, (2) consequences of the decisions that were made and the values added for HE stakeholders, and (3) features of the Australian HEIs leaders. Please see Table 16.2 for the themes aligned with the research questions.

5 Findings

5.1 *Theme One: Quick Decisions Made by the Australian HEIs Leaders*

Most Australian university leaders moved very quickly to combat the threats from the COVID-19 pandemic, given that the health and security of staff and students were at risk. The job was to ensure the continued running of academic programmes and generate savings. The important decisions included adapting online teaching,

Table 16.2 Key themes and codes

Research question	Key themes	Codes/sub-themes
Q1. Did Australian HEIs leaders respond quickly during the COVID-19 pandemic based on shared knowledge and information focusing on the preferences of HE stakeholders?	Quick decisions made by the Australian HEIs leaders	<ol style="list-style-type: none"> 1. Academic programme management 2. Research management 3. Health issues of students and staff members 4. Security issues of the students and staff members 5. Financial/monetary savings 6. Hardship support to students
Q2: What were the consequences of the decisions made by Australian HEIs leaders that have created values for HE stakeholders?	Consequences of the decisions made and the values added for HE stakeholders	<ol style="list-style-type: none"> 1. Positive impacts: <ol style="list-style-type: none"> a. Financial saving of the universities b. New technology development 2. Short-term negative effects: <ol style="list-style-type: none"> a. The social cost of job cut/ subject cut b. Financial effects of job loss 3. Long-term negative effects: <ol style="list-style-type: none"> a. Shortage of future academic and productive research staff b. International market position
Q3. Are Australian HEIs leaders 'responsible leaders' in managing COVID-19?	Features of the Australian HEIs leaders.	<ol style="list-style-type: none"> 1. Care for stakeholders: <ol style="list-style-type: none"> a. Responsible for health and security issues b. Commitment to academic delivery and upholding academic standards 2. Open and transparent communication 3. Consultation with stakeholders 'Avoid harm': <ol style="list-style-type: none"> 4. Social harm of staff member 5. Financial harm of staff members 6. 'Principle of fairness' to all stakeholders

implementing new technologies, delaying capital works, cutting jobs, reducing the number of courses/units, restructuring faculties, limiting non-essential expenditure, providing hardship support to international students and freezing staff recruitment. The findings seem to support Q1.

Some of the findings are stated below:

The immediate response of Australian universities was to defer capital works spending, reduce non-salary expenditure, scale back the use of casual and fixed-term staff and introduce other short-term measures such as executive salary cuts.... (Tjia et al., 2020)

Since the pandemic started, tertiary education had to cut almost 40,000 jobs in 12 months since (Zhou, 2020b); about 35,000 jobs were lost from public universities. (Littleton & Stanford, 2021)

The University of Sydney vice-chancellor said that in just three weeks, the university had put 1087 units of study online.... (Patty, 2020)

To generate savings, the universities reduced research projects, restructured faculties and curtailed the number of courses. Some typical findings are as follows:

UNSW would restructure into six faculties (Karp, 2020), Monash University cut 103 subjects (Zhou, 2020a), and The University of Tasmania has had to reduce the number of courses offered in 2021 to recoup funding. (Harris et al., 2020)

The Deakin University vice-chancellor said the proposed changes were ‘necessary to secure Deakin’s financial future while ensuring [their] services are effective, cohesive, and aligned to core purposes’. (Boseley, 2021)

5.2 *Theme Two: Consequences of the Decisions Made and the Values Added for HE Stakeholders*

This research found that the decisions had mixed outcomes for HE stakeholders. For example, while job cuts, reduction of courses and fee rises positively impacted savings and added value for universities, they nonetheless generated severe problems for other stakeholders simultaneously. Thus, Q2 seemed partially supported.

The findings, for example, are as follows:

The University of Melbourne vice-chancellor informed the staff about target savings of \$252m in 2021, on top of cuts made in 2020 that created savings of \$360m. (Zhou, 2021c)

Since the commencement of the pandemic, plenty of new technologies have emerged to deliver online classes in Australian universities, and they have added value to the universities. For example,

Many of the new technologies being developed are more affordable than previous educational technologies, allowing institutions to introduce these technologies in their online classes at a reasonable cost. (Saurine, 2021)

The consequences of job cuts had severe ramifications for employees and students. The research found, in one case, where the National Tertiary Education Union (NTEU)’s Deakin branch president mentioned the news of job cut was ‘pretty devastating.., staff morale is at a shallow point because everybody feels exhausted and overworked...’ (Carey, 2021). Elsewhere the Universities Australia Chief Executive stated, ‘The loss of any and every one of those staff is personally devastating, bad for the university community, and Australia’s knowledge reservoir’ (Maslen, 2021).

The reduced staff and budget cuts would have long-term effects on teaching, research productivity and the international market position of each university. The findings are as follows:

The academic and research staff shortages...may put the universities in several risks. These include loss of academic leaders, inability to teach growing numbers of domestic students, a decline in the quality of programs, poor research productivity...This would reduce the attractiveness of Australian universities for international students.... (Marshman et al., 2020)

There are a lot of human and social costs when jobs are lost, and subjects or programmes are cut. For instance:

The chief executive of Universities Australia said, 'You look at people who are struggling to pay rent, struggling to feed themselves. A member described to me somebody who lost his job, is now living in a caravan without electricity'. (Zhou, 2021b)

A lecturer in gender studies said, 'It was a shame a major with a long history was now being abolished due to the university funding crisis'. (Zhou, 2020a)

5.3 Theme Three: Features of the Australian HEI Leaders

This research noted mixed results of responsible leadership styles. Some findings revealed that the university leaders were responsible in some contexts, but not all. The leaders focused on the health and security of their staff and students first; they were committed to delivering existing programmes, upholding academic standards and being empathetic to students. The HEIs leaders were thoughtful about the financial performance and honest in communicating and making decisions.

Considering the problems that emerged regarding the decisions that were evident in response to questions 2 and 3, the research confirmed that research question 3 seemed partially supported. The following are some of the findings for question 3:

In Australia, many have impressively modelled the excellent, regular, and fully transparent communication, internally and externally, necessary in a crisis, and also taken care to preserve the traditional collegial participation in decision-making. (Bebbington, 2021)

A University of Sydney spokeswoman said, '... we were very open with our communication up front, about what this means for what we needed to do...'. (Patty, 2020)

Australian public universities have decided in consultation with stakeholders, such as staff members and NTEU. (Marshman et al., 2020)

Monash University employs all staff on terms consistent with what has been agreed with the NTEU and set out under the Monash University Enterprise Agreement. (Duffy, 2021)

The HEIs leaders were concerned about the HE communities, international students and staff members on casual contracts. For example,

Under the NTEU agreement, displaced casual and fixed-term contract staff will be prioritised for new work. (Harris et al., 2020)

The universities also provided hardship support to international students with emergency financial grants, an AU\$500 emergency cash grant (Maslen, 2020); and offered discounts of up to 20 per cent of tuition fees to international students studying thoroughly online from overseas.... (Zhou, 2021a)

6 Discussion

Drawing on the stakeholder theory, this study investigates if Australia's HEIs leaders have made quick and sound decisions considering the needs and demands of their stakeholders, what the consequences of the decisions are and whether these leaders are responsible ones. The results offered mixed support for the research questions. The findings for the first question established that the Australian HEIs leaders undertook quick decisions on implementing online teaching based on the principles of shared information (Langrafe et al., 2020) from the federal government of Australia about the international border closures (Morrison, 2020) and restrictions due to the outbreak of COVID-19 (e.g., Andrews, 2020).

This research established that the HEIs leaders prioritised the university's financial needs and the student's academic management (Freeman et al., 2020). It is further established that stakeholders, for example, the federal government and health departments, were unique sources of information that created values (Freeman et al., 2020; Boaventura et al., 2020) for universities. They contributed knowledge and exchanged information with the universities (Ngha & Wong, 2020) to combat COVID-19. This made it possible for the universities to better understand their interests and responsibilities (Freeman et al., 2020; Campa et al., 2020) in making decisions during the outbreak.

From the perspective of ST and with the support of the findings of Q1, it is established that Australia's HEIs leader focused on monetary savings and academic management of the universities. They thus incorporated cutting jobs, embraced online teaching, delayed capital works, reduced the number of courses and froze staff recruitment into strategies that would save the university (Freeman et al., 2020). This research further evaluated the decisions' consequences and the values added for stakeholders. The mixed results revealed that the decisions positively impact the financial and academic performance of universities (Schwab, 2017; Wang et al., 2015) and added value for the universities by improving the savings made (Boaventura et al., 2020). However, they failed to add value to staff members who lost their employment, and the blunt fact is that several human and social costs are involved when those kinds of decisions are made (Zhou, 2021b).

The capitalisation, commoditisation and internationalisation of higher education (Croucher & Lacy, 2020; McCrohon & Nyland, 2018) perhaps constitute one of the key reasons for prioritising the financial demands of each university (Freeman et al., 2020) since the HE sector would face a loss of \$16 billion by the end of 2023 (Jackson, 2020). Furthermore, the federal government's decision to keep the Australian universities out of the 'JobKeeper programme' forced the universities to continue with cost-cutting policies (Moodie, 2020). Moreover, the result confirmed that the decision to cut jobs and subjects failed to add value to future generations and the university community (Pless et al., 2021). Such actions would have long-term adverse effects on academic leadership and research productivity (Marshman et al., 2020) and, in turn, have a 'knock-on effect on future generations' (Duffy, 2021).

In making decisions, the HEIs must consider alternative actions which would best serve the key stakeholders (Waldman et al., 2020) and consider the multi-level contexts such as social, economic and future survival for HEIs stakeholders (Saubier, 2021). The research established that Australian HEIs leaders – although they considered the financial context of the university, social consequences of the staff members losing their jobs and future academic and research leadership – have been neglectful in their decisions. The HEIs leaders have failed to cater to all stakeholders' needs (Waldman et al., 2020). They also failed to follow the 'principles of fairness' in distributing value uniformly to HE stakeholders (Boaventura et al., 2020; Freeman et al., 2020).

This research finally addresses the question of whether the Australian HEIs leaders are responsible ones. The findings established that the leaders are responsible in some contexts as they were mindful of the financial and academic implications of policies made to combat COVID-19 and, thus, tried to ensure that each organisation's performance was as positive as possible (Wang et al., 2015). The Australian HEIs leaders ensured greater participation of stakeholders when decisions had to be made (Stocker et al., 2020). The findings further established that they were socially aware (Witt & Stahl, 2016) and concerned about the university community's health, tuition fees paid by overseas students and their subsequent economic hardship (Javed et al., 2021). The HEIs leaders, thus, promoted *citizenship* both inside and outside the organisation (Voegtlin et al., 2020). It can be stated here that Australian HEIs leaders are responsible leaders (Waldman & Galvin, 2008; Voegtlin et al., 2020) in some contexts but not all.

Indeed, the findings also established that the Australian HEIs leaders were not motivated to satisfy multiple stakeholders' needs and did not serve their employees' interests well when jobs and careers were on the line (Waldman et al., 2020). The leaders failed to foster a fair human working climate (Zhao & Zhou, 2019). Finally, this research established that although Australian HEIs leaders have successfully created value on a 'care for me' basis, they were not as successful when creating value on a 'care for you and me' basis. They also failed to create value in the context of 'care for all dimensions'. As is required in the role of 'responsible leadership', the HEIs leaders did not 'avoid harm' and were unsuccessful in establishing 'responsiveness' for all stakeholders (Cavagnaro & van der Zande, 2021, pp. 146–147). Consequently, this research suggests further investigation is urgently required on responsible leadership in the HE context to identify their leadership styles.

6.1 Research Implications

This research contributes to the literature in several ways. First, to the best of this author's knowledge, this is the first study on responsible leadership drawing on the stakeholder theory in the context of HE in Australia. Only very limited analysis has been conducted on the stakeholder theory in relation to HE, for example, Stocker and Boaventura (2020). However, these were not done in the context of COVID-19.

Additionally, the stakeholder theory has yet to be studied in higher education, given that the HEIs have a complex set of stakeholders (Langrafe et al., 2020). This research thus will improve the knowledge of the stakeholder theory in the context of HEIs and COVID-19's impact on them.

In a practical sense, it will improve our knowledge of the HEIs leaders, their stakeholders and how to create and add value for them. HEIs leaders will be encouraged to design and implement better policies and procedures that consider all HE stakeholders' needs and demands. Finally, although there is plenty of published research on responsible leadership (e.g., Maak et al., 2016; Pless et al., 2012; Witt & Stahl, 2016; Doh & Quigley, 2014; Pless et al., 2021), minimal research has looked at it in the context of higher education (e.g., Cavagnaro & van der Zande, 2021). Thus, given this knowledge gap, this article adds new knowledge, improves our understanding of RL and offers insights into RL roles to manage HE stakeholders practically during the crisis elsewhere in the world.

7 Conclusion and Limitations

This research confirms that the Australian HEIs leaders have made several quick decisions during COVID-19. However, although some decisions resulted in positive outcomes regarding saving money/funding, some negative outcomes were evident for many stakeholders. The research further confirms there are mixed results for the leadership style as far as Australian HEIs leaders are concerned; they are not always responsible leaders. This research also has limitations which are noted here. The findings are based on secondary data. Future research should be done on primary data comprising interviews or surveys with Australian university leaders and HE stakeholders, including academics, students, parents, NTEU members and others. This way, a better understanding of the responsible leadership in HEIs and their roles in crisis management will be obtained.

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Part IV
Governance in Higher Education

Chapter 17

Financial Sustainability, Cost-Saving Strategies and Contingency Plans in Higher Educational Institutions During the COVID-19 Pandemic



IKM Mokhtarul Wadud

Abstract This study explores how the higher educational institutions have managed their financial distress as their revenue declined with the rise of the COVID-19 pandemic. In particular, the study examines the mitigation strategies for the adverse impact of the pandemic through cost cuts and changes in budget allocations in Australian universities. Mainstream study analysis examines the long-term equilibrium growth pattern of overseas students' enrolment along with macroeconomic variables such as Australia's GDP and real exchange rates. The study finds a 5.7% trend growth of overseas student enrolment, with a trivial dampening impact of the COVID-19 pandemic on this growth rate. Also, GDP and exchange rates are cointegrated with overseas student enrolment, with a significant short- and long-run impact on GDP on student enrolment. The study also identifies that following any departure from equilibria, such as during the pandemic, the equilibrium long-run trend growth of student number and the macroeconomic variables adjust at 23% per annum. The chapter also provides a critical perspective of the employment redundancies and the contingency plans adopted by the Australian universities during the pandemic in the context of economic theory and empirics.

Keywords Financial sustainability · Overseas student enrolment · Gross domestic product · Cointegration · ARDL model · Australian universities

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_17

317

1 Introduction

The COVID-19 pandemic's unprecedented impact on the history of the last decades has changed people's lifestyles, both socially and professionally. The economic impact has resulted in short-term closure and long-term structural change in many industries in many countries around the world. In particular, the export-oriented industries have been hard hit, including the ones in the service sector such as hospitality and tourism. Within the broad arena of service industries, manpower export and the tertiary sector have also seen severe disruption. With restrictions imposed domestically across countries worldwide and banned or highly restricted international travel, industries requiring cross-border mobility have seen severe downturns. This has also meant unprecedented losses for the airlines across the globe with limited flights operated and loss in revenue.

Among the industries in the service sector, in addition to hospitality and tourism, the tertiary education sector has also been affected, especially in countries where education services have been major foreign exchange earners. An excellent example is the Australian tertiary sector, where overseas students' tuition fees are the second highest revenue generator, following government funding. In 2019, the total income from overseas students' tuition amounted to \$10 billion, more than 50% of total revenue earned from sources other than federal government funding. With the advent of COVID-19, the Australian universities, heavily dependent on overseas students' enrolment, faced severe financial challenges and threats. Marshman and Larkins (2020) showed that over the period 2009–2018, the revenue of the higher education sector in Australia increased by a considerably large 33%, to \$33.98 billion in 2018, which evidenced a financially strong and sustained higher education sector in Australia. In 2019, the total revenue of the Australian universities amounted to \$36.5 billion, with a total expense of \$34.2 billion, resulting in a net profit of \$2.3 billion (DESE, 2019). In 2020, the year first affected by the COVID-19 pandemic, the total revenue earning of the Australian tertiary sector was \$34.7 billion with a total expense of \$34 billion, resulting in a net profit of \$7 billion or \$668.8 million to be precise (DESE, 2020). As apparent from these statistics, the tertiary sector in Australia made a profit overall, *albeit* at a lower level despite the onset of the COVID-19 pandemic in 2020.

In this study, the strategies adopted by Australia's universities are examined in the face of revenue losses, primarily as the sector faced challenges with reduced international student enrolment. A specific approach adopted by the Australian universities has been to curtail the number of staff through their staff redundancy programs. This took place in the face of pursuance by the staff and tertiary union at the consultation stages for the universities to opt for non-employment-related expense cuts and other measures. As the general morbidity of the pandemic slowed down in 2022 and the international borders opened for overseas students, the universities started to experience recovery from their interim financial distress felt over the 2020–2021 period when the impact of the pandemic was most intense.

The rest of the chapter is structured as follows. Section 2 provides a brief overview of the growth of the Australian universities in terms of student and staff numbers and some other key indicators. Section 3 discusses the analytical methodology of this study. Section 4 briefly discusses the data and variables. Section 5 reports the main results of the analysis undertaken in this study. Section 6 discusses the mitigation measures of the Australian universities in view of our results, and Sect. 7 concludes.

2 The Australian Higher Education Sector: An Overview of the Growth

As part of a growing export-oriented sector, Australian universities have seen an increase in student enrolment, associated with growth in staff numbers, construction of newer buildings and structures and a general expansion of teaching capacity, research and provision of services over the last decades. These expansions and growth have been rightfully reflected in these universities' operative revenue and profit. However, as the student enrolment and especially overseas student enrolment growth turned uncertain with the start of the pandemic by the beginning of 2020, the immediate response to these changed circumstances, with forecasted adversities of the pandemic to prolong over an extended period, was to cut jobs, both academic and administrative. The process of job redundancies started in almost an overwhelming majority of the universities, affecting full-time, part-time and casual staff. In a recent study, Littleton and Stanford (2021) indicate that the number of jobs in the tertiary education sector declined by about 40,000 due to pandemic-related redundancies in the first half of 2021, compared to 2020 levels.

Table 17.1 shows the total number of full-time, fractional and casual staff employed in various Australian universities from 2017 to 2021. Note that employment has fallen in all employee categories from 2020 to 2021 due to staff redundancies in view of the COVID-19 pandemic.

Table 17.2 shows the summary of student enrolment in 2019 and 2020 and the change over these 2 years. The numbers are reported for the universities in NSW

Table 17.1 FTE for full-time, fractional full-time and estimated casual staff by work contract, 2017–2021

Year	Full time (number)	Yearly change	Fractional Full time (number)	Yearly change	Casual (number)	Yearly change	Total (number)	Yearly change
2017	90,170	1.9%	16,118	0.3%	22,699	5.3%	128,986	2.3%
2018	92,692	2.8%	16,330	1.3%	25,091	10.5%	134,112	4.0%
2019	95,500	3.0%	17,205	5.4%	24,873	−0.9%	137,578	2.6%
2020	98,915	3.6%	17,943	4.3%	23,946	−3.7%	140,805	2.3%
2021	92,035	−7.0%	16,838	−6.2%	20,305	−5.2%	129,178	−8.3%

Source: Department of Education, Employment and Training

Table 17.2 Student enrolment at the universities in the selected states, 2019–2020

Names of universities	New students (number)			Total students (number)		
	2019	2020	Percentage change (2019–2020)	2019	2020	Percentage change (2019–2020)
New South Wales (NSW)						
Charles Sturt University	10,151	9685	−4.6	23,268	22,848	−1.8
Macquarie University	12,950	13,164	1.7	33,027	32,252	−2.3
Southern Cross University	5694	5280	−7.3	12,218	11,892	−2.7
The University of New England	5087	4780	−6.0	12,956	12,969	0.1
The University of New Castle	9467	10,175	7.5	25,506	26,277	3.0
The University of Sydney	20,413	19,949	−2.3	54,048	54,065	0.0
University of New South Wales	16,627	15,037	−9.6	47,891	45,280	−5.5
University Technology Sydney	13,595	13,066	−3.9	36,027	35,715	−0.9
University of Wollongong	9613	8792	−8.5	25,931	24,927	−3.9
University of Western Sydney	14,480	13,445	−7.1	36,764	36,537	−0.6
NSW total	118,078	113,373	−4.0	307,636	302,761	−1.6
Victoria						
Deakin University	16,206	16,169	−0.2	43,465	43,917	1.0
Federation University	5565	3799	−31.7	13,477	11,836	−12.2
La Trobe University	10,674	9509	−10.9	29,028	27,406	−5.6
Monash University	24,203	22,053	−8.9	70,085	67,993	−3.0
RMIT University	21,176	19,853	−6.2	54,004	52,486	−2.8
Swinburne University	9493	9011	−5.1	26,964	26,666	−1.1
The University of Melbourne	20,842	18,663	−10.5	54,579	52,163	−4.4
Victoria University	8449	7826	−7.4	21,235	21,143	−0.4
Victoria total	116,608	106,881	−8.3	312,838	303,610	−2.9

Source: Compiled by the author based on the data available from the Department of Education, Employment and Training

and Victoria that comprise more than 60% of total tertiary student enrolment in Australia. As the table shows, in New South Wales (NSW), the number of new students enrolled was higher in the universities based in Sydney compared to the regional universities, including the University of Sydney (USyd), the University of New South Wales (UNSW), the University of Western Sydney (UWS) and Macquarie University, ranging from 13,000 to 20,000 over the 2 years 2019–2020. New enrolment declined in most universities, including the regional ones, from 2019 to 2020, as the pandemic started, ranging from 3.9% (UTS) to 9.6% (UNSW). However, new enrolment increased in the University of New Castle (7.5%) and Macquarie (1.7%). Compared to these figures, over 2019–2020, total enrolments in the universities in NSW, which ranged from 12,000 (SCU) to 54,000 (USyd), declined with the range of 5.5% (UNSW) and 0.6% (UWS). However, enrolment increased in UNC (3%) and UNE (0.1%) and remained unchanged in USyd (Table 17.2). In the state overall, new and total enrolment fell by 4% and 1%, respectively.

In Victoria, the 2019 new enrolment ranged from 24,000 (Monash) to around 5500 (Federation University). New enrolment declined within the range of 31.7% (Federation) and 0.2% (Deakin). In 2019, some of the highest total enrolments in the state were recorded by Monash University (70,000), Melbourne University (54,579), RMIT University (54,000) and Monash University (with both having student enrolment of around 54,000) and Deakin University (43,465). While total enrolment declined in most universities in the state in 2020 with the advent of the pandemic, Federation University experienced a major fall in enrolment (12.2%). Some of the other universities recording a loss of enrolment include La Trobe (5.6%), Melbourne (4.4%) and Monash (3%) and RMIT (2.8%). Slight declines in total enrolment were recorded in Swinburne (1.1%) and Victoria (0.4%), and unlike other universities in the state, total enrolment increased at Deakin University by 1% over the 2019–2020 period (Table 17.2).

2.1 The Puzzle of Revenue Loss

An important justification for the redundancies of the universities emanated from the forecasted revenue loss. Arguably, the use of the phrase ‘revenue loss’ ought to be subject to scrutiny for its validity of the notion this is meant to convey. For one thing, by ‘revenue loss’, the universities tried to exhibit how undone they were financially and from the viewpoint of medium- and long-term budget sustainability. While some universities faced great financial difficulty, others may not have encountered similar circumstances. The word ‘loss’ conveys a pessimistic view by itself, further profoundly portraying the proclaimed financial distress the universities were going through, although for a significant number of the universities, the forecasted and realised revenue ‘loss’ or decline did not inevitably result in negative profit.

2.2 *The Corporate Culture: Use of Workplace Change*

Much of the modus operandi of the Australian universities resembles those of the corporate sector, with profit-making agendas kept among the priority lists. Except for the selected top universities, the quality and quantity of students often seem to be a trivial trade-off, which is manifested with the inclination of many of these universities towards raising revenue with increased enrolment unaccompanied by any rise in minimum academic credential requirements and indeed by using lowering of entry requirements at times to raise student enrolment. The concern, if any, of compromising the academic quality of the students seeking admissions seems to be significantly outweighed by the contentment of the management with an additional flow of revenue generated. However, the long-term incidences have been pervasive for such an approach.

In view of the long-term growth patterns discussed above, the remainder of the chapter examines the pattern and equilibrium nexus of overseas student enrolment and macroeconomic variables such as GDP to identify the inherent short- and long-run dynamics. This may help further understand the long-term trend growth pattern of the Australian tertiary sector and prospects for the sector going forward.

3 Methodology

Given the exploratory nature of this study, the analytical methodology adopted is qualitative and quantitative. This study examines the Australian higher education sector as a case study to explore the efficacies of mitigation and resilience-building strategies during the COVID-19 pandemic. This necessitates examining the sector not only when the adversities of the pandemic were at their peak but also adopting a retrospective viewpoint.

The first strategy is to examine the growth pattern of the universities in Australia over the past two decades or so and precisely in the new millennium. The purpose of this analysis is to visualise the trend growth of the international student enrolment, which remains the main source of volatility in the revenue earnings for Australian universities over the past couple of decades.

The strategic options of the universities as part of their mitigation strategies are also modelled using the notion of isoquant and isocost functions, adopting a microeconomic analytical perspective. Finally, this study examines the long-run growth pattern among overseas student enrolment and selected macroeconomic variables. To be precise, this study examines the long-term cointegrating nexus among student enrolment, GDP and exchange rate in the Australian context. As propounded by Engle and Granger (1987), Johansen (1988, 1991) and Johansen and Juselius (1990), a cointegrating relationship exists among a set of variables if all variables are non-stationary at levels or $I(1)$. This indicates that non-stationary $I(1)$ variables could be used directly in model estimations upon testing the stationarity of the

variables. However, Pesaran and Shin (1999) and Pesaran et al. (2001) showed the prevalence of cointegrating relationships for a combination of stationary and non-stationary variables. For testing of cointegration involving a set of series with a mixed order of integration, they propose an autoregressive distributed lag (ARDL) bounds testing method.¹ The ARDL approach suits a variety of empirical contexts, is free from serial correlation and endogeneity, can deal with small samples and is especially suited for capturing both long-run and short-run dynamics.

This study models total overseas student enrolment, gross domestic product (GDP) and exchange rate using an ARDL cointegration framework. The long-run model can be specified as follows:

$$\text{STUD_OS}_t = \alpha_0 + \alpha_1 \text{GDP}_t + \alpha_2 \text{ER}_t + \varepsilon_t \tag{17.1}$$

where STUD_OS represents the total number of overseas students enrolled in Australian universities, GDP represents Australia’s real gross domestic product, and ER is the real exchange rate of the Australian dollar. All variables are expressed in their natural logs. The subscript *t* represents time, and the random error term ε_t measures the deviations from long-run equilibrium.

As shown by Pesaran and Shin (1999) and Pesaran et al. (2001), if the variables are found to be cointegrated, as revealed by the bounds test, the long-run cointegration model is estimated, which follows the estimation of short turn dynamics using an error correction model (ECM) framework. The basic form of the ARDL (*p, q, …, q*) model is given by

$$\text{STUD_OS}_t = \gamma_{0i} + \sum_p^{j=1} \alpha_1 \text{STUD_OS}_{t-j} + \sum_q^{j=0} \delta_{1j} \text{GDP}_{t-j} + \sum_q^{j=0} \delta_{2j} \text{ER}_{t-j} + \varepsilon_{it} \tag{17.2}$$

where *p* and *q* are the order of the lags of student enrolment and the other explanatory variables, respectively.² This enables the estimation of separate ARDL (*p, q, …, q*) models for each sub-sector with optimal lags of the variables.

Drawing on Pesaran et al. (2001), the following ARDL model is estimated to test the existence of cointegration among the three variables using the bounds test method.

$$\begin{aligned} \Delta \text{STUD_OS}_t = & \alpha_{0i} + \sum_p^{j=1} \alpha_1 \Delta \text{STUD_OS}_{t-j} + \sum_q^{j=0} \delta_1 \Delta \text{GDP}_{t-j} \\ & + \sum_q^{j=0} \delta_2 \Delta \text{ER}_{t-j} + \vartheta_t \end{aligned} \tag{17.3}$$

¹The ARDL cointegration technique suggested by Pesaran et al. (2001) is applicable as long as no series is stationary at its second difference or I (2).

²The optimal lag length *p* and *q* can be selected based on any one of the standard criteria. Akaike information criteria (AIC) is used in this study for selecting optimal lag.

where the symbol Δ represents the first difference of the variables. The bounds testing involves the testing of the joint significance of one period lag of the two explanatory variables, STUD_OS and ER . This requires a joint test of significance with the null hypothesis given by $\delta_1 = \delta_2 = 0$. The upper and lower bounds of the critical values are provided in Pesaran et al. (2001). As per the decision rule, the hypothesis of no cointegration is rejected if the F statistic exceeds the upper bound of the critical value.³

If the bounds test reveals the existence of cointegration, then following Pesaran and Shin (1999) and Pesaran et al. (2001) upon reparameterisation of Eq. (17.2), the error correction model (ECM) can be estimated as given below:

$$\begin{aligned} \Delta \text{STUD_OS}_t = & \alpha_0 + \sum_p^{j=1} \alpha_{1j} \Delta \text{STUD_OS}_{t-j} + \sum_q^{j=0} \delta_1 \Delta \text{GDP}_{t-j} \\ & + \sum_q^{j=0} \delta_2 \Delta \text{ER}_{t-j} + \delta_3 \text{ECT}_{i,t-1} + \vartheta_{i,t} \end{aligned} \quad (17.4)$$

The variable ECT is the error correction term. As entailed by the standard ECM specification, this is the lagged error term of the model presented in Eq. (17.2). The ECM (17.4) above exhibits the short-term dynamics of overseas students' enrolment, GDP and exchange rate in the Australian context. Importantly, δ_3 , the coefficient of ECT , provides an estimate of the speed of adjustment towards the long-run equilibrium of the set of the variables in the model; hence, ECT remains a major explanatory variable of interest in the model.

4 Data and Variables

The data used for empirical analysis in this study are mainly obtained from the higher education institution database of the Department of Education, Employment and Training and the Department of Foreign Affairs and Trade (DFAT). The time series data on student enrolments are available from the DFAT online database compiled as part of their education databases for Australian institutions.

The GDP and exchange rate data are obtained from the Australian Bureau of Statistics (ABS). The series on GDP is measured in real figures, as this is expressed as seasonally adjusted chain volume measures, which are directly obtained from the ABS sources. The exchange rate is measured as the real effective exchange rate available from the Federal Reserve of Economic data, with 2010 as the base year.

³ If the F value falls below the lower bound of the critical value, then this implies no cointegration. If the F value falls within the upper and lower bounds, then the test remains inconclusive.

5 Analysis and Results

The tertiary education sector in Australia is heavily dependent on international student enrolment and was thought to be on the verge of seeing a major collapse in its total revenue earning and loss of long-term sustainability. Many universities predicted a downturn that would take years to recover and compensate for. Figure 17.1 shows the number of international students enrolled in the new millennium, particularly from 2002 onwards. As seen from the time chart, international student enrolment saw a continuous increase from 2002 to 2010. Note that even the global financial crisis (GFC) did not seem to have any adverse impact on lowering the enrolment figures. Enrolment number declined slightly from 2010 to 2012/2013 and saw a steady increase over 2012–2019, from 230,380 in 2012 to 440,719 in 2019, marking an increase of 91.3%. As the figure shows, there was a drastic fall in the international student's enrolment in the tertiary sector in 2020 and 2021. In 2020, the total number of enrolled students was 418,403, further plummeting to 366,175 in 2021.

The Education, Skills and Employment Department confirms that the number of international students enrolled on the tertiary sector is 273,654 as of March 2022. As the border has been reopened, these numbers are expected to rise over the

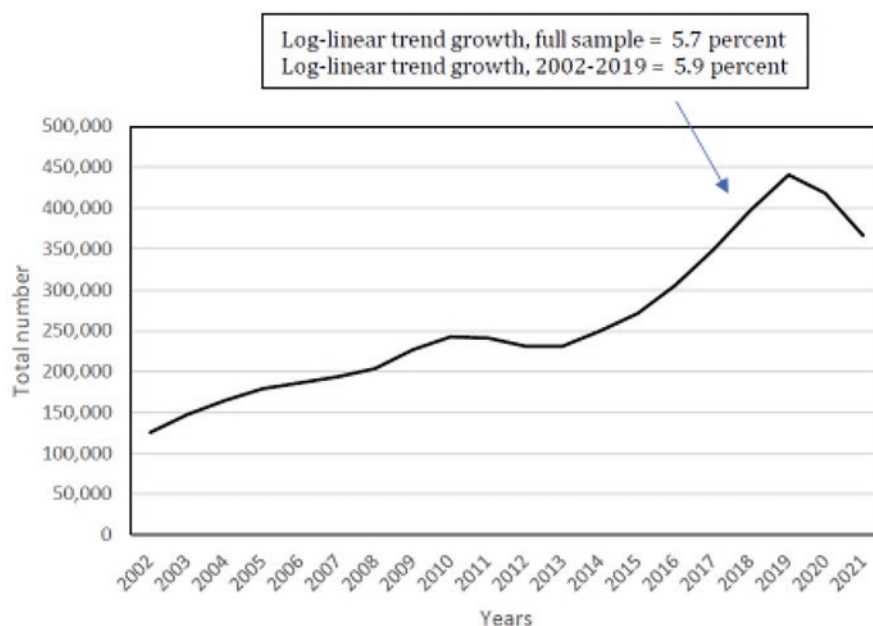


Fig. 17.1 Total international students' enrolment in the Australian higher education sector, 2002–2021

remainder of the year, surpassing the 2021 numbers, and reach the pre-pandemic level. Hence, this evidence does not justify an extended period of loss of sustainability pessimistically perceived by the Australian universities' management at large.

A simple estimation of log-linear trend⁴ models reveals that the average growth of international students has been 5.7% per year over the 2002–2021 period, in contrast to a growth of about 5.9% estimated over 2002–2019. The trend growth is only affected by a meagre 0.2 percentage point with the global enrolment downturn due to the COVID-19 pandemic (Fig. 17.1).

With the inception of the pandemic, a key concern expressed by the management of an overwhelming majority of the Australian universities was financial sustainability. As shown before, many universities took recourse to staff redundancies with little or no non-employment-related cost-cutting strategies adopted, apart from the ones that are inevitably related to lockdowns, safety, changes of teaching mode and other stringency measures. Figure 17.2 explains the choices of the universities in view of their equilibrium. An implicit assumption of this analogy is that the employment and non-employment-related inputs have a trade-off among them for a given

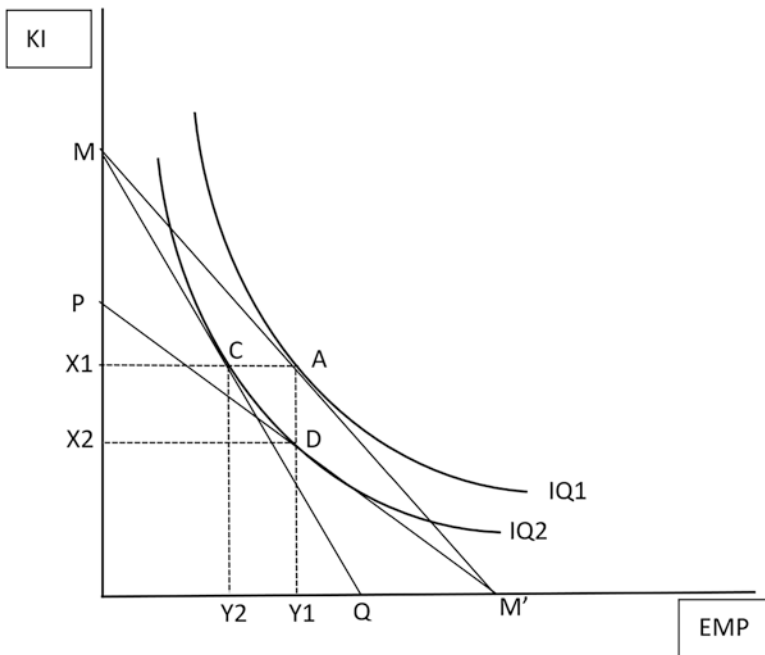


Fig. 17.2 Employment and non-employment expenses and strategic options for the Australian higher education sector during the COVID-19 pandemic

⁴The log-linear trend model is estimated upon linear transformation of an exponential trend model of the form $Y = e^{a+bt}$. The log-linear estimated model is $\log(Y) = a + bt$, where t represents time.

budget. Also, it is assumed that the universities changed their budget allocations during the pandemic period. Suppose a representative university operates at point A (Fig. 17.2), given the iso-quant line IQ1 that indicates the locus of all points earning the university the same level of output with different combinations of employment (EMP) and non-employment-related factors such as capital and other inputs (KI). In the pre-pandemic period, the university operates at point A, the tangent of the university's iso-cost line MM' and iso-quant line (IQ1). This corresponds to the employment of Y1 and capital and other inputs of X1.

With the start of the pandemic, the representative university alters its budget as the management decides on the mitigation strategy for long-term budget sustainability through cutting costs and opts for lowering employment (staff redundancies). The new equilibrium is point C, which is the point of tangency between the iso-cost line MQ that pivots clockwise and the iso-quant line IQ2. This new equilibrium (C) corresponds to a lower overall output of the university, as implied by lower student enrolments and other activities, and reflects changed budget allocations. The KI inputs remain unchanged at X1, corresponding to the new equilibrium point C, while staff employment reduces to Y2, reflecting redundancies. As it entails, an alternative strategy for the university would be to opt for lowering the level of KI inputs, with an equilibrium achieved such as D, or somewhere closer to this point, which is the point of tangency between the iso-cost line M'P and iso-quant IQ2. This achieves the same output level for the university, with no job redundancies. In the Australian context, this has not been the case for many universities that chose to go for redundancies without paving the way for other non-employment cost-saving strategies to be adopted.

To ascertain the long-run relationship between overseas students' enrolment and other macroeconomic variables (GDP and exchange rates), it is necessary to test if these variables are stationary at their levels or their first difference. This requires testing of the unit root in these series. The augmented Dickey-Fuller (ADF) test results for the unit root are reported in Table 17.3.

The unit root test results reported in Table 17.3 suggest that based on the intercept and trend and intercept test equations, the null hypothesis of the unit root is

Table 17.3 Augmented Dickey-Fuller (ADF) test results for unit roots

Variables	Level		First difference	
	Intercept	Intercept and trend	Intercept	Intercept and trend
Overseas students' enrolment (STUD_OS)	-1.39 (0.562)	-4.27** (0.017)	-2.89* (0.066)	-
Gross domestic product (GDP)	-2.688* (0.095)	-1.864 (0.633)	-4.609*** (0.002)	-5.947*** (0.001)
Exchange rate (ER)	-2.253 (0.196)	-2.428 (0.355)	-3.151** (0.04)	-3.646* (0.074)

Note: *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. The *p*-values are reported in parentheses. The variables are expressed in natural logarithms

Source: Author's estimates

rejected for the first difference of both GDP and exchange rates. This implies that both are integrated for order 1 or I(1) time series. The overseas student number is a stationary or I(0) series based on the intercept and trend test and is non-stationary or I(1) when tested with the intercept-only specification. Overall, the requirement for ARDL modelling that the variables can be either all I(1), I(0) or of mixed order of integration is satisfied.

The next stage of the analysis is to ascertain if there is a long-term equilibrium nexus among the variables. The cointegration test results are reported in Table 17.4. For substantive evidence, the test is conducted based on modelling with alternative dependent variables. As per the decision rule of the bounds test, the null hypothesis of no long-run relationship or cointegration is rejected if the calculated value exceeds the upper bound of the critical value of the test statistic. As the estimates of the bounds test statistics suggest, the test statistic F is highly significant for equations of student numbers and GDP and at 10% for the equation of exchange rates. This result implies that the higher education enrolment number of overseas students, GDP and ER in Australia are cointegrated. In other words, these three variables have a long-run equilibrium trend nexus in the Australian context.

The estimates of the cointegrating equation are reported in Table 17.5. These are long-run estimates revealing the elasticities of the variables. As the table shows, Australian GDP remains a significant variable determining the long-run growth of overseas students. The long-run elasticities of student enrolment concerning GDP changes are estimated at 3.71%. This implies that with a 1% increase in GDP, overseas student enrolment increases by 3.7%. This is an intriguing result as this reveals

Table 17.4 Bounds test for the long run (cointegrating relationship) for tertiary student enrolment and macroeconomic variables

Dependent variables in alternate models	Test statistic (F)	Critical F	
		Lower bound (1%),{5%},{10%}	Upper bound (1%),{5%},{10%}
STUD_OS	7.957***	1%: 4.13	1%: 5
GDP	11.925***	5%: 3.1	5%: 3.1
ER	3.767*	10%: 2.63	10%: 3.3

Note: *** and * represent significance at 1% and 10% levels, respectively. The test statistics are based on conditional error correction regression estimated with a restricted constant

Table 17.5 Estimates of long-run elasticities

Dependent variable: employment (STUD_OS _{t})		
Explanatory variables	Coefficient estimates	p -values
GDP _{t}	3.712** (1.02)	0.011
ER _{t}	-1.494 (0.951)	0.168
Constant	35.001** (11.986)	0.027

Note: ***, ** and * represent significance at 1%, 5% and 10% levels, respectively. Standard errors are in parentheses. The variables are $STUD_OS = \log$ of number of overseas students enrolled; $GDP = \log$ of GDP, and $ER = \log$ of exchange rate

Table 17.6 Adjustment speed and short-run effects for overseas student enrolment and macroeconomic variables

	Dependent variable: $\Delta\text{STUD_OS}_t$	
	Estimated coefficients	<i>p</i> -values
$\Delta\text{STUD_OS}_{t-1}$	0.996*** (0.114)	0.000
$\Delta\text{STUD_OS}_{t-2}$	-0.571*** (0.109)	0.002
ΔGDP_t	-2.716*** (0.348)	0.000
ΔGDP_{t-1}	2.932*** (0.545)	0.0017
ΔGDP_{t-2}	4.45*** (0.879)	0.0023
ΔER_t	0.114 (0.099)	0.294
ΔER_{t-1}	0.204 (0.018)	0.108
ECT	-0.229*** (0.0332)	0.001
<i>R</i> squared	0.97	
Serial correlation (Breusch-Godfrey, F stat)	0.94	0.462
Heteroscedasticity (Breusch-Pagan-Godfrey, F stat)	0.597	0.776
Normality (Jarque-Berra stat)	1.45	0.483

Note: *, ** and *** represent statistical significance at the 10%, 5% and 1% levels, respectively. The standard errors are in parentheses. The symbol Δ represents the first difference operator. The dependent variable is the first difference in the log of overseas student numbers for the Australian tertiary sector. The estimates are based on the selected ARDL (3,3,2) model using the Akaike information criterion (AIC)

Source: Author's calculations

that Australian economic growth and prosperity remain important factors determining the long-run influx of international students, which in turn assures prosperity of the higher education institution at a sustainable level.

Table 17.6 reports error correction model estimates that capture the variables' short-run dynamics. As the estimates show, overseas students' past enrolments (up to 2 years) significantly impact current enrolments. Also, real GDP exerts a significant combined positive impact on overseas student enrolments (Table 17.6). In contrast, exchange rates do not seem to impact student enrolments significantly. Table 17.6 also reports some diagnostic test results towards the bottom of the table for statistical validity and reliability. The insignificant test statistics suggest an absence of serial correlation and homoscedasticity and normality of the residuals, which suffice the requirement of reliable econometric estimations.

An important information conveyed through the results presented in Table 17.6 is the adjustment mechanism towards a long-run equilibrium trend. As the statistically significant estimate of the error correction term (ECT) reported in Table 17.6

reveals, following any departure from its long-term trend growth path, the equilibrium nexus involving overseas student enrolment, GDP and exchange rates adjusts at the reasonably high rate of 23% per year. This estimate also implies the quick response of the Australian tertiary sector towards long-term growth following any shock such as the one inflicted by the COVID-19 pandemic. In other words, there seems to be evidence of the resilience of the Australian tertiary sector in periods of uncertainty and external shocks. In a situation such as the COVID-19 pandemic, the actual pace of recovery could be even faster with increased remote teaching, learning and research activities, which is already evident in the Australian tertiary sector.

6 Discussions

As the preceding analysis suggests, the mitigation strategy adopted by the Australian universities to weather the adverse impact of the COVID-19 pandemic may not have been appropriate in many respects. The overall atmosphere in academia was exceptionally pessimistic, and the forecast for future financial positions may have been subjectively done across the universities. With the given production and cost conditions, this study shows how the universities could opt for non-employment-related cost cutting, thereby minimising staff redundancies while keeping the expected output level and profit margin unaffected, to the extent this is feasible.

6.1 *Strategic Need Versus Hidden Agenda*

Many universities adopted the mainstream cost-cutting strategy through staff redundancies and were enacted for financial sustainability. However, the overwhelmingly bleak forecast for the future operation of the universities as identified by the management at the beginning of the pandemic was made with the argument of ‘revenue loss’, a phrase that has an inherent pessimistic tone, as discussed before, which otherwise just meant decline in revenue. However, little or minuscule details were shared about the expected direction of net profit and whether the universities would have incurred negative profit (true loss) without the extensive cut of the employment-related expenses. One finding of this study is that the number of international student enrolment, the main source of revenue earning, grew over the last two decades by about 5.7% per year, and this rate was compensated for the COVID-19 pandemic by only a small margin. Besides, as identified in this study, overseas student enrolment seems to have been cointegrated with macroeconomic fundamentals. This indicates even stronger resilience combined with monetary and fiscal policy support and improvement in preventive measures such as vaccine rollouts. Despite these, the employment-related cost-cutting strategies may have been adopted due to other

undisclosed agendas, including reducing the size of a school or department, individual or management preferences for specific staff(s), campus restructuring and other short- and long-term growth plans. This entails that the forecasted financial crisis and revenue loss had been used as excuses to achieve other hidden agendas that were otherwise cumbersome to enact and implement.

6.2 *The Reserve Not for Contingency*

An important result from this study is that the long-run growth pattern of overseas student enrolment coupled with GDP and exchange rate adjusts at about 23% per year, following any departure from their equilibrium trend growth path. Given this, it appears that the prospect and sustainability of the tertiary education sector in Australia should be more closely aligned with macroeconomic fundamentals, such as Australia's GDP and economic growth and outlook, for that matter, and not with the unknown span and magnitude of morbidity of the pandemic and then succumbing into hectic and unmanageable circumstances with apparent shortages of full-time staff in the face of the revival of the student enrolments as the borders reopen and student enrolments tend to rise. Implicit in this argument is the need to mitigate the interim budget sustainability challenges by curbing non-employment-related expenses and drawing funds from the universities' reserves accumulated with profits made over the years. In terms of Fig. 17.2, this indicates that the university could refrain from budget cuts, drawing funds from the reserve or other sources, as an interim measure, which would entail that the university remains on the same iso-cost line MM' , resulting in no change in the equilibrium operation indicated by point A. Although many universities in Australia have considerably large reserve funds, these funds were mainly kept untouched as the COVID-19 pandemic started and financial uncertainties with revenue decline were forecasted.

7 **Concluding Remarks**

COVID-19 pandemic began omnipresent throughout the world by mid-2020, affecting various economies and societies as the infection rates and associated morbidities tended to intensify. Widespread lockdowns, safety concerns and other regulations stifled specific industries such as airlines and hospitality. For that matter, the higher education sector and the universities in Australia forecasted a significant revenue loss due to the sector's overwhelming dependence on student tuition, particularly on the tuition fee paid by international students. The bleak future with forecasted revenue loss resulted in adopting several strategic measures to mitigate the adverse impacts and build resilience against the adversities of the pandemic.

This study examines the long-term growth of overseas student enrolment with macroeconomic variables such as GDP and exchange rates in a cointegrating framework. The study also critically examines the justifications of the universities' strategies that predicted a bleak outlook of financial sustainability during the pandemic and post-pandemic periods. In particular, the cost-cutting strategy through staff redundancies with little or disproportionately lower non-employment-related cost cut is evaluated in view of the efficacy of such strategy, the reserve accumulated by the universities and the long-term growth nexus of overseas students' enrolments.

This study has several important findings. First, the loss of the number of international students, which was the biggest fear in the minds of the management at various universities, does not seem to have had a lasting adverse impact on the universities. The stagnant numbers of enrolments in 2020 were mainly due to lockdowns, travel bans and other stringency measures and not due to the morbidity associated with the pandemic. The trend in growth rate of the international student enrolment from 2002 to 2022, which was 5.7%, was only lower by 0.2 percentage points compared to the growth rate from 2002 to 2019. Second, a long-term equilibrium relationship exists between overseas student enrolment, GDP and exchange rate. This indicates that Australia remains an attractive destination for international students for the general strength and prospect of the Australian economy from a longer-term perspective. Third, this study estimates the long-run elasticity of the number of international student enrolments with respect to Australian GDP to be 3.7%. This result should provide important policy guidelines regarding long-run sustainability for the Australian tertiary sector as this shows the percentage increase (3.7) in overseas students due to a 1% increase in Australia's real GDP. This also implies that Australia's economic fundamentals as a prosperous developed country matter the most for overseas students to choose Australia for higher education. Fourth, an essential result of this study is that following any departure from the long-run equilibrium, the integrated nexus of international student enrolment, Australian economy and exchange rate returns to equilibrium through an adjustment mechanism of about 23% per year.

Overall, there seems to be evidence of a pessimistic approach adopted by many universities in Australia, with staff redundancies identified as an unavoidable strategic choice. Understandably, remote learning has been exceptionally successful with high-speed Internet, and many domestic and overseas students have been able to pursue their programs despite lockdown and cross-border restrictions. Drawing funds from their reserves during the pandemic was a rare act, if at all, of the universities, which created a ground to cast doubts about the universities' contingency plans during the crises. While all universities used the dubious phrase of revenue loss, many of them recorded positive profits. As it appears, the pessimistic outlooks were devoid of an accurate and pragmatic forecast of the expected and inherent revival of the long-run growth path of the tertiary sector. Apart from easing restrictions, there are other obvious avenues to improve overseas students' enrolment, as suggested by Welch (2022), through pursuing cross-border dialogues to ease off adversities of geopolitical complications. Overall, as shown in this study, the revival

of the tertiary sector of Australia is not meant to be cumbersome, given the inherent long-run growth of the international enrolment tied to Australian economic prosperity.

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Chapter 18

Information Dissemination During the COVID-19 Outbreak Among the Students at the Tertiary Level in Bangladesh



Syed Mahbubur Rahman, Mahreen Mamoon, Afdalin Bin Haque, Md. Joynal Abedin, Rezwanul Haque, Rezbin Nahar, Md. Nasir Uddin, and Md. Shamimul Islam

Abstract People deserve credible information from responsible government units and authentic news from various sources, including online, social media and other networks, to learn and prepare for any epidemic and pandemic. Social media and online news portals are the main sources for the public to explore news on the coronavirus disease (COVID-19). This research aims to investigate the relationship between news and social media, awareness about, attitude and the action of the youths towards the spread of COVID-19 in Bangladesh. This research followed a structured survey method to investigate responses towards COVID-19 of Bangladeshi

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tertiary-level students of different disciplines. The study analysed students' access to information through electronic and paper versions of Facebook and newspapers. Factor analysis was conducted for a sample of 705. A five-factor solution has been proposed. Access to information is critical in developing a diverse and effective strategy for combating COVID-19. Besides, awareness about the disease, Facebook access, attitude and reliance on local media were identified as key factors.

Keywords COVID-19 · Bangladesh · Information · Social media · Factor analysis

1 Introduction

The first onset of a clustered case of unusual pneumonia was noticed by clinicians in Wuhan City, China, around late December 2019, and within a month, the causative organism was identified as a novel coronavirus (McCloskey & Heymann, 2020). The rapid spread of the virus and the increased fatality have taken the world by surprise; the livelihood of the people affected by the virus is inevitable with or without infection. The history of mankind includes significant evidence of infections with diseases caused by the virus. The history of pandemics, especially the influenza pandemic, is quite old and known to have recurred irregularly during the ninth century (Morens & Taubenberger, 2018). The recent observations and evidence of infections also indicate the severity of the virus-causing influenza. By observing various consecutive novel subtypes in human, animal and bird species, Webby and Webster (2003) predicted the influenza pandemic. The H5N1, commonly known as severe acute respiratory syndrome (SARS) caused by a novel coronavirus in Hong Kong; H7N7 in the Netherlands; H1N1, known as swine flu, in Mexico and the USA; and H3N1 in South Korea are few pandemics in the recent past declared by the World Health Organization (WHO). The latest addition to the above is coronavirus disease, termed COVID-19. It is not just a pandemic; instead, it can be recognized as a faster pandemic. The speed of COVID-19 might be higher than that of any media except electronic media or social media. Appropriate time of awareness may help in social distancing to stop it. Social media can be a promising tool in building awareness about COVID-19, particularly in developing countries lacking preparation to fight the spread of COVID-19-type disease.

Bangladesh officially declared the first case of infection and death on 7 and 18 March 2020, respectively. The substantial time gap between the identified first case in China and Bangladesh and travel volume between the countries raised huge concern on social media regarding whether any restriction on access to information is imposed. The debate was fuelled by the contradictory actions of the government to lockdown the country, although officially, it was termed as a 'holiday' with comparatively lower fatalities and growth while the rest of the world was in turmoil. Social media is a platform to know and share such debates. General peoples' affective responses, perception of risk and knowledge and awareness of prevention can be explored by observing their usage of social media; hence, the role of social media

in times of infectious diseases has come in numerous studies (Oh et al., 2021). Therefore, this research aims to investigate the nexus between news and social media, awareness and attitude and the action of youths addressing the spread of COVID-19 in Bangladesh. Based on that, this research also plans to find the role of higher education institutions in a post-COVID-19 state.

Bangladesh is an interesting location to investigate the topic because of several reasons. First, it got time to reveal information about COVID-19 from other countries before being infected. Experiences and news from other countries shared on social media had the potential to build awareness before the entrance of COVID-19 in Bangladesh. Second, the diagnosis of COVID-19 was not widely practised initially, and there was an information gap between the actual number and officially confirmed cases among different media. In that circumstance, people relied on social media sharing content, which helped to build awareness such as the symptoms of different people, refusal from hospitals to admit suspected COVID-19 patients and even death with the symptoms of COVID-19. Third, the growth of Internet users is faster than the growth in socio-economic development, and youth are normally the social media generation who spend more time on social media (Islam & Hossin, 2016; Miah, 2008).

This paper contributes to the existing literature in several aspects. While most of the recent literature addressing COVID-19 focus on virology, the development of medicine and the spread of the virus, this chapter takes a social approach towards disseminating information among the youth population. This research concentrates on a developing country that initially lacked preparation against disease outbreaks. Finally, this research focuses on the young population and is replicated in other African and South Asian countries currently exposed to or likely to be impacted by COVID-19 or similar outbreaks.

After the introduction, this paper discusses social media's importance in promoting public health and building awareness about infectious diseases in Sect. 2. Section 3 discusses the methods and materials used for this study. Section 4 shows the results and elaborates the discussion, while Sect. 5 concludes the paper by explaining the limitation and further research opportunities.

2 Social Media, Educational Institutions and Public Health Promotion

This section emphasizes some previous literature regarding social media's importance in promoting public health or building awareness about infectious diseases. Social media has been termed the 'participative Internet' (Fox, 2011), which is a very useful tool to share information in the fastest possible time across countries and to promote public health awareness (Korda & Itani, 2013; Lyson et al., 2019). The use of social media online in the recent past has opened newer avenues for measuring health and related behaviour since online media has the power to track

events and trends in real time in the context of public health and has also been demonstrated for influenza surveillance (Salathé & Khandelwal, 2011; Ginsberg et al., 2009; Signorini et al., 2011). In times of infectious disease outbreaks, people have been known to use social media to network with their near and dear ones and have gathered related information using social media sites as the medium of sharing information (Jang & Baek, 2019). Less credible information from responsible government units affects the use of online sources, social media and networks for disease-related information. In times of biased and vague traditional media providing relevant and timely information to the citizens, social media sites cater to major and imminent information needs (Jang & Baek, 2019; Yoo et al., 2016; Oh et al., 2021).

Digital media, nowadays, is not only a source of data for media researchers but also a new and emerging source for researchers from various spheres of academic disciplines (Scheepers et al., 2006). Tanacković et al. (2014) have argued that the use of newspapers in research, although used occasionally and perceived as not credible and reliable, counts for around three-fourths of academic and scholarly works. Since the investigation of awareness and perception about diseases like COVID-19 is difficult with no and/or restricted access to inside information, journalistic writings and social media like Facebook are the only publicly available sources to explore the level of understanding among the mass population.

Social media users can be exposed to relevant disease-related information and hence can develop risk perception and start practising preventing behaviours towards infectious diseases and, therefore, heightened emotional responses (Oh et al. 2021). Hence, crisis management may not be effective in ignoring peoples' emotional responses by considering the responses even if they seem not rational or overly conscious. Information remains incomplete, and answers to the key clinical and epidemiological questions remain unclear at the early stage of the outbreak. This deficit seems to be due to the constraints of investigation and unwillingness to engage and share information (McCloskey & Heymann, 2020).

Research highlighting the association between COVID-19 and education institutions concentrates mainly on the effective delivery during online lectures (Bao, 2020), COVID-19 impact on education (Das et al., 2021) and assessment of students on online platforms (Shehata et al., 2021), for instance. Besides, research on students' awareness of COVID-19 has focused more on the students studying medicine or health (for instance, Hamza et al., 2021 and Olum et al., 2020). However, educational institutions' role in raising awareness or increasing the confidence to assess various news sources, including social media, is among the underexplored research areas. Al-Hosan et al. (2020) investigated university teachers' role in awareness and health protection measures, among others, in Saudi Arabian context, to fill the gap. The authors found that teachers' cognitive responsibilities to raise COVID-19 awareness among students were ordinary and had a varied level of perception.

3 Methods and Materials

This research followed a structured survey method to investigate responses of Bangladeshi university students towards COVID-19 by analysing their access to information, particularly through Facebook and newspapers of both electronic and paper versions. Students' awareness, trust and actions addressing COVID-19-related information sharing were also analysed. The questionnaire included 21 self-report items. Responses were on a five-point Likert scale ranging from 1 = 'strongly disagree', 2 = 'disagree', 3 = 'neutral', 4 = 'agree', and 5 = 'strongly agree'.

Factor analysis was initially implemented in education and psychology and later used in health science (Williams et al., 2010; Pett et al., 2003). Major objectives of exploratory factor analysis, which are also the core objectives of this research, are to lessen several variables into a smaller set of variables, to establish underlying dimensions between measured variables and latent constructs and thereby allow the formation and refinement of theory, as well as to provide the construct validity evidence of self-reporting scales (Williams et al., 2010). Principal axis factoring was used for the extraction of factors.

3.1 Data Source and Sample Size

An online questionnaire was circulated during the third week of March 2020 following convenience sampling among university-level students in Bangladesh. There are various suggestions about sample size, which range from 50 (Sapnas & Zeller, 2002) to 100 to 300 to 1000, where 100 samples are treated as poor and more than 1000 are considered excellent (Hair et al., 1995; Pett et al., 2003; Hogarty et al., 2005). This research has collected data from 752 respondents, and after cleaning the data, factor analysis was run for 705 samples (444 males and 261 females) with an average age of 23.2 years. Affiliation of the respondents showed a total of 24 universities in the sample.

3.2 Data Analysis

Initially, the factorability of 21 items was examined following the guidelines of multiple well-recognized criteria for factorability. The data were not normally distributed, and few (i.e. <25 out of 210) correlations among the data were greater than 0.3. There were no outliers in the data, which ensured the sufficiency for factor analysis with a sample size of 705, providing a ratio of over 33 cases per variable. Besides, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) and Bartlett's test of sphericity justified factorability (Table 18.1). Anti-image option to evaluate the MSA showed suitability for factor analysis (Williams et al., 2010). The diagonals of the anti-image correlation matrix were also far above 0.5 in almost all

Table 18.1 KMO and Bartlett’s test

Kaiser-Meyer-Olkin measure of sampling adequacy		.816
Bartlett’s test of sphericity	Approx. Chi-square	4019.818
	Df	210
	Sig.	.000

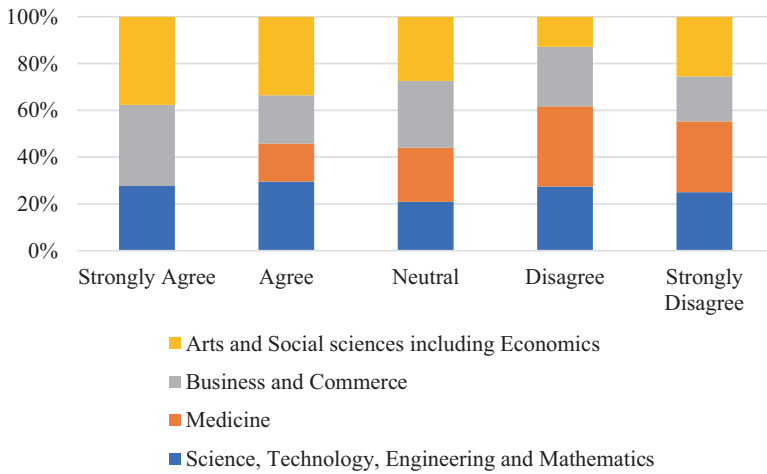


Fig. 18.1 Trust in Facebook newsfeeds about COVID-19 in Bangladesh

the cases. The determinant of the correlation matrix was 0.003, which was far above the threshold value of 0.0001. Finally, principal axis factoring was used.

4 Results and Discussion

4.1 Descriptive Analysis

Facebook newsfeed comprises stories from friends, followed pages and groups joined. Facebook uses the ranking process to organize all stories for individual users to see the relevant content of their interest based on their viewing, clicking and scrolling history (Myers, 2019). This statement alone serves as a crucial juncture in the research process in measuring the relation between knowledge and attitude. Almost no respondent from medicine has strongly agreed to trust the newsfeed on Facebook. They are assumed to be the front runners in handling the patients’ surge; hence, they leaned more towards disagreeing with the statements usually found on Facebook. This is not the case with other disciplines, as many buy everything they see and use the minimum rationale to evaluate the information’s validity (Fig. 18.1). This phenomenon justifies the requirement of some forms of training about credible sources of information.

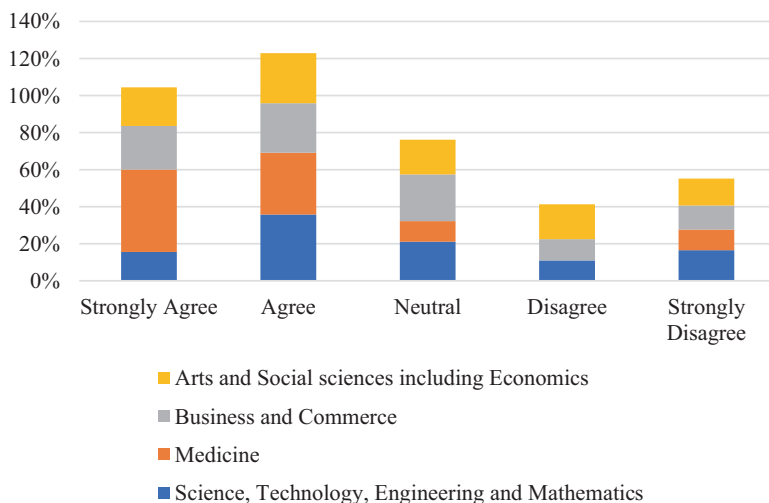


Fig. 18.2 Sharing of information knowledge through Facebook

Sharing of information through social media has a significant repercussion since the viewers would access information to counter the claim or they might ask for proof of the statements claimed. The tendency to the responses recorded in simply agreeing to the statement exceeds the 100 marks from the art students (Fig. 18.2). They are also atop the ‘strongly agree’ scale. However, since the disciplines of the majors in the sample are not equally distributed, the relations among the differences in responses cannot be inferred into a significant finding.

There is a significant amount of trust issue against the quality of news and information disseminated by Bangladeshi news media. Altogether the response rose to just over 50%, with female respondents pressing on the claim more than their male counterparts (Fig. 18.3). The news media must adhere to the influence of government directives to avoid spreading panic/rumours about the spread of COVID-19. Since the population representatives are well exposed to multiple sources of information, they can conveniently compare the ongoing news brief and identify the implied lack of transparency in the quality of the news shared by the media. As time passes, increasing or not increasing infections are causing uncertainty among all, irrespective of expertise. Cross-sectional data may be assessed to connect whether the agreement of the statement is made by habitual gesture where the statement itself may seem to lead the respondents towards agreeing. The focus should be on the portion that ‘reflects the actual scenario of the whole country’. The respondents’ understanding of the statement can be questioned as their ability to differentiate Dhaka-focused news compared to news around all other districts of Bangladesh.

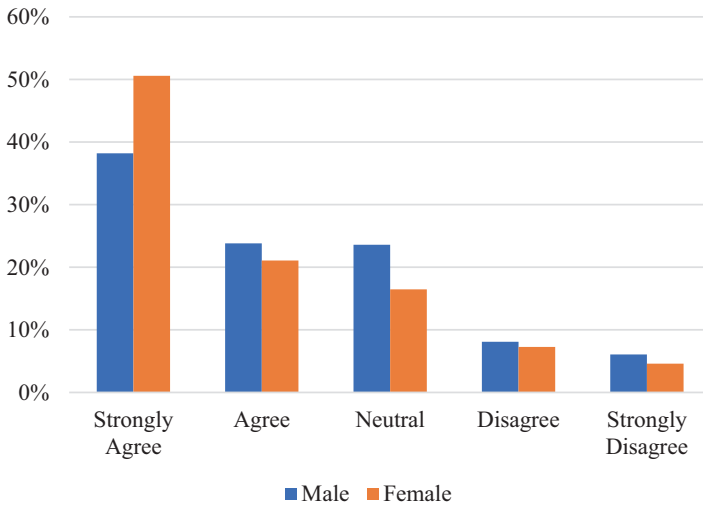


Fig. 18.3 Non-reflection of COVID-19-related local news in a Bangladeshi newspaper

4.2 Exploratory Factor Analysis

The initial eigenvalues indicated that the first three factors explained 22%, 12% and 9% of the variances, respectively. The fourth, fifth and sixth factors had eigenvalues of just over 1.00 (i.e., 1.209, 1.182, 1.027), and each explained around 6% of the variance. Visual examination of the scree plot (Fig. 18.4) showed five factors sufficiently. Besides, a Monte Carlo PCA parallel analysis suggested five factors. Accordingly, the five-factor solution using the promax rotation method was preferred, which explained 54% of the variance. A total of five items were eliminated since they did not contribute to a simple factor structure, and two items were loaded with the sixth factor. The factor loading matrix for the solution is presented in Table 18.2.

The factors were labelled as *awareness* about COVID-19, the importance of Facebook over local news media, attitude towards sharing COVID-19-related information, reliance on news media for preparation addressing COVID-19 and overall access to information. Cronbach alpha was used for examining internal consistency for each of the scales and found to be 0.758 (awareness about COVID-19), 0.682 (importance of Facebook), 0.413 (attitude towards sharing of information), 0.618 (reliance on news media) and 0.653 (access to information). Although one of the reliability scores is low, overall results indicate a moderate internal consistency. Three items were loaded onto each of factors 1 and 5, four on factor 2 and two on factors 3 and 4 (Fig. 18.5).

In health policy, research questionnaires are reasonable and valuable measures for investigating broad sets of disease-related concerns, perceptions, attitudes and actions of the interest group. Numerous studies on various diseases have followed

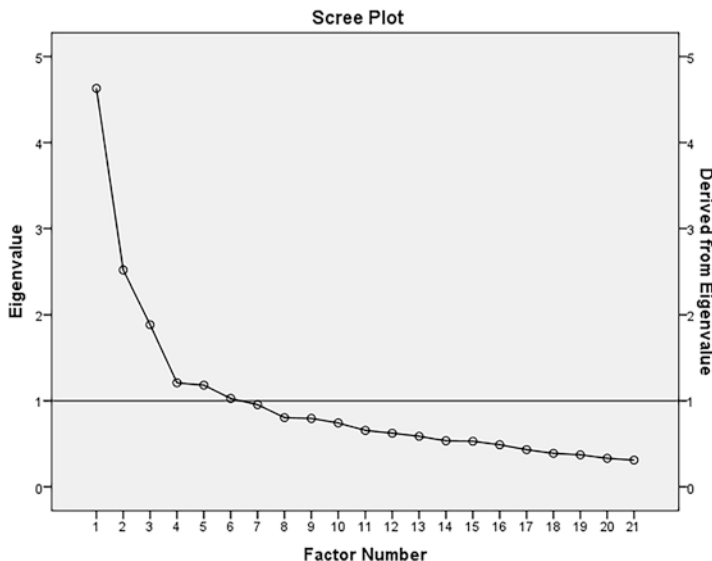


Fig. 18.4 Scree plot

structured questionnaires; however, COVID-19 is underexplored. Since recently identified, COVID-19-related perception among young people requires an immediate preference, particularly in developing countries like Bangladesh. Developing countries lack sufficient tools and techniques (especially knowing the necessity, using personal protective equipment and making testing kits available for COVID-19). Besides, real-time information is not always available and not trustworthy/authentic/verified in many cases resulting in the loss of countless lives. To prepare against such an epidemic, disease-related news from local news media and Facebook plays a vital role. Hence, the current study employed factor analysis to explore self-report measures, which provided a five-factor solution to be the most appropriate.

The first factor, awareness about COVID-19, influenced by news and social media (Gollust et al., 2013), is more likely to help people respond against the spread of COVID-19. However, since Abramson et al. (2015) showed concerns about the contribution of communication over Facebook; communication for COVID-19-like diseases may not be equally fruitful. The reasons include that many news sources are not credible. The second factor to impact response against disease spread is the importance of Facebook over local news media houses. It is argued that social media plays a role during a crisis (Paulussen & Harder, 2014); accordingly, this study has also identified the importance of Facebook over local media houses to reflect peoples' response to COVID-19 in Bangladesh. Sharing disease-related data is vital to influence peoples' preparation, response and recovery (Gao et al., 2008). Therefore, factor 3 has also identified the importance of disease-sharing information. Factor 4 includes reliance on news media for preparation against COVID-19, which has the

Table 18.2 Component loadings for the rotating components (N = 705)

Component	1	2	3	4	5	Communality
I am aware of the global spread of COVID-19	.842					.459
I am interested in news related to COVID-19	.698					.371
News from international media help me raise my concern about COVID-19	.648					.421
The information from Facebook is more reliable than the news that appears in a Bangladeshi newspaper		.714				.392
I rely on Facebook-based guidelines to keep myself protected against COVID-19		.677				.487
I learn about the potential effect of COVID-19 through my Facebook newsfeed		.532				.444
The news about COVID-19 in Bangladeshi newspaper do not reflect the actual scenario of the whole country		.440				.202
I share the knowledge through Facebook immediately after I learn/acquire			.874			.679
I share Facebook posts on social media about COVID-19 to spread knowledge			.733			.532
I rely on newspaper-based guidelines to keep myself protected against COVID-19				.665		.501
I learn about the potential effect of COVID-19 from newspaper articles and reports				.575		.395
I have convenient access to online newspapers					.839	.730
I have convenient access to Facebook					.502	.625
I have convenient access to newspapers of paper format					.485	.229
Eigenvalues	4.631	2.518	1.884	1.209	1.182	
Percentage of the total variance	22.054	11.989	8.970	5.759	5.629	
Number of test measures	3	4	2	2	3	
* loading ≥ 0.4						
Extraction method: Principal axis factoring						
Rotation method: Promax with Kaiser normalization						
Rotation converged in 10 iterations						

potential to raise public perception. Such development would help minimize the impact of such disease outbreaks. The last factor has emphasized access to information. Access to information is key in developing diverse and effective strategies to combat COVID-19. In Bangladesh, it is imperative to allow the majority of the

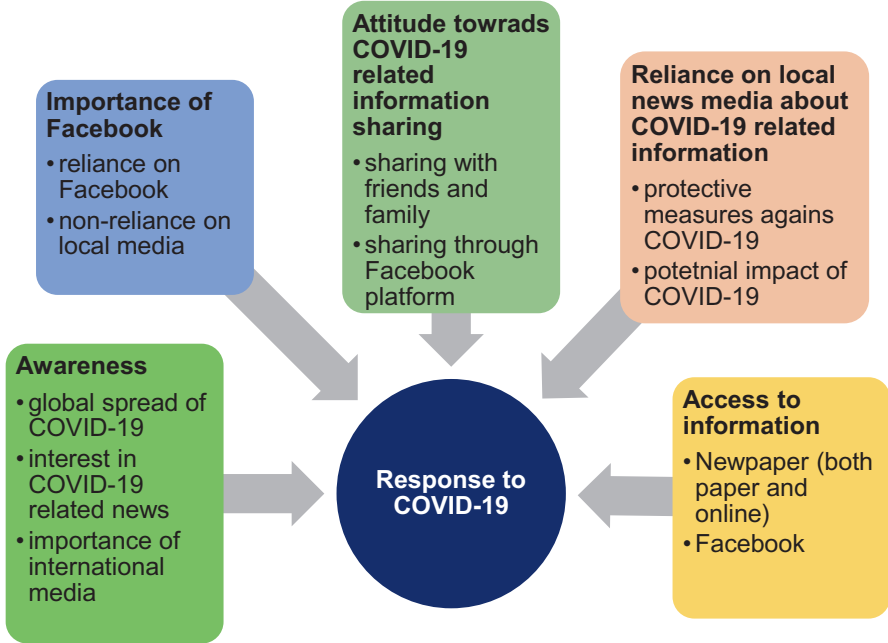


Fig. 18.5 Response towards COVID-19 in developing countries

population access to information on COVID-19 to make them aware of the prevention measures to limit the spread.

While students from the school of medicine and allied fields trust pandemic-related news from social media platforms less, students from other disciplines buy in the same. This may include the specialized knowledge about health and health policies medical students acquire during their studies. Students from other disciplines have less knowledge of these subject matters. However, pandemics impact all segments of society, and a minimum level of understanding should be visible among all students, irrespective of their disciplines. Hence, post-COVID-19 recovery should involve some basic forms of education that students from all disciplines learn. Students at the tertiary education level, irrespective of their major, should understand what information to accept and what to reject from a wide pool of free information.

5 Conclusion

This study conducted an exploratory factor analysis to determine the underlying structure of responses against the spread of the COVID-19 outbreak globally and how the news had spread in Bangladesh among the youth. Results revealed five factors – awareness, the importance of Facebook, attitude towards information sharing,

reliance on local media and access to information – and indicate that those factors in Bangladesh shape young students’ response to COVID-19. National policymakers may consider these while monitoring news and social media to screen the spread of rumours through fake news strictly. This result should be interpreted with caution since there are several limitations. Although the sample size was sufficient, the composition of respondents in terms of location concentration, education institution and major field of study was not equal since convenience sampling was made. Further research may be conducted with confirmatory factor analysis and by adding a nationwide representative sampling.

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Chapter 19

Working from Home for Academics in Higher Education: An Evitable Reality in the ‘New Norm’



Wahab Ali

Abstract The current coronavirus outbreak has led universities worldwide to find new means of providing uninterrupted education for their students. Travel bans, campus closures and isolation measures have forced university students and staff into their homes, which has required them to adapt quickly to working and studying remotely. This study examines working from home (WFH) as a teaching trajectory and investigates the perceptions of the staff of a tertiary institution regarding their experiences of it. An exploratory research design was adopted using an online survey and was supported by meta-synthesis in the form of pertinent literature in the appropriate field to reveal how academics had adapted to WFH. Findings reveal that the WFH requires a supportive virtual learning environment (VLE) consisting of interactive learning platforms, suitable technological gadgets and quality Internet service. Results further demonstrate that institutions need robust information technology (IT) departments that can regularly invest in upgrading institutions’ online platforms, provision of IT gadgets to staff and ensuring staff competence in using them. Findings also propose WFH as a necessity to offer uninterrupted learning safely in times of lockdowns and social distancing due to the COVID-19 pandemic.

Keywords Working from home · Technology · Learning platforms · Internet · Gadgets · Online teaching · Virtual learning environment

1 Introduction

The COVID-19 outbreak is not only a public health crisis but has also significantly affected the global economy through business closures, the loss of life, travel restrictions and physical closure of educational institutions globally. There is no doubt that COVID-19 has negatively impacted all aspects of our life, but with exceptional

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*,
https://doi.org/10.1007/978-981-19-7299-7_19

351

adaptation capabilities, like remote working and the power of digital technology, education in tertiary institutions has had minimal disruptions. Although many tertiary institutions have shut down face-to-face classes globally, learning has not been affected as the staff has been working from home. This chapter's term, 'working from home' (WFH), typically covers working from any location other than the employer's dedicated area. There is no doubt that the coronavirus has revealed emerging vulnerabilities in education systems around the world. Against the COVID-19 outbreak, governments and tertiary institutions are launching various policy initiatives worldwide, such as switching to WFH so that learning and teaching are not affected despite the lockdowns.

Mobile technology has revolutionized our work, making it relatively easy to work from anywhere and at any time. Opportunities exist to conduct work in less traditional settings such as hotel rooms, transit or home. Working remotely requires adjusting how we work, presenting physical and mental challenges. We may not always have access to the same type of furniture and equipment that we might have at the workplace or the same level of connectivity or digital support. Many institutions have followed government regulations to work from home, considering the lockdowns and the need to remain safe. Researchers have argued that workers can work from home by utilizing video conference platforms for communication and can make them feel safe from the risk of contracting the coronavirus (Susilo, 2020). The impact of COVID-19 on academic life has been abrupt and absolute, and the need for WFH is no longer an option like in common times, but it has become a necessity.

2 Background and Context

There appears then that WFH has become a sudden reality that has led many universities and faculties to adapt dramatically to new work methods, schedules and responsibilities. WFH is not a new concept, as some organizations have promoted virtual offices and working from home to improve organizational performance by providing flexibility to employees (Bloom et al., 2015; Zhang 2016). However, WFH is not necessarily the panacea its promoters intend, as concerns arise when workers find it challenging to balance work and family responsibilities and do not have access to essential communication tools. Previous research reveals that while WFH increases the flexibility of achieving work-related tasks and is positively related to overall job satisfaction, it requires a working space and access to the Internet and communication tools (Susilo, 2020). According to Venkatesh (2020), WFH has upended people's work and personal lives. Adjusting to WFH is not easy as one has to juggle personal and job responsibilities, and thus, support and understanding are required from all family members.

Working from home is nothing new for many universities in the world. 'Working from home' has often been referred to in different ways. It is also mentioned as 'teleworking' and 'smart working' and is generally described as a way to work

'away from the office' by means of electronic connections (Bolisani et al., 2020). Smart working can be regarded as an evolution of teleworking, but the adjective 'smart' emphasises the potentially positive effects that this new modality is expected to bring for both employers and employees. It is also called telecommuting and remote work (Sethi & Saini, 2020). Griffith University has a 'Flexible – Anywhere, Anytime Policy' that allows staff to work flexibly. Flexibility includes undertaking duties from time to time in more convenient and appropriate locations and allows for the achievement of learning outcomes (Griffith University, 2020). The policy clearly states that staff must be contactable and ensure they have the necessary and appropriate equipment to perform their work. Staff must have a safe working environment and always adhere to university policies and procedures.

Likewise, Charles Darwin University has 'Working from Home Procedures' where staff may seek to work from home as an alternative work arrangement. Working from home is an alternative work arrangement where the staff member undertakes university activities from a home-based work site instead of at his or her usual work site location (Charles Darwin University, 2007). Similarly, Monash University also has worked from the home procedure that allows staff to work from home as part of a hybrid working model. Academic staff have the flexibility to work on- and offsite; however, they may request an OHS assessment of their offsite work location. Monash offers work location flexibility and supports its professional staff to work onsite and at home where the role and the service delivery model allows. This enables onsite team collaboration with the flexibility and benefits of working from home (Monash University, 2020). WFH can be done voluntarily and mandated as in the current situation due to COVID-19-related restrictions.

According to the University of Reading (2021), WFH needs to set up a specific space where staff can work, ideally somewhere that is not associated with relaxation. While it is not always possible to have the full range of equipment at the office, staff could set up desks and workspace at home. From a theoretical point of view, the impact of working from home on employees' work effort is ambiguous; however, employees, who work from home, might have a higher commitment and thus respond with 'extra' work effort as it provides a degree of autonomy as the flexibility is of great importance (Rupiettaa & Beckmannb, 2016). However, it must be established at the outset that the current WFH situation in Fiji is not a matter of choice but is due to mandatory lockdown because of COVID-19 restrictions.

3 Aim

As a result of the global pandemic caused by COVID-19, universities have carried out teaching digitally, accelerating the inclusion and use of technologies in methodological adaptations. Subsequently, this research aims to ascertain how academics from a tertiary institution adapted to WFH during the lockdown. This study intends to explore the dramatic changes to individual work–life balance incurred by COVID-19 as families juggle family obligations with work commitments. The

study describes how the staff effectively adapted new technologies to work from home.

Considering the aim of the study, this study is guided by the following research questions:

1. How has staff adjusted to working from home?
2. What are some benefits of working from home?
3. What are some challenges of working from home?
4. What learning platforms and IT gadgets do staff use from home?
5. What are the staff views about the WFH option even after COVID-19?

These research questions assisted in guiding the study and addressing the aim of the research.

4 Research Significance

The findings of this study are of great importance to various stakeholders for several reasons. Foremost, there is a paucity of previous research regarding how tertiary institutions are trying to cope with delivering uninterrupted learning for tertiary institutions in Fiji and the region. This study will help uncover critical areas and contribute to local literature on working from home (WFH). The findings will surely contribute to local literature on the opportunities and challenges of WFH. In order to work effectively from home, a decent workspace and appropriate infrastructural support are necessary. Findings will surely inform staff about the different learning platforms available in the market. Staff may also realize the importance of studying information technology and online modes to upskill their teaching abilities.

The finding of this study will rebound to the benefit of HE institutions by providing them with important insights into WFH, enabling them to strengthen their flexible learning policies and procedures. Given the unprecedented situation, WFH is no longer a matter of option but has become necessary to deal with the diverse exigencies of the COVID-19 pandemic. The study makes a considerable contribution through its findings by revealing staff perceptions and their attitudes towards WFH. Notably, the findings will be of great value to the staff as they are in constant touch with the students and can better understand the complexities of WFH. In doing so, HEI and their staff will see the benefits and biases of WFH as research has revealed that working from home leads to greater enjoyment, satisfaction and motivation, thus enhancing job performance (Susilo, 2020). This study will inspire the staff, students, administrators and key stakeholders to better understand working from home.

5 Conceptual Framework

Working from home is not a novel concept as the development of information technology and many Internet-based platforms has made team collaboration and distance communication between employees and their clients increasingly convenient. Educational scholars have widely addressed alternative working models, considered various issues and focused on specific aspects of non-traditional teaching methodologies (Bolisani et al., 2020; Chung et al., 2020; Susilo, 2020). The literature review has revealed many drivers of working from home, and this understanding led to the composition of a conceptual framework to address key issues (see Fig. 19.1).

There is no doubt that higher education has suffered greatly from the COVID-19 pandemic. The indefinite working-from-home period has led university employees, especially faculty, to alter their work methods, schedules dramatically and responsibilities as universities face an uncertain future encompassing a return to campus. This ‘new normal’ has established responsibilities and work patterns like WFH with its associated opportunities and challenges.

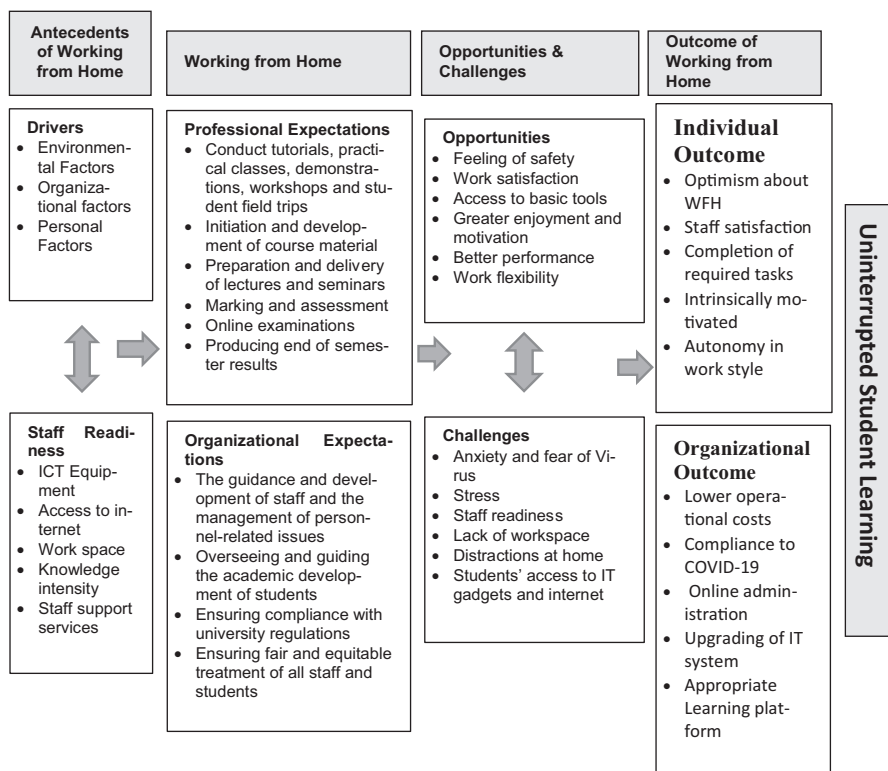


Fig. 19.1 Conceptual framework for the study

6 Literature Review

Previous research at the University of Birmingham and the University of Kent revealed that one-third of the staff occasionally work from home, but after the COVID-19 lockdown, most have been working from home (Chung et al., 2020). Most respondents stated that they had seen increased productivity while working from home. Empirical research by Chung et al. (2020) shows that the availability of relevant communication tools with acceptable Internet speed affects academics' attitude towards WFH and their ability to work productively. According to Rupietaa and Beckmannb (2016), employees who can work from home have high autonomy in scheduling their work and therefore are assumed to have higher intrinsic motivation. Thus, working from home is expected to influence employees' work effort positively. Earlier research also reveals that working from home increases employees' autonomy in scheduling and organizing their work. Employees with higher autonomy have stronger intrinsic motivation and are willing to provide more work effort. Moreover, by offering agreeable working conditions, firms can attract and retain highly skilled and hard-working employees (Rupietaa & Beckmannb, 2016).

Given the catastrophic epidemiological situation, universities opted for online and distance learning by working from home. Likewise, China initiated a *Suspending Classes Without Stopping Learning* policy to see that learning was not compromised during the COVID-19 pandemic-related lockdown (Zhang et al., 2020). The closure of the universities and the intention to continue uninterrupted learning led most academics to opt for WFH. This sudden venue change has affected academics' productivity and exacerbated the challenges confronting universities as they face an uncertain future (AbuJarour et al., 2021). Undoubtedly, coronavirus revealed emerging vulnerabilities in strict work hour policies, but societies need flexible working systems today as we face unpredictable futures (Zhang et al., 2020). The indefinite working-from-home (WFH) period has dramatically altered the university staff's work methods, schedules and responsibilities. It must also be noted that WFH cannot work in isolation but needs the support of a robust virtual learning environment (VLE), well-trained staff and IT gadgets to support both staff and students.

This confluence of roles and ephemeral working conditions can increase and reduce worker productivity. Likewise, the literature reveals that WFH is complex and demanding as staff have to deal with family-work conflicts and access basic technological tools (AbuJarour et al., 2021). Moreover, literature entails that the most important step for all teaching staff is understanding their institution's VLE and online hub for educational resources and needs (Chung et al., 2020). Each VLE offers different resources, though most allow for IT gadgets and an informational, technological department. There is also a need for pertinent learning platforms and appropriate software. Institutions need to have learning platforms like Zoom, Google Meet, Moodle, Blackboard and Top Hat, a paid platform. Apart from educational institutions, many industries have already started discussing a post-pandemic future in which remote work would be the essence of the day (Bloom et al., 2015). There is no doubt that the reality will likely be hybrid, with some employees mainly

working remotely from the safety of their homes. This creates challenges and opportunities to redefine work in the hybrid future (The Medical Futurist, 2021).

To effectively deliver online learning, universities need a robust VLE that staff are aware of and competent to use effectively and remotely while WFH. This means understanding the more straightforward tools, such as content management and planning, and the additional resources that will help make the online learning experience more dynamic for students (AbuJarour et al., 2021). Working from home provides a learning curve and opportunity to model to our students that we can learn new technologies and take on new challenges. VLEs make the most of the online learning experience by synchronizing real-time communication, including video and audio conferencing (Martin et al., 2021). This is a great way for staff to bring the teaching alive through the computer screen and stay connected with students. According to Martín et al. (2021), the COVID-19 pandemic has accelerated the inclusion and use of technologies in methodological adaptation in universities worldwide. It must be considered that higher education faces a digital transformation of the learning process and are practically unthinkable without the use of technology.

7 Research Methodology

Methodology demystifies the research process and the belief systems constructed on ontological, epistemological and methodological assumptions. Subsequently, this study was conducted from within an interpretive paradigm, and this action has implications for the selection of an appropriate research design. Hence, an exploratory research design was most appropriate to unveil the salient intricacies associated with working from home in the wake of COVID-19 and associated lockdowns and containment zones. Exploratory studies are a valuable means of asking questions to establish baseline information that could be later used as a launch pad for further research. Subsequently, data were collected using SurveyMonkey, an Internet programme and hosting site that enables a person to develop a survey for use over the Internet. It is commonly used for market research purposes but surveys in several areas, including educational research.

There are various formats of SurveyMonkey, and in this instance, dichotomous, multiple choice and open-ended questions were used, generating frequencies and graphs for each question. In an increasingly digital world, Internet survey is often used in medical and market research in many fields. Tools like SurveyMonkey offer practitioners an exciting opportunity to conduct their surveys and research effectively (Waclawski, 2012). The survey was randomly sent to 37 tertiary institution staff, and 30 of them filled in the survey, giving a response rate of 82%, which is acceptable for discussion. There is a certain degree of arbitrariness about a decent response rate decision. A survey response rate of 60% or higher is desirable, achievable and considered excellent in most circumstances (Baruch, 1999; Richardson, 2005).

Another method employed in this study was meta-synthesis, which is the systematic review and integration of findings from qualitative studies and is quite common among researchers. A qualitative meta-synthesis allows for a systematic review of qualitative studies more interpretively than aggregative. Meta-analysts consider the methodological integrity of their studies concerning central research questions and research processes and transforming primary findings into categories or themes in an organized manner (Levitt, 2018). Likewise, this process uses rigorous qualitative methods to synthesize existing qualitative studies to construct greater meaning through an interpretative process.

8 Findings and Discussion

The ensuing sections present the findings in collaboration with pertinent meta-synthesical literature on working remotely and working from home.

8.1 Working from Home

Working remotely and working from home are not new; many universities worldwide have ingrained it into their flexible working policies (Griffith University, 2020; Monash University, 2020; University of Reading, 2021). Current findings reveal that majority (86%) of the staff seemed either very satisfied (23%) or somewhat satisfied (63%) with the current working arrangement from home. Few (10%) of them stated they were somewhat dissatisfied, while only a few (3%) were neither satisfied nor dissatisfied (Fig. 19.2).

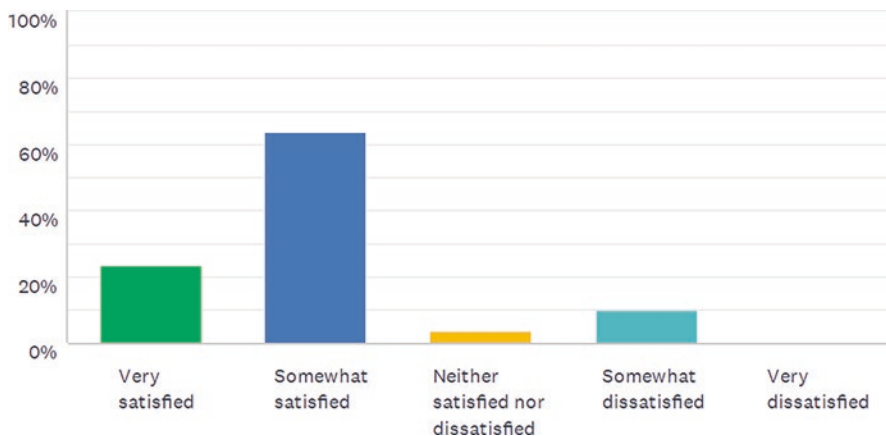


Fig. 19.2 Satisfaction with working from home

The satisfaction rate reveals that findings are quite favourable, and this sense of acceptance has various implications. Findings may suggest that most staff have access to basic technology tools and the expertise to deliver online lectures effectively. It suggests that staff have adjusted well to WFH, and this arrangement brings in much flexibility in one working environment if well managed. On a similar note, Susilo (2020) undertook an empirical study on the effect of work from home on job performance during the COVID-19 crisis. His findings reveal that employees experienced greater enjoyment, satisfaction and motivation, thus enhancing job performance. Researchers have argued that workers can work from home via video conference communication platforms. This makes them feel safe from the risk of contracting the coronavirus and offers them flexibility and increased autonomy in their work style and meeting the outcomes (Susilo, 2020) (Fig. 19.3).

On a similar note, a leading-up question was posed to the staff about their feeling regarding working from home. Compared with the face-to-face sessions, the majority (70%) of the staff feel more optimistic about working from home. Some (23%) of them do not feel any difference, while only a few (7%) are pessimistic about working from home. Not many of them were very satisfied with working from home, but as time progressed, most started feeling optimistic and comfortable. This positive change in feeling and attitude reveals that staff had adapted well to working from home. On a similar note, Susilo (2020) concur with Rupietaa and Beckmannb (2016) and is assertive that employees who can work from home have high autonomy in scheduling their work and therefore are assumed to have higher intrinsic motivation. Empirical results further reveal that working from home significantly influences work effort (Rupietaa & Beckmannb, 2016). Meta-synthetical data demonstrates that working from home provides more flexible working time scheduling than working in the office, as employees can work at their most productive working hours, even in the evenings. In contrast, when staying in the office, employees must conform to general office hours and common breaks even though it may not be their preferred working time scheduling (Bailyn, 1988).

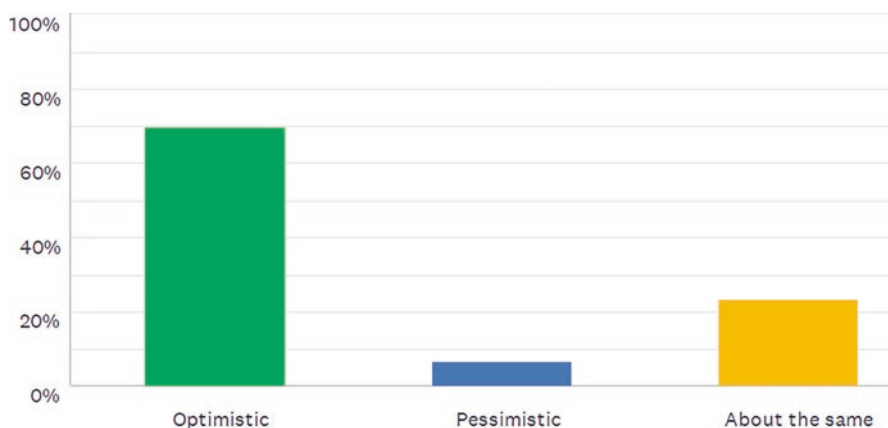


Fig. 19.3 Transition in feeling about working from home

8.2 *Challenges in Working from Home*

There is no doubt that COVID-19-related lockdowns have enforced the concept 'work from home' (WFH) into an officially mandated, strictly enforced work mode globally. This incommodious situation has forced many employees to work from home for the first time, and this abrupt change, in turn, brings several challenges along with it. The findings reveal several key challenges academics have been compelled to work from home due to COVID-19 restrictions. The majority (33%) of the respondents stated general anxiety and fear about the impact of the coronavirus on their life and that of their families and issues related to Internet connectivity (33%) as their major challenges. The concerns are legitimate as everybody is concerned about their safety and security. Current evidence suggests that the virus spreads mainly among people in close contact, typically within a short range.

Likewise, a person can be infected through aerosols or droplets containing the virus are inhaled or come directly into contact with the eyes, nose or mouth. As of 22 May 2020, there have been 3,458,946 deaths globally, with daily new cases emerging worldwide. Living in a lockdown situation is not easy, as even when one goes out to buy essential stuff is unsure when he or she can get infected. Such situations led to mental stress and anxiety apart from socio-economic-related domestic violence issues. The World Health Organization validates the previous statement: According to it, violence against women tends to increase in emergencies, like epidemics. Stress, disruption of social and protective networks, increased economic hardship and decreased access to services can exacerbate the risk of women suffering violence (WHO, 2021). Similar sentiments are shared by UN Women (2021) as emerging data and reports from those on the front lines have shown that all types of violence against women and girls, particularly domestic violence, have intensified since the outbreak of COVID-19.

Another major issue raised by the participants was related to Internet connectivity. It is not that they do not have Internet but have weak and sporadic reception. The Internet is deeply embedded into our daily activities and has become an integral part of the lives of millions of people in the modern world. The staff in the survey stay in different localities, and some do not have good quality Internet to offer online classes effectively. Meta-synthesis reveals that poor Internet connectivity is an issue in developing countries resulting from limited bandwidth due to the absence of appropriate infrastructure to deliver quality mobile services (Shrestha et al., 2010). They further added that even though Internet connectivity is present in urban areas, it is inferior to the service provided in developed countries.

Consequently, according to Hassler and Jackson (2010), this limitation affects the users accessing the Internet effectively and satisfactorily. This, in turn, negatively affects the delivery of online lessons and the reception is also affected. Therefore, a gap exists between those with ready access to online learning and those without such avenues (Reinald Adrian et al., 2016).

Findings further reveal that some (20%) of the staff were also concerned about their students' Internet connectivity as some requested that recorded lectures be

posted on Moodle. This enabled them to view the lectures when the receptions were good. Staff also noted that a few students were not making assignment submissions on time and were able to consider the technical difficulties the students may be facing. Likewise, they were concerned about their students' inability to access technological gadgets like laptops and desktops. Figure 19.4 reveals that the majority (67%) of the staff have access to all the equipment they need to effectively deliver online classes, while a good sum (33%) of them stated that they did not have access to all the equipment to deliver online classes effectively.

Findings reveal that staff do not have webcams and microphones to deliver online classes effectively. Apart from having the right engagement tools, staff should also know how to use them effectively. One staff member stated, 'I do not have access to the tools or information I need to do my job at home. The administration should supply us with the gadgets and provide training in using them'. While another staff proposed that the administration provide them with the data as they have to stay online to keep connected with the staff and students. There is no wonder why staff readiness is stressed as an important factor in delivering effective online learning and teaching. Meta-synthesical data supports the idea as, according to Drossel et al. (2017), it is vital to understand staff's perceptions about online learning because they are the ones who are the real drivers in making the difference in the online modality. Evidence supporting this position can be found in the work of Yuen and Ma (2002), who strongly recommend the need to empower teaching staff and build their confidence so that they can undertake online teaching.

Survey findings further reveal that some (23%) of the staff felt distractions while working from home. With limited coping mechanisms, staff are increasingly searching for a respite from the inexorable grind of working through a pandemic. Conquering family distractions comes down to communication, and staff need to work out routines that keep them occupied during peak productivity hours and explain to the family the importance of uninterrupted work. Some (27%) of the staff also mentioned feeling socially isolated. According to Motamed and

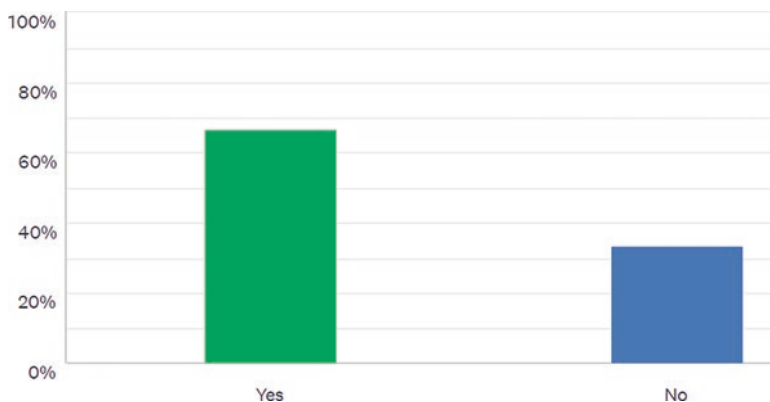


Fig. 19.4 Adequacy of electronic gadgets to offer online classes

Shirvanimoghaddam (2021), WFH is quite different from working from the office as one has to adapt to new sets of distractions, technical issues, screen fatigue, less social interaction and a sense of isolation and loneliness, a loss of motivation and standard workplace facilities. Similar sentiments are shared by Aczel et al. (2021), who ascertain that some of the frequent-mentioned negative aspects of WFH include being disconnected from co-workers and feeling isolated (Fig. 19.5).

Survey data reveals that the majority (50%) of the staff have a regular working schedule at home every day, while some (40%) of them have it most of the days and few (10%) of them have it about half the time. Similar sentiments are shared by Felstead and Henseke (2017), who ascertain from their study that home-working employees reported more difficulties with switching on and off as they worked beyond their formal working hours. Meta-synthesical data reveals that working from home is especially difficult for those with small children, but intrusion from other family members, neighbours and friends is the major challenge of WFH (Aczel et al., 2021). Survey data reveals that few (10%) of the staff felt that some productive time was consumed by childcare, while only a few (7%) mentioned difficulty communicating with co-workers due to lockdown and travelling restrictions. There is ample evidence in the literature that supports the view that staff who work long hours at home online indicate feelings of isolation and often lament the loss of collegial feedback and reinforcement (Aczel et al., 2021). An earlier study by Sullivan and Lewis (2001) confirms that most women who work from home can fulfil their domestic roles better and manage their family duties more to their satisfaction, but it comes at the expense of productive work hours.

8.3 Facilitating Working from Home

There is no doubt that the COVID-19 pandemic has brought unprecedented disruptions to the education landscape, with educational institutions shutting their doors to face-to-face classes. The speed with which staff made the (forced) shift to do remote teaching was astounding and unparalleled. The transition was complicated because

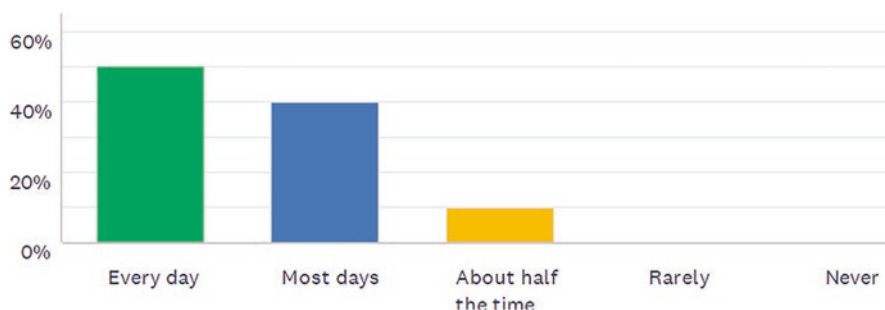


Fig. 19.5 Keeping a regular working schedule at home

it enforced the concept ‘work from home’ (WFH) into an officially mandated, strictly enforced rule. While WFH is not a new concept, as most tertiary institutions have flexible working policies, it became mandatory because of COVID-19 restrictions. This study has revealed some challenges as well as strengths of WFH as it is also labelled as smart working. International literature on COVID-19 supports that the pandemic has forced schools, tertiary institutions and public organizations worldwide to ask their employees to start working from home or ‘smart working’ (Brynjolfsson et al., 2020; Gottlieb et al., 2020). Smart working is sometimes also referred to as teleworking as it uses technologies to improve the performance and satisfaction obtained from the job (Sethi & Saini, 2020). The adjective ‘smart’ emphasises that this work modality is also a way for employees to achieve maximum value and be more productive to have more spatial and temporal flexibility (Bolisani et al., 2020; Fragouli & Ilia, 2019). This study has revealed that the majority of the staff in the study are optimistic about working from home and have designated workspace at home (Fig. 19.6).

This study reveals that most (80%) of the staff have a dedicated workspace at home, while few (20%) do not have such a working environment. Having a devoted space or workstation at home shows that most staff have accepted WFH as a fact of life in adapting to the ‘new normal’ exigencies. One cannot confirm when the lockdowns will be lifted or when new lockdowns will be implemented again. Even after lockdowns are lifted, institutions would prefer to practice flexible working hours for the safety and security of the employees and the public. Findings reveal that even those without dedicated workspaces can also deliver online learning with whatever gadgets they have. A plethora of previous work has considered the development of information and communication technology has led directly to the growing importance of WFH as an emerging form of flexible working for many organizations (AbuJarour et al., 2021; Aczel et al., 2021; Bolisani et al., 2020; Rupietta & Beckmann, 2016; Sethi & Saini, 2020; Susilo, 2020). The way academics work has changed as universities face an uncertain future encompassing a return to

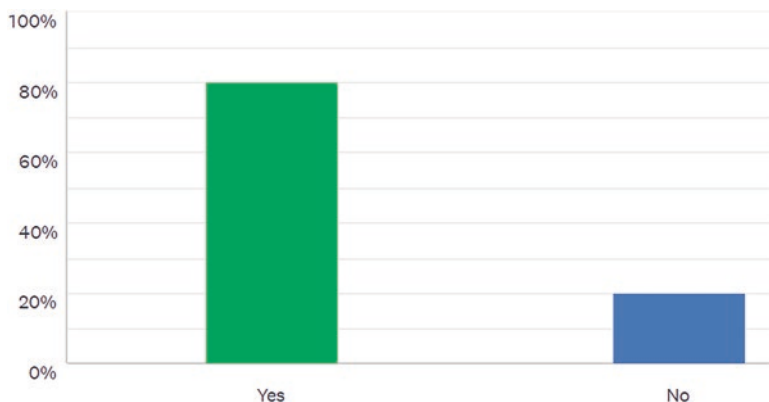


Fig. 19.6 Have a dedicated workspace at home

campus. This ‘new normal’ alters established responsibilities and work patterns globally as staff adopt and adapt to the requirements of the VLE.

Likewise, to offer effective online classes, one needs to have acceptable Internet speed, which is linked to a stronger positive relationship between perceived technology usefulness and the WFH attitude of the staff (AbuJarour et al., 2021). Subsequently, educators also need to have appropriate learning platforms to enable them to use a myriad of powerful tools with nearly limitless flexibility of resources available for their use (Lennon, 2010). Survey findings reveal that majority (60%) of the staff use Google Meet and Moodle (13%), while some (10%) use Top Hat while the remaining (13%) use other learning platforms like Zoom and social media apps (Fig. 19.7).

Moodle is an open-source learning management system (LMS) developed to facilitate learning, communication and discussion in a personalized, multilingual learning environment. Moodle allows users to access courses online where students can check their progress and submit their assignments remotely. Meanwhile, Top Hat is a more advanced learning platform with Moodle integrated and staff can engage before, during and after class, with online access to course information and student progress. Likewise, Google Meet is an alternative to common web conferencing like Zoom and Skype that can be accessed from any electronic device, like a smartphone, laptop, tablet or desktop. Similarly, technology is comfortable and practical when learning is done virtually, and staff can complete the work from the safety and security of their homes, especially during COVID-19-related lockdowns and travelling restrictions (Pratama et al., 2020).

Survey findings reveal that despite the challenges and shortcomings of virtual learning faced by the staff, they still believe that flexible working is the panache for the ‘new normal’. According to Chung (2018), flexitime is having control over the timing of one’s work and the ability to change the timing of their work if the outcomes are met. This may result in working on Saturdays and after hours and result in day offs in place of extra work hours. It is also known as teleworking, allowing

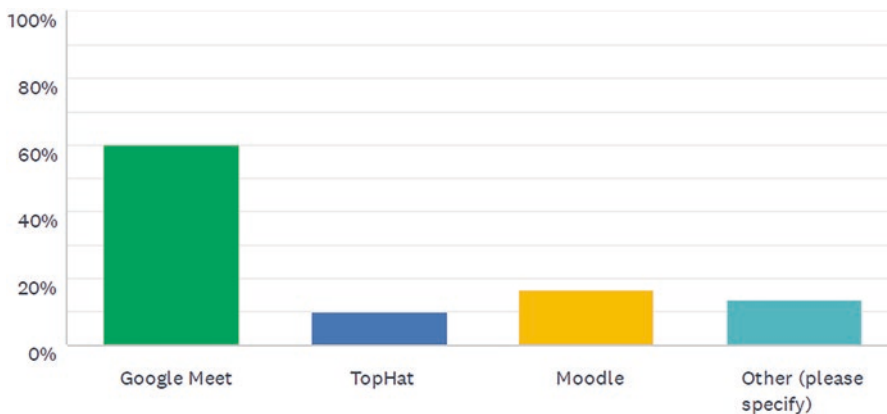


Fig. 19.7 Learning platforms used by staff

workers to work outside their normal premises, like working from home. Flexible working and WFH have become the norm of the day in light of COVID-19 lockdowns and travelling restrictions. Subsequently, current findings reveal that the majority (83%) of the staff favour flexi working arrangements, while only a few (13%) prefer working from the campus (Fig. 19.8).

It is reasonable for staff to mention that they prefer working from the campus as all the staff do not have access to high-speed Internet and appropriate electronic gadgets. Qualitative aspects of the survey reveal that some staff are also concerned about their student's lack of access to digital tools, while some are concerned about the social life that students are missing due to the lockdown. However, the pandemic does not allow us all the luxuries we had taken for granted, but we have to adjust to the exigencies of the 'new normal'. Surveys around the world have revealed that a high percentage of employees are willing to adopt a more flexible working regime by spending just two to three days a week in the office and working remotely for the rest of the week (AbuJarour et al., 2021; Aczel et al., 2021; Motamed & Shirvanimoghaddam, 2021). The literature further establishes that this new work routine would result in lower operational costs for the employers like utilities, office supplies and electricity charges. The new work routine in the COVID-19 global pandemic period provides a more flexible work regime which has several positive impacts, not only on employers' and employees' lifestyles but also on the environment. This is because the lesser the travelling, the lesser the use of vehicles which in turn leads to lower emission of greenhouse gases (Motamed & Shirvanimoghaddam, 2021).

Working from home, teleworking or smart working comes with robust technological and infrastructure support. Tertiary institutions usually have technological gadgets and can access high-speed broadband Internet services. Likewise, to deliver online classes effectively, even staff need access to similar gadgets and Internet

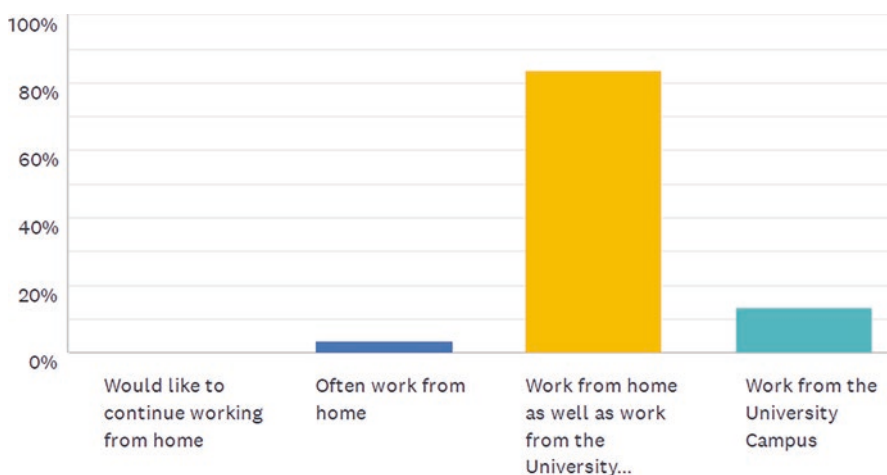


Fig. 19.8 Staff view of flexible working environment

services at their homes or remote workstations. Students also need access to similar resources to effectively engage in two-way communication using relevant learning platforms and applications. Communities can play a significant role in facilitating WFH. Meta-synthesis reveals that to support government's initiatives like the careFIJI app, Vodafone Fiji Pte Ltd has stepped in to help by providing smartphones at heavily subsidised prices (Vodafone Fiji, 2021). The careFIJI is a mobile software application developed by the Fijian Government to assist the Ministry of Health and Medical Services in tracking and combating the ongoing COVID-19 pandemic in Fiji. This assistance from Vodafone greatly assists the public and the students as they can buy the smartphone at a very affordable price of about US\$43 dollars and use it as a learning gadget (Vodafone Fiji, 2021). In essence, effectively practising WFH requires the institution, staff, students and other stakeholders to work synchronically for effective implementation.

The COVID-19 pandemic has forced a hiatus in which a substantial percentage of face-to-face life has been virtualized, and staff have opted for WFH. Research on educational systems during the COVID-19 crisis shows that virtual teaching has led to academic overload, which, among other things, increases stress and anxiety levels (Villa et al., 2020). Even prior to COVID-19, it was known that working from home has certain limitations and can cause personal and professional isolation, as there is reduced to nil social interaction (Hill et al., 2003). As such, it is maintained that supervisors and colleagues need to be virtually connected to share important information and to feel integrated into the team. Several strengths have also been attributed to WFH; for example, increased autonomy in organizing work boosts intrinsic motivation and induces higher work effort. Similar sentiments are shared by Rupietta and Beckmann (2016), who are assertive that working from home has a statistically significant positive effect on work effort. Their findings further endorse that those employees, who work from home more frequently, provide higher work effort than employees who only stay in the office. Rupietta and Beckmann (2016) recommend that institutions adjust staff employment conditions and modify their organizational culture to include working from home and flexible working arrangements. The present research also supports this position.

9 Recommendations

The phenomenon of the COVID-19 virus outbreak has led to a fundamental change in the field of education through an intense emphasis on technological innovation and virtual classrooms. It certainly has changed the paradigm in education that the learning process does not only use applications when there is a disaster but has provided a new learning style for achieving learning objectives in the future. Returning to full-time face-to-face classes in the future is still in oblivion as new strains of COVID-19 like B.1.617 has emerged, and countries are facing new waves of the pandemic. As a result, many institutions may continue to work remotely and in flexible mode even after the pandemic's threat subsides in the time to come.

The following recommendations can make WFH and flexible learning more meaningful and effective:

- Availability of appropriate VLE is critical in WFH effectively. Administrators should provide staff with access to equivalent hardware and software to what they use in their on-campus office to ease the transition and support all aspects of academic productivity.
- Administrators must acknowledge the additional roles that staff members have taken to deliver online or hybrid experiences that mimic face-to-face class and offer support via training, technical assistance during class and ubiquitous online support.
- Staff need to upgrade their IT knowledge and expertise in using different gadgets and learning platforms and their various features to make learning more meaningful for the students. The administration should provide capacity building so that staff is well equipped to undertake WFH effectively.
- Students must also access technological tools to be fully complacent with online learning.
- Students also need to be more proactive and put more effort into their work. This is because online learning requires a lot of self-directed and self-determined learning.
- Parents and guardians also need to supply their children in tertiary institutions with relevant technological gadgets, like a smartphone as a learning tool.
- Staff need to be connected not only with other staff and the institution but with the students too. They must be available during normal working hours and be contactable and reachable by the administration and the students. Staff should be able to provide online counselling and mentoring to students as and when needed.

The above also has implications for primary and secondary education as they are also in lockdown situations. How and when the world's academics and students return to campus remains uncertain and contentious. Likewise, it cannot be predicted when a country may face a new wave or strain of COVID-19 and be forced into a lockdown again. This is despite if all are vaccinated because the outcome of it is yet to be seen. As a result, staff, students and administrators need to work together to address the challenges that individuals must WFH.

10 Limitations and Further Research

Naturally, empirical studies like this have certain limitations, and this study is not an exception. The findings are limited to a single institution, and a much bigger sample size could have been selected. Consequently, these results should be viewed as a snapshot of WFH considering the drastic impact of the COVID-19 pandemic. Working from home is not a new concept and is usually voluntary, but the COVID-19 pandemic has imposed it on the staff due to the lockdowns. Working from home is experienced by employees as a benefit and a symbol of appreciation and trust if it is

voluntary. Thus, the exploratory findings present a solid platform for debate and discussion and a proper scope for further in-depth research on the subject matter.

11 Conclusion

This paper examined the imposed WFH impact on staff at a small university in Fiji and the personal and technological challenges they faced during the lockdown period. While most of the staff have settled in well with the WFH directive, some did raise a few challenges that, when addressed, can make WFH more effective and meaningful. This study has highlighted valuable information to help reduce the impact of work–life challenges faced by the staff in undertaking WFH during COVID-19 restrictions. The results lead to several important recommendations for administration, staff, students and other university stakeholders. For example, the administration should provide workers with the proper hardware like laptops and software resources and good Internet access in the mobile modem with free data. Similarly, staff need capacity building before they can undertake WFH efficiently and thus improve work attitudes towards unpredicted working situations. Being an exploratory study, this research presents the ‘tip of the iceberg’ regarding imposed WFH regime during the lockdown period. However, it sets the platform for further in-depth studies investigating voluntary and enforced WFH arrangements, academics’ productivity levels and how WFH affects students’ academic performance and achievement.

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Chapter 20

An Evaluation of HEQEP in Capacity Building of University of Rajshahi and Lessons Learned During the COVID-19 Pandemic



Md. Shawan Uddin and Md. Sohel Rana

Abstract Higher education in Bangladesh has recently undergone extraordinary development, at least in quantity, with the number of tertiary students more than tripling in the last few years. The current government is determined to change the landscape of higher education by improving the country's higher education and research quality. The Government of Bangladesh (GOB) and the World Bank (WB) have generously supported the Higher Education Quality Enhancement Project (HEQEP) to achieve the goal of quality education. The University Grants Commission (UGC), with the assistance of project officials and the WB, is painstakingly implementing the initiative. The HEQEP identified a considerable amount of latent academic excellence and capability among the academic staff and students in the universities in Bangladesh. This study aims to explore the contribution and effectiveness of HEQEP in building the capabilities of the students, researchers and academics at University of Rajshahi. To achieve the objective, this study employs a qualitative approach. The data was collected through in-depth interviews of seven academic staff who contributed to the HEQEP. This study finds that as part of the capacity building, HEQEP contributed largely to developing infrastructures at the faculty level; developing professional and research skills among the teachers and students; transforming culture, attitude and mindset in the higher education sector; developing curriculum; developing accreditation council; and providing uninterrupted support through the online platform during the COVID-19 outbreak.

Keywords HEQEP · HEIs · Capacity building · COVID-19 · University of Rajshahi

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P. Sultan (ed.), *Innovation, Leadership and Governance in Higher Education*, https://doi.org/10.1007/978-981-19-7299-7_20

1 Introduction

The expansion and sophistication of higher education at the universities of any country open the door to multiple opportunities which contribute directly to the country's development process. The prime purpose of higher education is to prepare skill-based folks who become unable to take over challenges at the local, national, regional and global levels through proactive policies. Preparing or enabling graduates with the required knowledge, education, skills and know-how to meet the demands of the twenty-first century's industry is challenging, especially when many universities are not equipped with sophisticated infrastructures that might significantly facilitate higher education. Moreover, the absence of measuring capacity among the teachers, students and researchers in the universities often end up preparing graduates with inadequate skills in the respective industries making the development cogwheel slow in the global competition. Bangladesh is one of the fastest-growing economies in the world. The economic growth, as well as the improvement in the socio-economic indicators, is the result of the country's overall development process. Such a development process is largely augmented by the quality of education in institutions and universities. However, surprisingly, the quality of higher education in Bangladesh has been deeply concerned for a long time. Many believe that Bangladesh's higher education system is at a fork in the road, frequently failing to fulfil the economy's growing demand for a well-educated and competent workforce. According to a World Bank tertiary education review (2019), it faces infrastructure shortages, a scarcity of trained faculty members, a lack of facilities, overbearing government regulation and a lack of appropriate research activity by the academic community. The government's aim of expanding higher education has resulted in a proliferation of public and private universities, with less emphasis on educational quality. Established universities have performed poorly in recent International University Rankings (Islam, 2022). Bangladesh is likely to confront a severe shortage of educated, talented and knowledge-based workers and high efficiency and human productivity capital due to its poor performance. This shortcoming is acknowledged in the country's National Education Policy 2010, which emphasizes enhancing the performance of higher education quality in the universities (Islam, 2021). Building human and social capital is emphasized in the WB partnership report for Bangladesh 2016–2020. Bangladesh will soon need to strengthen its higher education and become a significant importer of higher education services to achieve its far-reaching economic aim of continued development (ibid).

Enhancing quality in higher education requires adequate funding flows in the universities to improve the education and research-related infrastructures. In recent years, GoB is also showing positive intention to upgrade the quality of higher education and research scopes in the universities of Bangladesh. With this view, WB came forward to supporting universities in Bangladesh with funding facilities

through HEQEP administered by the UGC, Bangladesh. HEQEP predominantly facilitates the strategic plan for higher education for the period 2006–2026 prepared by the Ministry of Education (MoE) and UGC to improve the overall situation of the higher education sector (Hossain, 2017, pp. 48–52). The project's major goal is to increase the quality and relevance of teaching and research in higher educational institutions (HEIs) by fostering innovation and accountability inside universities and increasing the higher education sector's technical and institutional capacities.

Predominantly, higher educational institution in Bangladesh carry out prime responsibility to prepare human capital for the existing job market. Moreover, universities also contribute significantly to the research domain. Universities frequently seek funding sources from the government, industry and aid agencies. The world bank's funding assistance in HEQEP funding is open to all the existing institutions and universities, including research centres. University of Rajshahi has been one of the prominent recipients of HEQEP funds over the years. Several departments (e.g. departments in science, social science, business studies, engineering, agriculture and arts faculties) of University of Rajshahi received funding facilities from HEQEP in different phases in order to improve the infrastructures, curriculum and research environment to enhance the capabilities of the academics, students and researchers. Hence, the prime objective of HEQEP funding was to improve or enhance the competence and capabilities among the main stakeholders in the classroom and research laboratories in the universities. However, it has been challenging to continue academic activities in the universities in Bangladesh due to the outbreak of the COVID-19 pandemic. Most of the faculties and university administration expanded and enhanced their information communication and technology (ICT) capacity with the support of HEQEP project funds, preparing University of Rajshahi to facilitate distance learning. Due to the pandemic in which academic activities halted for a long time and students, teachers and researchers discontinued their academic activities, the ICT capacity built by the HEQEP project in the university facilitates the continuation of academic activities in the universities through the online platform. In addition, the Bangladesh Research and Education Network (BdREN), also a contribution of the HEQEP, is used by all public and private universities in Bangladesh to conduct online teaching and research. This chapter particularly aims to explore the contribution and effectiveness of HEQEP in building the capabilities of the students, researchers and academics at the University of Rajshahi.

Subsequently, this chapter is organized as follows: Sect. 20.2 discusses the background of the study, Sect. 20.3.1 discusses the brief background of HEQEP, and Sect. 20.3.3 discusses COVID-19 and education in Bangladesh. Section 20.3 comes with a relevant literature review. Section 20.4 discusses the methodology, Sect. 20.4.1 discusses the data collection procedure, and Sect. 20.4.2 presents the data analysis process. Section 20.5 of this chapter discusses the study's findings, and finally, Sect. 20.6 concludes with the limitations and future research direction of this study.

2 Background to the Study

Education is widely recognized as a key tool for boosting socio-economic prosperity. Knowledge-based competitiveness in a globalizing economy necessitates a relook at higher education's role and contribution, particularly in building human capital and research discoveries (Gu et al., 2018, p. 13). Bangladesh's economy is shifting from agriculture to industry (manufacturing and services), all of which have enormous potential to aid developing countries in their development (Hossain, 2017, pp. 47–48). Higher education is required as part of Bangladesh's aim to create and strengthen its knowledge society (Al-Amin et al., 2021, p. 2). The GoB is dedicated to speeding up improvements in the country's higher education system and assisting with the strategic plan's implementation. The Ministry of Education (MoE) has the ultimate power for policy creation, strategic leadership and budget preparation for public support of higher education.

The UGC, part of the MoE, was established in 1973 to oversee all universities and act as a liaison between the government and institutions to manage university issues (Rahman et al., 2021, p. 1514). In the last 4 years, the number of tertiary-level students in Bangladesh has doubled, from 1.12 million to 2.61 million (Abir et al., 2021). Furthermore, over the last decade, the number of HEIs in Bangladesh has expanded dramatically (Alam et al., 2020). However, education and research quality could not keep up with the horizontal growth (Alam et al., 2020). Almost all public universities rely on government support. However, out of the 38 public universities, the National University is the only one that is financially self-sufficient and solvent. It receives all its funding from registration and examination fees paid by students. The fees received from registrants can cover around 30% of the Open University of Bangladesh's revenue expenses, with the remainder supported by the government through the UGC of Bangladesh (Rahman, 2019). In light of the above discussion and a significant increase in university administration expenditures, the government is required to spend a significant amount of money from the general fund on public universities each year. The government provides around 95% of the funds for higher education, with universities generating a maximum of 5% on average from their resources. In the public budget, tertiary education is given low priority (Monem & Muhammad, 2010, pp. 11–12). While all forms of education have gotten the most significant priority in budget allocation (around 10–11% of the total revenue budget), university/higher education spending has never exceeded 1% of the total revenue budget allocation in the last 10 years (Hossain, 2017).

University of Rajshahi has been the recipient of HEQEP initiatives for the past few years. The overall goals of the HEQEP project were to improve the teaching-learning environment by developing physical facilities at the University of Rajshahi's Institute of Education and Research by 2016 and to increase the teaching staff's capacity at the University of Rajshahi's Institute of Education and Research by 2016. More specifically, HEQEP aimed to improve the Institute of Education and Research of the University of Rajshahi's classrooms, seminar libraries and other institutional facilities, as well as to establish ICT infrastructure, including a computer lab, for the Institute of Education and Research of University of Rajshahi's

teachers and students and to publish a peer-reviewed international-quality journal on education by the Institute of Education and Research of the University of Rajshahi.

Students can now study a sufficient number of books and journals as a result of this project, and their expertise, pedagogical knowledge and abilities have developed significantly in accordance with ICT aspects. As a result, students have received a high-quality education; our departments have started research-based training programmes along with our regular courses. Modern teaching-learning resources and better physical facilities have been provided widely.

The sub-project is intended to increase the teaching staff's capacity and develop overall teaching-learning provisions at the University of Rajshahi's Institute of Education and Research. This project built an ICT-based effective, interactive teaching-learning environment to increase educational quality. To do this, the institute's academic infrastructures have been refurbished and upgraded by embracing ICT. Academic personnel have also been taught to become familiar with the new teaching-learning environment. Teachers and students have access to the new teaching-learning resources, breaking down traditional learning barriers.

3 Literature Review

The development of capacity building has been overwhelmed with books and articles since the early 1990s. Improving systemic conditions to create an enabling environment for poverty reduction and sustainable development is a contemporary (and elementary) interpretation of capacity building within assistance and development. Evaluation experts facilitate learning experiences such as training and mentoring, as well as written materials and technology, in capacity building. It frequently adopts a participatory approach, in which an expert collaborates on assessment activities with programme staff. Educational capacity building (ECB) is aimed to promote the programme and organizational learning by bringing workers together to participate in evaluation activities and reflect on programme execution. According to the ECB literature, ECB can lead to increased knowledge about assessment, enhanced skills linked to evaluation and favourable evaluation beliefs. The key motivation for this university's initiatives to increase faculty capacity is to assist faculty in using learning outcome assessment (LOA) for programme improvement, which will help meet external accreditation standards (Stitt-Bergh, 2016).

Universities play an essential role in sustainable development by educating and preparing their students to address the challenges, they also need to build capacity within their structures and systems so that they can operate more sustainably, and, finally, they have a role to play externally by contributing (through education and research) to building capacity with stakeholders across their communities (Shiel et al., 2016). The importance of learning, communication and capacity building for sustainable development is constantly confirmed and writ large in the many statements on higher education sustainability (Lozano et al., 2013; Moore, 2005; Tilbury, 2011).

Building capacity in local communities is becoming more important in a global society where resources are limited and methods and technologies are changing.

According to Merino and de los Ríos Carmenado (2012), building community capacity contributes to social development and economic progress. According to Brown et al. (2001), capacity building is a continual process of improvement within an institution to maintain or increase the services offered, i.e., an internal process that can be strengthened when an external entity helps the institution better its functions. According to literature analysis, the term ‘capacity building’ has become more prevalent in recent years. Some studies focused on definition (Thomas & Day, 2014), while others attempted to map different interventions (Davison et al., 2014), and a few studies looked at their outcomes (O’Rafferty et al., 2014).

Furthermore, few studies have evaluated institutions’ efforts to enhance capacity locally or included significant groups of people (Leal Filho, 2010; Nicolaides, 2006). Hart et al. (2009) looked at the case of Brighton University, which has specific community capacity-building programmes in place. This university has a community-university partnership programme (CUPP) that provides a service that develops and promotes engagement activities across the university and long-term relationships to benefit both local communities and the university in the long run.

The MoE and UGC in Bangladesh have regularly addressed the capacity-building issue by holding periodic seminars, workshops and conferences with policymakers, administrators, vice-chancellors, principals and teachers. Moreover, the education ministry has been taking several measures to improve the quality of higher education (Mamun-ur-Rashid & Rhman, 2017; Islam & Arefin, 2017). To address this issue, the government has made steps to ensure the quality of higher education in Bangladesh through HEQEP sub-projects funded by the World Bank and implemented by the University Grants Commission (Mollah, 2021).

3.1 A Brief Background of HEQEP

The abbreviation HEQEP stands for higher education quality enhancement programmes. This was first implemented in 2009 by Bangladesh’s UGC, supported by the WB (Rahman, 2019). HEQEP’s central office is based in Dhaka. HEQEP aims to strengthen the country’s tertiary educational institutions’ teaching-learning and research capacities (Mollah, 2021). The academic innovation fund (AIF), the first of its kind in the country, is considered the cornerstone of the HEQEP. The AIF has funded approximately 300 sub-projects at public and private universities. These encompass a wide range of services, from constructing new lab facilities with contemporary lab equipment to developing faculty and support staff capability. In a nutshell, HEQEP has become almost associated with technological and infrastructure upgrades in classrooms, laboratories, offices and libraries. HEIs across Bangladesh appear to have been revitalized due to the AIF support. According to the 20-year plan, there will be a tremendous increase in the number of people seeking higher education. Consequently, the MoE sought assistance from the World Bank to execute the long-term plan.

The project titled ‘Higher Education Quality Enhancement Project (HEQEP)’ was approved by the Executive Committee of the National Economic Council (ECNEC) on 23 October 2008, after a series of consultations with various stakeholders, including the WB, Economic Relations Division (ERD), Planning Commission, MoE and UGC. The GoB and the WB signed a Financing Agreement in 2009. The project’s estimated cost is Tk 6810.4 million (Tk 5984.8 million and GoB Tk 825.6 million). The project was active from 2008–2009 to 2013–2014 (Mahmud et al., 2018). In January 2013, the project was redesigned to make it easier to meet all of the project’s objectives and to assure the long-term viability of the reforms implemented, and the project’s implementation duration was extended until 31 October 2015. The project’s implementation duration was extended later until December 2018. This project’s revised total anticipated cost is Tk. 19024.19 million (Rahman, 2019).

The project has four components to achieve the goal: (I) boosting the academic innovation fund (AIF), (ii) establishing institutional capacity, (iii) increasing the higher education sector’s connectivity ability and (iv) project management. The AIF awards grants based on three criteria: improvement of teaching-learning in undergraduate and master’s programmes, (ii) expansion of capacities for non-degree and post-graduate research programmes and (iii) university-wide innovations – window 1, teaching-learning; window 2, research; and window 3, university-wide (UW) (Islam, 2018: 14). Hundreds of sub-projects have been done or are being implemented at public and private universities across the country as part of this programme through several windows.

3.2 University of Rajshahi and HEQEP

The University of Rajshahi is Bangladesh’s second-largest university and a public institution. It was founded on 6 July 1953, and according to EduRank, University of Rajshahi ranked third in Bangladesh and 2151st in the world overall ranking. EduRank ranking is based on three factors, for example, research performance, non-academic reputation and the impact of 23 notable alumni. The algorithm was evaluated based on 4899 publications and 56,018 citations (EduRank, 2022). The university has 58 departments and 12 faculties, six institutes and 62 linked colleges and institutes (Mollah, 2021). The Rajshahi Institution Act 1953 (East Bengal Act XV of 1953) was approved by the East Pakistan provincial assembly on 31 March 1953 and founded the university. Now, this university is operated according to the University of Rajshahi Act, 1973. Bangladesh’s UGC is the primary statutory organization responsible for overseeing, maintaining, promoting and coordinating university education (Islam & Arefin, 2017). HEQEP sub-projects have already been implemented in some of the departments of the university.

At the University of Rajshahi, some departments, namely, Islamic history and culture, management studies, sociology, botany, statistics, political science, accounting information system, computer science and engineering, population science and

human resource development, public administration and fisheries, have completed the HEQEP and used the awarded fund in the infrastructural development. These infrastructures include renovation or/and introduction of new research labs, research centres, classrooms, projectors, broadband-Wi-Fi Internet, office rooms, conference rooms, teachers' room, etc. The project's money has also been spent on enhancing teaching and presentation capacity through comprehensive training programmes. After completing the HEQEP, it is believed that the implementation of the project has significantly enhanced job sincerity, carrying out quality research and publications and attendance of national and international conferences and seminars. The project has also significantly improved the contemporary curriculum, which meets the need and expectations of the global quality of higher education of the students of Bangladesh.

3.3 COVID-19 Outbreaks and Status of the Universities in Bangladesh

The COVID-19 pandemic has harmed certain governments' efforts to increase education spending. COVID-19 has caused mayhem worldwide, and education, like any other essential industry, has been severely impacted. Students, schools, colleges and universities have all been significantly impacted (Rahman, 2019). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), over 800 million students worldwide have been affected, 1 in 5 students are unable to attend school, 1 in 4 students are unable to attend higher education classes, and 102 countries have ordered nationwide school closures, with 11 implementing localized school closures (Shammi et al., 2021).

To comply with the WHO standards, the GOB imposed social separation from 15 March 2020 and advised people to work, study and conduct religious practices from home (Shammi et al., 2021). In such a circumstance, the GOB decided that all educational establishments would remain closed since 18 March 2020 to prevent the virus from spreading (Haque et al., 2020). Face-to-face learning was disrupted due to the lockdown's closure of schools, colleges and universities, and educational institutes around the country shifted to online learning platforms to mitigate losses of academic years (Abbasi et al., 2020). In dealing with such a difficult scenario, the GOB, like other countries, strongly emphasized the online education system (Hoq, 2020).

In the country, both public and private universities attempted to implement such online education (Haque et al., 2020). Before the regular sessions began on 18 March 2020, approximately 90% of Bangladeshi students attended face-to-face classes. Since the COVID-19 situation made it a reality to have online classes and implement them, it is now necessary to learn about how HEQEP provided the benefits of online classes and kept academic activities uninterrupted, particularly at the University of Rajshahi.

4 Methodology

As mentioned earlier, this chapter focuses on the contribution and effectiveness of HEQEP in developing the capacities of University of Rajshahi students, researchers and academics. Furthermore, this study aims to investigate the role of the HEQEP fund in ensuring ongoing academic activities at University of Rajshahi throughout the COVID-19 pandemic. To achieve the objectives of this piece of research, this study undertakes a qualitative approach to understand the effectiveness of the HEQEP capacity-building process more deeply. According to Olson and Dascal (2013), a qualitative research approach explores a phenomenon that represents diverse realities and is socially generated by individuals participating in the phenomenon. A qualitative methodology, according to Wildemuth (1993), takes ‘an interpretative approach, intending to understand the social world from the perspectives of the actors within it, [and] is oriented toward a detailed description of the actors’ cognitive and symbolic actions, that is, the meanings associated with observable behaviours’.

4.1 Data Collection

As part of the qualitative approach, this study collected data through in-depth interviews with the faculty members who were sub-project managers, members, and chairman of a project implemented at the department. The researchers collected data from one of the deans of the faculties who was involved with HEQEP in the previous years and implemented the project successfully at the University of Rajshahi. The researchers applied open-ended questionnaires to explore how HEQEP facilitated enhancing capacities among the students, teachers and researchers. During the data collection, the researchers ensured that all the protocols required for the interview data collection process was rigorously maintained. Since the corresponding researcher is a professor in the studied university, a research assistant has been hired and trained meticulously to interview to mitigate any bias during the data collection procedure.

4.2 Validity and Reliability of the Interviewed Data

To ensure the validity and reliability of the data, the respondents were selected purposively from the cross departments. For example, the respondents were selected from multiple disciplines like social science, science, arts, business and engineering. All the respondents were held responsible for implementing HEQEP in their respective departments and faculty. However, not all the respondents continued all the university’s window tiers of HEQEP funding. Nevertheless, while implementing the project, the respondents’ prime concern was enhancing capacities at their

department level. The respondents awarded with the HEQEP fund could independently plan and design their funds to facilitate capacity building. This study took seven in-depth interviews from multidisciplinary faculties. For every respondent, the researcher posed five open-ended questions relevant to exploring the effectiveness of HEQEP in building capacities among the teachers, students and researchers. Each interview lasted for 30–40 min. The entire interview session was recorded using an audiotape for subsequent data analysis procedures.

4.3 Data Analysis Process

The data analysis process started immediately after the data collection process. The recorded interviews were transcribed meticulously and coded based on any impactful keywords. Further, the keywords were categorized according to the uniqueness of the perspectives. Finally, the categories were discussed in the following section of this study. The study's findings are discussed elaborately to obtain the objectives of this research.

5 Findings and Discussion

The prime objective of this research is to explore the areas where capacity building is visible using HEQEP funds of different windows. The entire fund was utilized by the departments (only those awarded) to develop the physical and soft skills of their educational facilities and academic staff. As part of physical capability building, the nominated departments that received HEQEP funds renovated the infrastructure that supports the quality of education and learning in the departments. For example, the HEQEP fund was efficiently utilized to improve the classroom condition by installing modern teaching equipment and technologies; refurbishing the office, teachers' rooms, seminar and library halls; etc. As part of soft skill development, significant changes are witnessed through training and development, project learning approaches, curriculum development, software learning, technological adaptation, etc. However, the prominent areas of capability building at the departmental level at the University of Rajshahi are discussed in an interpretative manner in the following sections.

5.1 Infrastructural Development

There has been evident infrastructure growth at the implementing entities, resulting in a good teaching-learning environment. These sub-projects have completed the construction of computer labs and overhead projectors for compelling presentation and delivery of lectures and remodelling and modernization of classrooms and their

furniture, teachers' rooms, seminar library, and so on. HEQEP sub-projects' funds were utilized to purchase various inputs such as raw materials for remodelling classrooms, teachers' rooms and office rooms and enhancing seminar libraries, technical equipment for lab development, Internet facilities, projectors and research centres in chosen departments. As a result, departments are now hosting research workshops, national seminars and worldwide conferences. However, these appear to be intangible as well as fleeting successes. However, it may be claimed that these activities would be impossible without such financial backing. These initiatives have had a wide range of consequences on the teaching-learning environment at public universities.

Furthermore, it can be stated that, particularly in the case of public institutions, these types of accomplishments and activities were impossible to achieve due to a lack of cash from internal sources or self-funding. However, during the lockdown period due to COVID-19, the university could conduct online classes as overall automation, and required networking was established beforehand using the HEQEP fund. In addition to this, Bangladesh's University Grants Commission (UGC) developed the Bangladesh Research and Education Network (BdREN) under HEQEP on behalf of the Ministry of Education (MoE) with combined funding from the Bangladesh government and the World Bank. It is a high-performance data communications network that connects higher education and research institutions in both the public and private sectors. Hence, the online classes would be an impossible mission without preparing the overall automation and networking support. Generally, the sub-projects authorized under window 1 for infrastructural development had a broader scope. The above discussion is supported by the verbatim of the respondents as follows.

Yes, indeed, we have significant changes in the department. Look, our classrooms were not as modern as you can see today; these were conventional where we had to adhere with the blackboard only; now, you can see our classrooms are equipped with multi-media facilities and functionalities. Students feel more attached to classroom education. Moreover, they can access up-to-date data sources and study materials using internet facilities. Previously, we did not have any computer lab for our students. Now we have it, and students have been reaping the benefit of it during their courses and after graduation. So, I have to give full marks to the HEQEP funds. Without such a funding facility, this infrastructural development will never be possible.

#P1, HEQEP contributor; faculty of social science, department of political science, University of Rajshahi


We hugely benefit from integrating these modern technologies in our department, particularly in the classroom and in the labs. Being a department under the science faculty, we had a long want of such facilities to provide impactful teaching to our students. Thanks to HEQEP. [...]. The difference can easily be understood when other department teachers applaud our department's environment and achievements. I think such facilities should be made available for all the departments in the university.

#P5, HEQEP contributor; faculty of science, department of botany, University of Rajshahi.

It (online classes) was only possible during that time (lockdown) because we were ready beforehand with all the technological and technical support, say, automation and connection to the optical cable networking. It was indeed a magnificent work we completed spending this HEQEP money. I offered this automation almost 20 years ago, but unfortunately, the university could not manage the fund. Now, I must appreciate HEQEP to come up with this monetary support to complete this gigantic work.

#P8, HEQEP contributor; faculty of geoscience, geography and environmental studies, University of Rajshahi.

The following before-after contrast snaps can understand the overall infrastructural development supported by HEQEP at the departmental levels.

Before	After
	
Classrooms	
	
Department Seminar Library	
	
Department Computer Lab	

HEQEP also invested in supporting equipment that is relevant to research and development in addition to infrastructural development. The following pictures are evidence of such funding in some selected departments at University of Rajshahi.



Source: Authors. (Photo credit: Mirza Akibuzzaman)

5.2 Professional, Research and Development

HEQEP receives proposals in three windows, each with a different category. These are as follows: Window 1 is for teaching and learning, window 2 is for research, and window 3 is for the entire university. The second window of HEQEP is dedicated to university research and development (R&D) activities. The HEQEP introduced this window 2 funding programme to promote research, development and innovation-related activities extensively. These R&D-related activities include modernizing and/or strengthening research capacities in the departments, improving existing post-graduate programmes, developing high-quality MS/M Phil/PhD programmes, launching joint academic and research programmes, developing and/or improving laboratories and organizing frequent workshops to conduct innovative research, collaborative projects and professional development of academic and support staff for research in the universities.

Moreover, several research workshops, including pedagogical development, curriculum development and qualitative and quantitative research, have been organized to achieve these goals. These are seen to be beneficial for academic staff skill development. Furthermore, establishing a research centre and computer lab will benefit

academics and students in terms of improving their teaching-learning capacity. The following verbatim attests to the theme of professional, research and skill development status among the academic, researcher and students.

To meet the criteria of academic standards and teaching and learning methodologies, the quality and skill of personnel (all categories – academic, technical and administrative – are adequate in number and have the skills) are critical. As a result, teachers should employ new teaching strategies to encourage students to be curious, focused, engaged and enthusiastic in learning the subjects being taught, as well as maintain a scholarly approach to involving students in creative and innovative academic activities. HEQEP sub-project funds were used to conduct research workshops, seminars and pedagogical training to develop curriculum and teaching-learning approaches to build professional skills.

[.....] HEQEP is a big push for research and development among the teachers and researchers. One of the teachers who has been a part of our HEQEP got huge momentum in his research activities, and now his research articles have been published in high-ranked journals. On the other hand, students could engage themselves in innovative studies. Teachers are now more confident, and almost all the teachers are now using multimedia slides to present classes in front of the student. In the meantime, students are becoming more interactive and enthusiastic in learning.

#P5, HEQEP contributor; faculty of life and earth science, department of botany, University of Rajshahi

I at least can say that my department has taken too many important initiatives to promote research and development activities. For example, we brought adequate desktop computers for the teachers we can now sit at their office and can work in the air-conditioned office. Besides, I took the initiative to buy statistical software required for data analysis. Several workshops and training programs have been undertaken to develop the soft skills of the teachers and students.

#P2, HEQEP sub-project manager; faculty of social science, department of economics, University of Rajshahi

[.....] During the HEQEP tenure, I led a team of teachers from my department and attended a training program at the university named UKM in Malaysia. We had a very interactive training there for two weeks. After that training, my team became confident and supported other teachers regarding professional and research development.

#P6, HEQEP contributor, faculty of arts, department of Islamic studies, University of Rajshahi

5.3 Transformation of Culture, Attitude and Mindset in the Higher Education Sector

Regarding research and quality assurance (QA), the attitude and mindset of higher education stakeholders in Bangladesh have undergone major changes. The research grants provided academics with the funds they needed to purchase lab equipment

and shifted institutional ideas about research and its purpose. The fact that university academics are increasingly thinking about and concerned about intellectual property rights issues and seeing patenting as a viable option shows a significant shift in how faculty members and university administrators view research today. Furthermore, the AF's implementation of QA processes has resulted in major shifts in attitudes regarding QA both centrally and at the institution level. Most participating universities have constructed and staffed these cells, and the funding needed to maintain these structures comes from the national budget as of last year. The following verbatim attests to the discussion.

The conventional culture seems to be faded. Now, they (teachers) can think beyond classroom lectures. Many of them are becoming proactive in research activities.

#P1, HEQEP contributor; faculty of social science, department of political science, University of Rajshahi

Previously, organising a local conference in the department was beyond imagination. Now, we dare to organize an international conference in the department. More than 60 foreign delegates attended the last conference we arranged. It was a complete success.

#P4, HEQEP contributor; faculty of science, department of statistics, University of Rajshahi.

The following verbatim depicts the transformation of manual activities into digital culture.

The prime purpose of our project was to implement automation through an uninterrupted networking system in the university so that it could improve the quality of life among the people living on the campus. Imagine that you are coming into the office (teacher's perspective), and the first thing you are doing is tapping on the mouse to explore the internet, check your emails, and attend classes in an automated classroom..... We have built almost 26 kilometres of networking system using fibre optic cables in the university, which is the largest networking establishment in the university in Bangladesh.

#P8, HEQEP contributor; faculty of geoscience, geography and environmental studies, University of Rajshahi.

5.4 Curriculum Development and the Academic Result

The term 'curriculum' refers to a well-defined and prescribed course of studies, lessons and activities that students must complete to meet the degree requirements. Self-assessment will make it easier to incorporate the technique into developing, modernizing and upgrading the curriculum to meet the job market's needs. The university's mission and objectives, as well as the desired learning outcomes and general efficacy of the programmes, depend on the curriculum. Previously, in universities, the academic activities and education provided to the students were merely syllabus-based. A conventional syllabus was followed for several years, ignoring the updated knowledge in the education domain. HEQEP significantly contributes

toward curriculum development through extensive training and development activities. Involvement of stakeholders, need assessment, content, structure, defining course learning outcomes (CLO), skill development mechanism or strategy, evaluation and review are all part of the curriculum design and review process.

I must say that the most significant changes that HEQEP brought to us are the development of the curricular system in the education process. This is different from the previous syllabus-based education system. Now, both parties (teachers-students) benefit from the university's higher education.

#P1, HEQEP contributor; faculty of social science, department of political science, University of Rajshahi.

5.5 Formation of Accreditation Council

The UGC believes that an accreditation council is unavoidable to maintain a minimum level and assure quality assurance in Bangladeshi universities' tertiary education. Because the primary goal of any accreditation council exercise is to inform stakeholders and students' guardians about the quality of education provided by an institution and/or the value of its degree, there is a need to establish yardsticks or standards that a university should adhere to in its academic and other activities (UGC: 2005). The University Grants Commission is now assessing private universities using a set of criteria. It has already established a high-powered team to finalize the accreditation council's details. The committee is working on comprehensive criteria for both public and private universities. The following respondent informed,

It is indeed one of the greatest achievements to form an accreditation council. Now I believe that the university's education quality will be enhanced, and teachers will intend more towards providing quality education and research, and we will be able to compete globally.

#P4, HEQEP contributor, faculty of engineering, department of computer science and engineering, University of Rajshahi.

5.6 Introduction of BdREN

BdREN, a HEQEP initiative, began setting the groundwork for higher educational institutions' digital infrastructure by establishing high bandwidth and secure network access (Rahman et al., 2020). Bangladesh's University Grants Commission (UGC) developed the Bangladesh Research and Education Network (BdREN) under HEQEP on behalf of the Ministry of Education (MoE) with combined funding from the Bangladesh government and the World Bank (BdREN, 2022). It is a high-performance data communications network that connects higher education and research institutions in both the public and private sectors. With its multi-gigabit capability, BdREN aims to connect all universities, research institutions, medical

colleges, libraries, laboratories, healthcare and agricultural institutions across the country, providing reliable access to high-end computing, simulation tools and datasets to geographically dispersed academics, medical professionals, scientists and researchers. UGC signed an IRU contract with Power Grid Company of Bangladesh (PGCB) Ltd. (BdREN, 2022). It used two cores from its country-wide distributed OPGW network to deploy the BdREN backbone. This optical fibre serves as the foundation for BdREN's backbone network. Other regional and transcontinental Research and Education Networks (RENs) are linked to BdREN (e.g. TEIN, GEANT, Internet and others) (BdREN, 2022). It has connected Bangladesh's faculties and students to the world's academic community and learning resources. It also promotes international joint research and encourages the country's creativity.

BdREN provides support to 147 of the country's 153 public and private universities in order for them to teach online. Digitization had become mainstream in just 4 months. Daily, over 3800 classes are held online, with over 220,000 students in attendance. So far, 10,200 faculty members have taught a total of 203,200 classes to a total of more than 9.2 million students (Rahman et al., 2020). One of the respondents informed,

We could successfully reap the benefit of BdREN since we were prepared with complete automation in the university. The faculty members could easily adapt to the online platform due to their prior orientation with the ICT.

#P8, HEQEP contributor; faculty of geoscience, geography and environmental studies, University of Rajshahi

Initially, we were concerned about the online classes through BdREN, but gradually we found it user-friendly, and the students enjoyed it. Now, it is truly a backup plan for us.

#P8, HEQEP committee member; faculty of business administration, department of management studies, University of Rajshahi.

The COVID-19 outbreak caused universities to remain closed for such a long time. However, during this closure, BdREN developed an online platform to continue university classes. As a result, academic activities kept moving uninterruptedly, one of the biggest achievements in keeping universities and their stakeholders connected in the online domain. All the respondents during the interview appreciated the BdREN online platform for its virtual classroom presence.

6 Conclusion

Capacity building in the university cannot be obtained overnight. It requires a systematic approach, positive mindset, adequate funding sources, competitive environment, equity, accountability, quality measurement initiatives and social justice to enhance capacities gradually. It is a hot topic since a country's higher education is critical to developing intellectual ability, which is essential for knowledge production and utilization. Bangladesh, being a developing country, experiences severe

resource constraints. However, the available resources should be used to their full potential. Many apparent infrastructural developments at project implementing entities have been achieved thanks to HEQEP subsidies in public universities. These programmes assist organizations in adapting to the current information and communication technology infrastructure. It also aids in the enhancement of the teaching-learning environment.

The findings of this study reveal that HEQEP significantly contributes to the capacity building of the stakeholders. For example, teachers are now more inclined and adept at handling research-related projects. The research fund management unit has been getting more research proposals from the teachers from different departments. In terms of publication, teachers are more interested in publishing their research works than before. In addition to that, HEQEP contributed significantly to changing the mindset of the teachers and researchers. For instance, national and international seminars and conferences are organized by the individual department at the University of Rajshahi. Teachers and students are forming groups to do collaborative research, which was limited to classroom knowledge sharing.

Although HEQEP provided huge funding and intellectual support to develop infrastructure at the department level, follow-up funding was demanded to meet up the maintenance costs of the modern technologies. Hence, this study recommends that HEQEP officials collaborate closely with university officials to better use existing money for instrument maintenance. More skill development programmes are needed to assist students in finding jobs. There should be more practical training programmes on presentations and job interviews, as well as hiring a resource person who can follow up on and manage HEQEP resources established at the department level. Moreover, as part of the limitation of the HEQEP execution, there is an absence of central monitoring of the successful evaluation of these projects. Nevertheless, project managers must submit progress reports of their project-related updates from time to time. It is assumed from the discussion of the respondents that a central monitoring system of the HEQEP at the university level would enhance the efficacy and effectiveness of the project extensively.

The BdREN software introduced by the HEQEP became a large platform for teachers and students to continue their academic activities during the pandemic period. Since the nature of COVID-19 seems unpredictable due to the mutation of its variant, the school, colleges and universities often have to cease their physical appearance in the classrooms, causing great harm to their regular learning process. In such circumstances, HEQEP-funded BdREN proved to be an excellent online facility to carry on uninterrupted classes, examinations and other academic activities. In this study, all the respondents applauded such an online platform patronized by HEQEP.

This piece of research has certain limitations. A mixed methodological approach could have been a better option for a robust finding of such a measurement study, a cross-university with a comparative viewpoint would provide relatively interesting outcomes. Randomized control treatment (RCT) is supposed to be the best approach to exploring the capacity-building status of all the departments since only a few receive HEQEP funding. However, it is believed that this study will undoubtedly

contribute to the existing literature and become a reference for future studies by other scholars. Moreover, as far as the uniqueness of this study is concerned, this study applies a solo qualitative approach to explore the effectiveness of HEQEP when it comes to estimating the capacity building among the teachers, researchers, students and institutions which has been barely done before at the university level in Bangladesh.

Acknowledgments We thank Prof. Dr. Rakib Uddin and Prof. Dr. Md. Monzur Hossain, Prof. Dr. Md. Fazlul Haque, Prof. Dr. Md. Ohidul Islam, Prof. Dr. Md. Ekrmul Hamid, Prof. Dr. Md. AshrfulIslam Khan, Prof. Dr. Rejaul Karim Bakshi, Prof. Dr. Md. Jahanur Rahman, Dr. A.K.M. Mahmudul Haque and Mr. Mirza Akibuzzaman, without whose efforts this chapter could not have been written.

Appendix: Respondents' Profile

No.	HEQEP responsibility	Code name	Designation	Department	Faculty
1	Sub-project manager	P1	Associate professor	Political science	Social science
2	Sub-project manager	P2	Professor	Economics	Social science
3	Academic and researcher	P3	Professor	Computer science and engineering	Engineering
4	Academic and researcher	P4	Professor	Statistics	Science
5	Sub-project manager	P5	Professor	Botany	Life and earth science
6	Committee member, HEQEP	P6	Professor and dean	Islamic history and culture	Arts
7	Committee member, HEQEP	P7	Professor and chairman	Management studies	Business studies
8	Sub-project manager	P8	Professor	Geography and environmental studies	Geosciences

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Part V

Conclusion

Chapter 21

Reinventing the Higher Education Value Proposition After Covid-19



Michael Shaw, Sardana Islam Khan, and Priyantha Bandara

Abstract Covid-19 has put much stress on the higher education sector. As universities recover, new ways to improve their marketing should be examined. It is suggested that an expanded social power theory in conjunction with the extended marketing mix can be used to create a hierarchy of four value propositions that apply to prospective and current students and internal and external academics. These value propositions can be considered an aggregate that expresses a university's position in the marketplace. It is suggested that transactional marketing approaches are appropriate for prospective and current students, while relational marketing approaches are more suitable for internal and external academics. It emerges that the social power theory is more paradoxical in its application. Temporal differences also can be seen to add complexity to this model. Understanding these factors makes it possible for the four key value propositions to be improved (via alignment and intentionality) so that value delivery happens. It is argued that this model can be used with university rankings to enhance a university's market position.

Keywords Marketing mix · Social power theory · Transactional marketing · Relationship marketing · Value proposition

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1 Introduction

The evolution of the student as a consumer has been accompanied by corresponding developments whereby the higher education system is now a globalised and marketed industry (Gibbs, 2010; Judson & Taylor, 2014). Before Covid-19, a large international market for education had been created in the 1990s. However, the recent pandemic resulted in students and staff being locked out of universities and using online delivery methods. In the post-Covid-19 recovery stage, universities are now considering how to fine tune their market offerings. Some research suggests that the marketisation and active marketing of higher education have not always produced positive academic outcomes because it has overemphasised a focus on the student as a customer at the expense of academic integrity (Bunce et al., 2017).

Furthermore, it has been argued that this is part of a self-reinforcing agenda promoted by new approaches to public management (Deem, 2001; Marginson, 2008). This chapter will revisit the basics of the marketing mix in combination with management's social power theory to suggest a way forward. These two rubrics provide a heuristic that generates four value propositions that clarify what universities should be delivering.

Covid-19 border restrictions presented severe challenges to the higher education sector from 2020 to 2022 due to the almost immediate cessation of migration of international students to and in the advanced economies. Delivery was also compromised, with classroom interactions being cut dramatically due to the pandemic. Effectively this has driven a greater push towards online modes of teaching and learning and a simultaneous reappraisal of the value of traditional face-to-face delivery and the benefits of social interaction in a university context (García-Morales et al., 2021; Kalantzis & Cope, 2020). It is suggested that renewed competition for a smaller pool of students will require a more practical approach that balances academic standards against course commodification (Porfilio & Yu, 2006; Sauntson & Morrish, 2010). What is needed is a model or mechanism that allows this to occur effectively. Reconsideration of the fundamentals of marketing strategies suggests some possibilities.

Over the last two decades, an understanding has emerged that the techniques and concepts of internal marketing could be used to amplify organisational initiatives. It can help change and improve the higher education sector (Altarifi, 2014; Schüller & Chalupský, 2011; Vel et al., 2019). Consequently, higher education has been characterised by developing an externally oriented marketing push to attract students and separate selective internally focussed initiatives along human resources management. Surprisingly, there has been comparatively little work done on aligning these two types of marketing to produce better delivery of value across both internal and external aspects (Ahmed & Rafiq, 2003; Grönroos, 1983). The exception is in specific areas like inclusion and diversity, where approaches have been devised, the objective being to reinforce university brands. Much progress still needs to be made here (Codling & Meek, 2006; Moysiuk, 2019; Vue et al., 2017). The research question is how this bridging between internal and external marketing might be done

more effectively. Accordingly, this chapter provides a framework for harmonising initiatives in the higher education sector as it leaves the Covid-19 crisis behind. A comprehensive value map with four value propositions has been suggested highlighting the roles of academic colleagues and students. Proper use of this framework would help avoid tendentious initiatives, contradictory actions and misunderstandings.

2 The Marketing Mix and a Value Proposition for the Higher Education Sector

It has been suggested in an overview of internal marketing that most of the focus was on internal communication, training and internal market research with additional dimensions considered, including empathy and consideration, benchmarking, service quality, supervisory, consideration and team support, among others (Huang & Rundle-Thiele, 2015). Some confusion has been noted in the evolution of the concept of internal marketing itself as it has moved through three distinct phases, progressing from employee motivation and satisfaction to customer orientation and a broadening of the concept generally to include strategy implementation and change management. These three aspects hold currency and can be extended and augmented by applying a marketing strategy and implementing viable organisational strategies. This effectively starts a model for internal marketing (Rafiq & Ahmed, 2000). Going further, a specific marketing mix for internal marketing has been proposed, which consists of strategic rewards, internal communications, training and development, organisational structure, senior leadership, physical environment, staffing selection and succession, inter-functional co-ordination, incentive systems, empowerment and operational/process changes (Ahmed et al., 2003; Galpin, 1997). As such, it is an alternative to conventional forms of the marketing mix, although its categories can, with some effort, be related to the various elements of the 7 Ps extended marketing mix (Booms, 1981; Grönroos, 1997).

The problem with employing a marketing mix adapted explicitly for internal marketing is that it will be more difficult to align this with a marketing mix oriented towards the external scenario. It could also be suggested that marketing for students and marketing for academic staff are entirely different situations with their types of relationships and what drives them. However, that argument can be countered by the proposition that organisations should be consistently market-facing and market-driven if they want to do well (Jaworski & Kohli, 1993). An organisation must have a clear understanding of its value proposition and its underpinnings concerning external and internal activities and communications. After that, a common strategy can be developed which uses the techniques and tools of marketing to facilitate the delivery of value. From this point of view, the value proposition should be the central focus that orientates the entire institution and differentiates it in the marketplace (Waeraas & Solbakk, 2009). This particularly concerns high-involvement products

and services like education (Shaw & Nowicki, 2018). With that in mind, it is suggested that an integrated approach can be developed for higher education that employs both internal and external marketing by aligning them to increase their effectiveness.

The extended marketing mix (7 Ps) will be coupled with the social power theory to suggest how a unified approach might be conceptualised and applied. Despite being well established, these rubrics need some further examination. The marketing mix (4 Ps) comprising price, product, place and promotion is a fundamental concept encapsulating essential categories and variables in transactional marketing situations (Grönroos, 1997). This equates to specialised knowledge, which helps to construct and present value propositions. The extended marketing mix (7 Ps), adding process participants and physical evidence to the original elements (Booms, 1981), can be considered a more comprehensive selection that communicates choices in both transactional and relational marketing situations (Grönroos, 1997). Applying the marketing mix produces an amalgamation of these determinations, which are then presented rhetorically as a value proposition to a targeted group (Duncan & Moriarty, 1998).

3 Social Power Theory

Originating from organisational behaviour and management studies, the social power theory can be described as what motivates actors to achieve certain ends. In this, too, there is a certain amount of rhetoric at work, where propositions predicate specific actions and behaviours (Bender & Wellbery, 1990; Miles, 2013; Tonks, 2002). The social power theory initially consisted of five aspects – coercive, reward, legitimate, referential and expert power – which have since been augmented by informational power and then subdivided further, giving 14 variants (Elias, 2008; Raven, 1993). Compared to the extended marketing mix, the social power theory focuses more on what people do and say to each other to achieve specific goals, particularly in organisational contexts (Madigan et al., 2020; Yukl, 1981). As a result, it is more communication orientated at the onset but concentrated on a specific action that is aimed to achieve a final target. Given the emphasis of this study on internal and external marketing within the hierarchical nature of higher education institutions, these two theories naturally complement each other in this context. The proposition put forward here that an expanded social power theory featuring 14 types of power (Elias, 2008; Raven, 1993) together with the extended marketing mix of 7 Ps (Booms, 1981; Constantinides, 2006; Rafiq & Ahmed, 1995) can be used to reveal a network of engagements which describe both internal and external marketing (Piercy & Morgan, 1991). This indicates at least 98 possible areas of intersection providing a highly granular level of engagement (Storbacka et al., 2016), as is illustrated in Table 21.1.

Table 21.1 The value map and four value propositions

	Participants		Process		Physical evidence		Product		Price		Promotion		Place	
	Int/ext	Ext/int	Int/ext	Ext/int	Int/ext	Ext/int	Int/ext	Ext/int	Int/ext	Ext/int	Int/ext	Ext/int	Int/ext	Ext/int
Positive expert	External academics: Professors, Coordinators, Lecturers, Tutors		building productive relationships		Grade reports, Student/teacher evaluations		Current students: improvement in assignments via deference to superior knowledge		Time value and quality of effort needed to be put in		Encouragement, exhortation, explanation		Lecture theatre, Tutorial room	
	Auditors, investigators		Investigations, audits, complaints, criticism		Reports, recommendations, audits, reviews		Critique of assignments		Criticism of effort needed to be put in		Critique reminders		Lecture theatre, Tutorial room	
Positive referential	Visiting professors: higher professional status		Meetings, face to face, emails, online meetings, conferences		Discussions, evaluations, reviews, citations		Behaviour – modelling via Lecturer, tutors and tutorial groups		Positive reinforcement via group work		Praise from tutor or lecturer or group		Tutorial room, café library, pub, student housing	
	Auditors, investigators		External academic critiques, negative internal audits		Critiques, audits, reports, articles		Negative or negative criticism		Negative reinforcement via group work		Critique from lecturer or tutor or group		Tutorial room, café library, pub, student housing	
Direct information	Specialists within the fields		Publications, conferences, collaborative work		Course evaluations, publications, reference citations		Lectures, readings, course guides and notes		Time cost to student to process		Lectures, tutorials, readings		Lecture theatre, tutorial room, library	
	People from outside of area		Inferences, implications		Inclusions and omissions		Behavioural cues, extra course information		Minimal cost to student to process		Extra readings		Internet posters, hallways	
Impersonal coercion	Internal academics: Key performance indicators		delivering quality education		Reports, budgets, statistics targets		Prospective students: Course entry benchmarks		Social and economic gain vs time sacrifice		Peer pressure, societal expectation		National, state, company, workplace	

(continued)

Table 21.1 (continued)

	Participants	Process	Physical evidence	Product	Price	Promotion	Place
Personal coercion	Questions, investigations, threats	Performance management, disciplinary action, termination	Full-time employment and well-being for self	Course entry benchmarks	Social and economic gain vs time sacrifice	Parental and teacher encouragement	National, state, company, workplace
Impersonal reward	Happiness and well-being of fellow team members	Meeting team targets	Full-time employment and well-being for team members	Social and economic (extrinsic and intrinsic motivation)	Return on time investment with career opportunities	Achievement intrinsic/extrinsic satisfaction	Esprit de corps
Personal reward	Promotion of self-development, higher income, job satisfaction	Meeting individual and team targets	Full-time employment and well-being for promotions	Social economic and psychological (extrinsic and intrinsic motivation)	Return on investment	Prestige income interest in the subject	Prestige by association
Formal legitimacy	Faculty hierarchy	Acts, regulations, codes, charters, policies, procedures	Managing, supervising, monitoring, mentoring	Compliance with positional authority	Value for money	Student handbook course guide	School vs HE campus
Legitimacy of reciprocity	Looking after fellow team members	Consultation via meetings	Records of discussions, minutes	Reciprocation of support from parents or teachers	Cost of obligation to deliver	Contractual relationship	School vs HE campus
Legitimacy of equity	Fair distribution of responsibility	Contractual matters	Records, actions, reviews	Student rights, human potential	Contractual obligation	Contractual relationship	School vs HE campus
Legitimacy of dependence	Duty of care	Adequate supervision	Obedience to instruction	Duty of care	Liabilities	Legal status – in loco parentis	School vs HE campus

4 Mapping the Territory

The combination of these two rubrics interacting on a differentiated continuum reveals a heuristic featuring multiple lines of intersection with four distinct sections emerging. This happens automatically because of the two-part structure within the extended marketing mix, which consists of the original transactionally focussed 4 Ps of product, price, place and promotion and the later relationship-focussed extension of 3 Ps, which includes participants, process and physical evidence (Booms, 1981). A similar division can be seen with the social power theory, which ranges from the harder positional power types, coercive reward and legitimacy, to softer personal power types, such as referential expert and informational. In addition to the differentiation by section, a hierarchy of effects appears in the extended marketing mix. The four Ps on the top right-hand side of the table are the more overt criteria extracted from Borden's work by McCarthy and became the commonly accepted version (Borden, 1964). They can relate more easily to transactional marketing (Grönroos, 1997; Van Waterschoot & Van Den Bulte, 1992). The three on the top left-hand side are later additions that better encapsulate limited relational marketing aspects (Booms, 1981; Rafiq & Ahmed, 1995). This means that the bottom right section might be described as more transactional and action orientated, whereas the top left section could be considered more relationship and communications orientated. The heuristic that emerges from combining these two rubrics might be deemed a value map, which describes actions and communications in four distinct areas. It is suggested that these areas correspond to four key groups.

5 Four Key groups

A brief consideration of numbers, relationships and hierarchy in higher education might lead a manager to conclude that four groups needed attention. These are prospective students, current students, internal academics and external academics. There are other categories of supporting actors adjacent to these main groups that might also be taken into account, for instance, alumni, contractors, parents, teachers, agents and professional administrative staff. Seen comprehensively, these form an entire constellation of contributors whose activities are critical in terms of the daily functioning of a university (Gallo, 2013; Gibbs & Kharouf, 2020; Yang et al., 2020). However, the four main groups previously mentioned are the most significant in terms of their immediate importance because they provide the ability to generate revenue and prestige which sustain the university.

Therefore, the discussion will be restricted to considering these groups and how they operate within the sections of the value map presented in Table 21.1. There should be congruency with their scope of activity. This is not to say that actors would not deal with or be affected by intersections or actions outside their section. It is more the case that their primary task focus and behaviour are determined by

what is happening in their section. Accordingly, the elements of relational marketing naturally align with external and internal academics, while transactional marketing naturally align with prospective and current students. Effectively, academics deliver the transactional elements by using the relational ones. As we shall see, the social power alignments can be somewhat paradoxical and reflect the potential for conflict when there are contradictions between status and power (Anicich et al., 2016; Magee & Galinsky, 2008) or temporal orientation (Araujo & Easton, 2012; Marginson, 2009).

6 Prospective Students

This area aligns with prospective students outside the institution, so it may be considered external marketing with transactional elements. The value proposition revolves around attracting students who can commit to a program of study which will help them in their careers. This group might include recent school leavers or those still at school but about to matriculate, international, postgraduate and mature-age students. The product can be interpreted as the subjects and courses offered plus whatever the institution brings to the table regarding expertise and prestige. Price can be construed as tuition and enrolment fees and the subsequent effort needed to justify these. The place can be taken as a campus location, which can be an important consideration in a city or rural setting. Promotion can be regarded as general persuasion and rhetorical communication via messages that spell out the value proposition to actors. These aspects are the starting point for transactions characterised by applying the harder positional forms of social power, i.e. coercion, reward and legitimacy.

Legitimacy and reward are easily understood in the context of higher education presenting itself to prospective students. Coercion, on the other hand, is best seen as that imperative that motivates and drives students to choose a course or program of study and complete it (Woodall et al., 2014; Worrell & Mello, 2007). This may express itself as the consequences of failure versus the enjoyment of rewards (Marginson, 2009). It may be embodied externally to the organisation in parental figures or other authority forms such as teachers at school exhorting students to study hard so they might secure and keep a place at university. Schools, colleges and other institutions effectively feed students to higher education institutions in a supplier relationship that should be nurtured and facilitated. While this might have aspects of relational marketing that emerge over time, it is predominantly a transactional situation in its primary stages.

7 Current Students

This is an area where transactional elements apply in an internal marketing approach. There should be a high degree of alignment between what is presented to the previous group and what is delivered to this group. Otherwise, dissatisfaction may emerge, resulting in students withdrawing from courses. The value proposition revolves around developing skills and knowledge and providing the opportunity to qualify. This area of focus is congruent with existing students already within the higher education institution. Their engagements are characterised by organised activities, firm direction, motivations, clear guidelines and strong leadership from lecturers and tutors. Essentially, they are engaged in the repetitive, complex and evolving task of completing assignments that comply with set criteria and preparing for tests and examinations. Lecturers in the more popular subjects will be somewhat distant from their students, but the latter can expect a more personal relationship with their tutors. For this group, the types of social power employed will be personal rather than positional. These include expert, referential and informational power types. Supporting this observation, Rahim (1989) noted that coercive and reward power did not correlate positively with compliance in organisational settings, but using legitimacy, referent and expert power types did provide strong correlations with compliance.

Given those findings, these two personal power variants, perhaps augmented by legitimacy as a positional variant, might be what are applied in this setting as primary types. However, they will be underpinned by both coercion and reward operating as stick and carrot and manifesting as secondary and positional power types. In this context, if a current student does the work, he or she passes with a good grade; if they do not, then that person fails or obtains a bad grade. The value proposition is consistent with what is presented to prospective students regarding self-directed work-generated rewards (Marginson, 2009), although personal power rather than positional variants primarily mediates it. The emphasis is on encouraging responsible and productive behaviour. Similarly, the need for clear communication and explanations of the reasoning behind initiatives has been noted in management contexts (Ayub et al., 2014).

A closer examination of the original transactional marketing mix suggests that it can easily be extended into clearly defined aspects of classroom functions. The product encompasses the work task of generating individual and group assignments and preparation for examinations. Price reflects underpinning financial aspects such as student loans, on the one hand, for the individual student time allocation per unit and assessment task. For the institution, there are considerations of budgets, funding units and cost accounting in terms of teaching hours and overheads. Place can be refined to include the specific location on campus. For example, science and medicine are often taught in a laboratory, while media studies and art are sometimes taught in a studio. Regional campuses will have different approaches to city campuses, as will educational outlets catering to international students or different socio-economic groups.

Promotion can be used alone to reflect educational improvement initiatives' enthusiasm to exhort the students towards greater efforts. It also includes the standard communication needed to teach via lectures and tutorials. Consistency in terms of what is offered in terms of the elements of the marketing mix underpins and reinforces the value proposition. While this may be delivered in transactional terms over time as students progress, it may evolve to include relational aspects. Fundamentally, it remains a transactional situation where value is delivered and created according to expectations (Woodall et al., 2014; Worrell & Mello, 2007).

8 Internal Academics

A relational and internal marketing approach is applied in this context. The area aligns with colleagues within the higher education institution in a general sense across all departments. The value proposition is primarily concerned with delivering quality education to students. It is suggested that relational elements from the extended marketing mix such as process, participants and physical evidence as standard events or statistical descriptors and reports can be employed here to encapsulate actions and communications. Academics might appear to be functioning in terms of the transactional elements applicable to students, but they will do this professionally in terms of those relational elements which determine their behaviour. Putting their engagement with students aside, these parties continuously engage with each other via meetings, email and face-to-face discussions in a departmental and interdepartmental context. Because these relationships are socially on the same level within a collegiate activity, tremendous respect and tact are required. It is likely that focusing on process and physical evidence and treating participants professionally in a spirit of interdepartmental teamwork might lend itself to better exchanges within this group. Their shared focus is on delivering value to the current students, so their day-to-day activities will revolve around the transactional elements of the marketing mix applicable to that group.

This group is the most problematic in congruence and fit and might be considered the quadrant of paradox. In their exchanges, the subject at hand might often be stated in terms of process, physical evidence and participants. Nonetheless, the underlying power dynamic reflects something very different framed regarding process, participants and physical evidence. Higher education institutions are extremely hierarchical organisations, so the social power theory is very appropriate to use as a lens to examine them in context. However, rather than overtly exercising positional types of social power, which are coercive, reward and legitimacy, internal academics would probably regard those types of power as a latent potential. They might choose instead to behave more similarly to each other. In these situations, positional power is always present but not flaunted. An academic seeking to influence colleagues might use tactics based on rhetorical appeals that employ personal power and address aspects of the process, objective physical evidence and participants' needs, feelings and aspirations. In this regard, the consequential aspects of coercion,

reward and legitimacy are mainly erased but always present in some sense. These aspects of positional power would usually only manifest themselves in certain situations. This group needs to keep up professional appearances so there will be a high degree of alignment with the next group.

9 External Academics

The value proposition here is about building productive professional relationships at an individual and institutional level. A relational and external marketing approach is appropriate to this area, which aligns with academics outside the institution but with some relationship with it. This might be pedagogical social or academic. It may involve the citation of academics in teaching collaboration in producing research reviews, editing and writing papers, sitting on boards or committees, organising conferences or colloquia seminars and publishing journal papers (Nguyen & Meek, 2015). Regarding the social power theory, the types of power employed in engaging with this group will be personal since respect is expected in this type of relationship. These include expert referential and informational types of power (Elias, 2008; Raven, 1993). Rhetorical appeals may also reflect the employment of these types of power (Yukl, 1981).

Given that an actor might have no direct control over these people, the relationship would be characterised by respectful collegiate activities, communications, protocols and appeals. This might involve an emphasis on ‘process’, an awareness of ‘participants’ and a focus on the ‘physical evidence’ as reports, statistical analyses or research publications. Relationships are respectfully initiated and carefully developed with academics from other institutions over time. Collaboration on research and job opportunities are a major focus, and various forms of assistance are assiduously sought. This group has broad operational autonomy, is bound by professional obligations and enjoys substantial monetary rewards. It is accorded high-status professional courtesies and accommodations. Actors within this group constantly seek to leverage their connections for personal or professional advancement inside and outside their institution.

10 Discussion

The 4 Ps’ transactional elements of the original marketing mix are aligned with prospective and current students on the right side of the value map in Table 21.1. Conversely, the 3 Ps’ relationship elements of the ‘extended marketing mix’ are aligned with internal academic and external academics on the left-hand side of Table 21.1. The harder positional power at the bottom applies to prospective students, while the softer personal power at the top applies to external academics and current students. However, the harder positional power applied to internal

academics is somewhat moderated by the necessity to observe the social niceties more appropriate to exchanges with professionals in a collegiate environment. Likewise, the transactional focus of the section aligning with current students is mediated by softer forms of personal power appropriate to a social situation rather than harder types of positional power that characterise institutional structures. The elevation of the consumer is also a part of this (Tadajewski & Jones, 2016). This shift in emphasis explains why there is often a structural tension between alignment and intentionality (Taillard et al., 2016).

In general, actors may want similar things, but their position concerning an organisation sometimes clashes with their social expectations (Karpen & Kleinaltenkamp, 2018; Ingstrup et al., 2021). One critical factor here is the philosophy underpinning the value proposition. In many ways, prospective students as consumers are constructed as an amorphous tabula rasa ready to be inscribed upon by the higher education process. This coheres with basic objectivist concepts of education theory, where information is put before the students, who absorb it in a straightforward linear process (Nawaz & Kundi, 2010). However, this changes considerably when prospective students become current students in higher education because educators may employ a variety of approaches with a more constructivist orientation that utilises the complex social aspects of learning (Lister & Leaney, 2003).

The intersections between the marketing mix and social power theory are presented in Table 21.1. They are especially interesting since they describe how academics and students accommodate and balance organisational time requirements with personal time experience (Araujo & Easton, 2012). It could also be said that academics make time sacrifices to teach transactionally so that they might be rewarded by having the time to research, explore their subjects, develop their curricula and interact with other academics in relational terms. This is effective participation in a time market where they exchange one form of time for another (Guzmán-Valenzuela & Barnett, 2013). Similarly, prospective and current students must entertain a future perspective to study hard to maximise opportunities (Worrell & Mello, 2007; Marginson, 2009). It could be considered that this is one of the key factors common to all four value propositions.

Temporal differences can also create tensions between groups of actors (Araujo & Easton, 2012). For example, internal academic and external academics such as 'participants' deal with 'physical evidence' and 'process', which pertain to time past represented as reports or other summaries and time present, which might be an institutional procedure. On the other hand, current and prospective students are governed by 'promotion', expressed as time future. In this case, it may be direct instructions delivered in the form of lecture notes within a course guide or encouragement to do something in a certain way by a specific date in a tutorial. This involves generating a 'product' at a 'place' according to a 'price' which can be expressed as time and effort. As we have seen, this also involves a sacrifice for a reward that exists in a future time perspective (Marginson, 2009). Because Covid-19 has added another layer of uncertainty to investing in the future through education, it undercuts the value proposition to some degree. Institutions can counteract this by offering alternative paths for completion, such as online flipped classroom models or more

intensive courses. However, there is still the sense that value is not being delivered to those students who prefer the traditional university experience (Kalantzis & Cope, 2020).

As a remedial heuristic, the 'value map' describes how these contradictions operate and explains how situational behaviour can be optimised (Guercini et al., 2014; Ingstrup et al., 2021). It has the potential to transform value creation by framing action and communication strategies in terms of their most effective intersections. Indeed, it may even suggest actions at points where previously there was unrecognised potential, which is especially important for the dynamic and challenging post-Covid-19 context. Instilling the essence of marketing into a higher education institution's decision-making framework and operational structure would have the advantage of building a market orientation into its foundations (Jaworski & Kohli, 1993). This is often associated with commercially successful learning organisations and innovation (Atuahene-Gima & Ko, 2001; Slater & Narver, 1995).

The power differences amplify difficulties, which creates dissonance between groups which is reflected as persistent friction between faculty and the student body. To complicate matters further, there is a tendency for behaviour appropriate for one group of actors to evolve into behaviour better suited to another group of actors, especially as they move from undergraduate to graduate or postgraduate status. This type of aspirational modelling may be valuable in the long term as it facilitates co-creation and personal development. It can, however, also generate short-term misunderstandings concerning intentionality (Taillard et al., 2016). Guiding and handling behaviour like this correctly is critical for the effectiveness of service delivery in organisational settings (Cameron, 1986; Clegg et al., 2002; Schad et al., 2016). However, knowledge and power structures often work against this, creating a misalignment of shared goals, operational practices, beliefs and cognitions (Cacciattolo, 2014; Ingstrup et al., 2021).

11 Conclusion

Higher education is strongly characterised by a future time perspective (Araujo & Easton, 2012) as actors work towards various goals (Guzmán-Valenzuela & Barnett, 2013), where sacrifices made in the present are seen as an investment in the rewards expected to be obtained in the future (Marginson, 2008, 2009). Across the sector, this aspect has intensified in the post-Covid-19 economy resulting in many aspects of actor engagement being diluted, especially as online modes of teaching displace traditional delivery. This is compounded by existing tensions between the relational and transactional aspects of the marketing mix as it affects actors' behaviours and interactions. Students aspire to evolve from transactional to relational engagements as they progress through their education programs or courses. Simultaneously, academics must facilitate the delivery of a transactional value proposition from a position of relative hegemony. These two requirements can be a source of contradictions within the value proposition. The Covid-19 pandemic undercuts the certainty of

future rewards and the integrity of the value proposition. This occurs when students might want traditional face-to-face contact and interaction but must accept online delivery. Higher education institutions can use the model presented here as a framework for intersecting that deficit on a granular level and developing compensatory approaches.

Aligning all four value propositions and reconciling contradictions between transaction and relational elements in the 'extended marketing mix' assists the communication and delivery of the overall value proposition of a higher education institution. Likewise, optimising the use of the social power theory by employing appropriate aspects of positional and personal power will also enhance the overall value proposition (Marginson, 2008). Effectively this amounts to developing, facilitating and enhancing an organisation's brand. This would express itself as a variety of benchmarks found in university rankings and comparisons in the post-Covid-19 global higher education context. These might include grade point averages, fees, learning resources, overall engagement, learning experience, skills development, student support, teaching quality, expected graduate salaries, the percentage of graduates in full-time employment, publications and citations (Hosier & Hoolash, 2019). Students' ratings of universities have also become necessary as a market regulating influence (Darwin, 2021). While there are many questions concerning the validity of the methodology employed, these ratings have become an important aspect of external and internal marketing for universities (Kauppi, 2018; Pusser & Marginson, 2013). Rightly or wrongly, they are interpreted as aggregate criteria reflecting how well a university is functioning to deliver its overall value proposition to students and academics as consumers (Luque-Martínez & Faraoni, 2020). Necessarily, this encounter involves an exchange between the institution's value proposition and the student's personal values (Arambewela & Hall, 2013; Kopanidis & Shaw, 2014).

The model presented here facilitates alignment, intentionality and a focussed approach that drills down to the foundational level of actor engagement (Karpen & Kleinaltenkamp, 2018; Storbacka et al., 2016; Ingstrup et al., 2021). Problems can be framed and understood regarding the value map and the value provided to students as customers (Wæraas & Solbak, 2009; Woodall et al., 2014). Empirical benchmarks such as those generated by university ratings can then be compared, interpreted and used to guide strategy. Potentially this approach can be adapted to provide solutions that integrate the social and system aspects of workplace communications within and between organisations (Ferdous et al., 2013; Lings & Greenley, 2009). It has been argued that organisations that achieve a high degree of consistency in their internal communications and align this with their marketing channels will display a greater degree of marketing orientation (Peters & Fletcher, 2004). It is also possible that these organisations might tend to perform better over time with a greater degree of innovation and entrepreneurship (Duncan & Moriarty, 1998; Mohr & Nevin, 1990). This will be reflected in aligning their value propositions and where their brand sits in the higher education market. It is probably an area that needs further attention as the higher education sector gets back into gear after the Covid-19 pandemic.

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Chapter 22

Will a Paradigm Shift Emerge in Higher Education Institutions After Covid-19?



Parves Sultan, Masud Khan, Sang Hoon Lee, and Aman Maung Than Oo

Abstract The 22 chapters presented in this book by the 57 authors/contributors report various theoretical and empirical investigations of innovation, leadership and governance in higher education, focusing on during and after the Covid-19 periods across several countries, including the USA, Australia, India, Pakistan, Turkey, China, South Africa, Fiji and Bangladesh. This concluding chapter summarises the content of this book and briefly discusses the key findings of innovation, leadership and governance considering the post-Covid-19 periods. As is evident, the pandemic's impact and consequences have caused a global paradigm shift in the higher education sector from regular or traditional face-to-face classroom teaching to a more blended and online approach. The change is seen across all domains, particularly in digital curriculum transformation, designs, synchronous and asynchronous delivery, flexible contacts and micro-credentials. Similarly, governance structure and leadership need to be leaner, authentic, honest, transparent, flexible and accountable and work in collaboration between higher education and government policymakers.

Keywords Innovation · Leadership · Governance · Higher education · Covid-19

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1 Introduction

This book presents the challenges the higher education institutions have faced for the last three years due to the Covid-19 pandemic and how an integrated effort of innovation, leadership and governance in higher education could help overcome the challenges in the post-Covid-19 period. This book reports and discusses cases across developed and developing countries with critical reflections on theories. The chapters were founded on a literature review and included original contributions with qualitative and quantitative findings. The chapters provided empirical evidence of innovative and practice-led higher education delivery, leadership, impacts and governance strategies that could work well in higher education contexts seeking to recover and sustain during and after the Covid-19 pandemic across countries.

In all the chapters, the authors have presented and discussed cases from the perspectives of developed and developing countries. Covid-19 challenged more to the higher education sector in developing countries as those countries have significant deficits in teaching technologies and resources, online/Internet infrastructure, professional training and development and technology adoption and leadership to combat the unexpected effects.

Globally, the higher education industry has been affected hard by the Covid-19 pandemic, which impacted student attrition rates, study breaks, social and travel restrictions, revenue and job losses, mental breakdowns, sluggish research and the like. In the post-Covid-19 era, the higher education industry is expected to be (i) more resilient, innovative, responsive, tech-savvy and cost-conscious and (ii) more likely to focus on the external environment and market changes, challenges and trends and rebuild strengths and competencies for increased financial gains, sustenance and growth. This chapter summarises the key findings of this book's innovation, leadership and governance sections.

2 Innovation in Higher Education

This pandemic forced higher education to a new crossroad. One instantaneous change was online learning modes becoming the core delivery method during and post-pandemic periods. The primary and conventional ways of curriculum development and delivery, pedagogy and teaching within higher education institutions are now viewed as alternative models. The post-pandemic innovation in higher education would be extended and could include digital/online/flexible/blended curriculum design, pedagogy and delivery besides the conventional mode of delivery. Nevertheless, the importance of face-to-face classes, networking and live interaction with peers, guest speakers, the industry body and lecturers, attendance in clinical settings, consulting in the library and overall physical presence at educational institutions cannot be disregarded and would remain the top priority.

Virtual teaching and learning demand flexibility. Higher education institutions are expected to invest more resources in efficient synchronous (learning in real time) and asynchronous (untethered to time) delivery, online/offline and digitization of higher education services, digital collaboration within and across stakeholders of institutions, co-creation of curriculum/program with industry, partnership with domestic and international educational institutions and developing and sharing knowledge and business process models across institutions. Both domestic and international education strategies should focus on digital and offshore online opportunities (Shah & Lim, 2022).

The post-pandemic higher education has adopted the asynchronous learning model. In Chap. 15, the authors presented and discussed that it works best in digital formats where lecturers get the flexibility of preparing materials and uploading online where students can access, watch and learn the materials at their home and their own pace and make an online appointment with the faculty to clarify and discuss particular questions or problems. Thus, both students and teachers can have enough flexibility to the breadth and manage difficulties and crises. Will this be the norm of future education? Perhaps, this cannot be applied to all education disciplines as face-to-face and functional interaction is still needed in some areas such as engineering, health and the like.

During this Covid-19 pandemic, higher education institutions quickly transformed the regular face-to-face curricula and recorded lectures and delivered those online. This transformation worked well for those institutions that use various learning management systems (e.g. Moodle, Blackboard, Canvas, etc.). However, many institutions in developing countries had to close their operations to maintain social restrictions or deliver courses using various mobile technologies and social media platforms.

Teaching innovation needs to be the central theme with a focus on the student experience in learning. An appropriate mix of managing staff and student interaction, class discussion, group projects, data sharing, fieldwork and extra-curricular campus life, including student clubs and societies, can be developed online and in synchronous/asynchronous modes. However, there is a need to blend synchronous and asynchronous for better learning and experience (Bebbington, 2022).

The first and foremost step in digital curriculum design is the acceptance and broader understanding of the students, community and stakeholder groups about what this is for, who it is for and how better to design the user interface, resources, assessments and administration and serve the community. While some courses are relatively easy to transform and design digitally, some courses need face-to-face curriculum design and delivery. Therefore, institutions should select an appropriate mix of digitization and curriculum delivery.

Push and pull factors of curriculum development can influence international students' decisions to choose a university after the pandemic period. Chapter 6 found push factors as overseas employment prospects, teaching style variety and overall education quality. On the other hand, the pull factors are universities' tuition fees, payment structure and a socially friendly and secure learning environment. Besides, institution-specific factors, including university reputation and leadership, the

portfolio of courses, campus closures and access to student support resources (e.g. peer-to-peer mentoring groups via alumni networks), were found significant. The post-pandemic innovation should also consider these factors to reengage students and their families.

Authors contributing to the gamification of curriculum and assessment designs (see Chap. 5) found that proactive teacher support of the implementation of gamification influences student engagement in challenging times like Covid-19 via student psychological needs satisfaction. Curriculum gamification needs teachers' support to satisfy students and engage students and problem-solving. During the pandemic, when students were stressed out due to various concerns and uncertainties and when online teaching and online student engagement were equally stressful to teachers, this chapter demonstrated that curriculum gamification could help students engage better.

Contract cheating and ghost-writing for online/offline submission of written essays and assessments are some increased threats to academic integrity and practices. A team of Australian researchers provided in-depth insights into students' contract cheating and strategies to minimize contract cheating (see Bretag et al., 2018a, b, 2020; Harper et al., 2019, 2021). Curriculum design and assessment practices still follow a traditional approach of memory testing in many institutions across the globe. Institutions aiming and practising online/offline curriculum design should include assessment design in ways that constructively contribute to students' weekly learning outcomes and critically reflect industry practices. Assessment requirements and rubric design should be such that the contract/ghost-writers also find it challenging to take the job. There is a technology that should be adopted to manage these challenges.

An increased resource deployment on science, technology, engineering, mathematics and medicine (STEMM) and data analytics is being placed, and there will be more in the post-pandemic era. The importance of STEMM and data-driven decisions cannot be avoided; however, placing business, arts, humanities and social sciences (BAHSS) in the less priority basket would be unfavourable to any institution and community.

Post-pandemic higher education needs serious attention to include vulnerable or marginalized communities. This was echoed in Chap. 2, where the authors argued that US colleges should offer degree programs that incentivize non-traditional students to enrol in higher numbers. Incentives would help average students to meet their costs and support their families. The authors also stated that a new focus should be considered on student support services outside academia, such as day-care services and mental health and wellness services.

Innovation of micro units/subjects that contribute to skills and qualifications necessary for future employment, entrepreneurship and business innovation is rising. We have seen this has increased since 2020. Post-pandemic curriculum innovation must consider embedding micro skills/credentials in the degree/programs/qualification. Teacher training is equally important to innovate new and existing curricula, including gamification, and develop a curriculum with greater flexibility, synchronous-asynchronous modes and online/F2F delivery. Higher education institutions

must provide digital training to all staff and students and develop digitally shared networks across institutions. Overall, inherent in all the chapters was the need to focus more on developing remote learning and the future of internationalization of higher education.

3 Leadership in Higher Education

Leaders often struggle to make a balanced decision. With the convergence of crises during this global pandemic, leaders, academic and general staff have seen growing economic concerns and fund crisis, exacerbated prejudiced polarisation, extensive racial discrimination and unrest, relationship tensions and the like. Leaders are also challenged with limited institutional authority in decision-making, task, people and organizational and role tensions. Objectivity, purposeful acts, good governance and performance orientation may help make a balanced and unbiased decision. In this book, most authors found that transformational and agile leadership styles, during and after a crisis, such as Covid-19, can guide institutions effectively.

This book has several chapters on higher education leadership styles and practices during and after the Covid-19 pandemic. In the context of Turkey (see Chap. 13), for example, the authors reported that the post-Covid-19 leadership traits and behaviours should value success, knowledge and freedom over conservatism and traditionalism. The authoritarian and paternalistic leadership styles create divisions and increase employee turnover rates. It favours those who are closely associated with the leadership team. A transparent and inclusive leadership style was the most preferred style in the Turkish study. The post-pandemic leadership style is expected to move from authoritative and paternalistic to more transformative, participative and inclusive leadership behaviours over time. Transformational leadership needs to be more resilient, compassionate or empathetic, empower staff with trust and provide effort to bring skills and effectiveness to institutions. Equally essential, transformational leadership must develop long-term goals and ensure a platform supporting accountability, rights, equality, equity and justice.

When higher education institutions face increased urgency of digitization of curriculum and delivery, agile leadership style may be effective as an alternative to transformational leadership style. Agile leaders are both enablers and disruptors, and they are connected leaders who can adapt and transform institutions when an unprecedented level of change and transformations are required (Hayward, 2018). Simon Hayward identified the enabling factors as clarity of direction, empathy, trust, empowering and working together and the disrupting factors as digitally literate, thoughtfully decisive, questioning the status quo, creating new ways of thinking and being close to the trends.

The chapters in the leadership section of this book discussed leadership theories and explained those with examples in their educational and local contexts. The findings echoed that post-Covid-19 higher education leaders must be more transparent and follow transformational and agile leadership styles to ensure future growth and retain staff.

4 Governance in Higher Education

While most higher education institutions are now open and operating as ‘business as usual’, the unstable global political and economic environments are two major post-pandemic factors since 2022 that could affect the global higher education industry in two major directions: the first being the uncertainty and risk and the second is the student number and revenue. Thus, several chapters of this book investigated higher education governance issues.

Many colleges and universities in countries such as Canada and Australia that relied heavily on the international student cohort faced the biggest financial challenges due to border closure to international students, particularly in Australia. Leaders and policymakers need to rethink international education through more sustainable and reciprocal models. In this context, Bebbington (2021) stated that higher education institutions should create innovative international partnership models that allow courses to be delivered away from the traditional campus base, in other words, offering degrees through collaboration, joint ventures and growing a global online/on-campus faculty.

It was reported that the Indian education sector was liberalized in 2020 and invited the top 100 world’s leading universities to set up campuses in India (NMAT, 2022). China also developed new private universities in joint venture with many leading international universities, increasing from 37 private higher education institutions in 1999 to 757 in 2019 (Mok, 2021). This means that countries like the USA, UK, Canada and Australia that have been heavily relying on sourcing international students from China and India would need to rethink sourcing international students in the post-Covid-19 periods. It was echoed in a report and stated that only 15% of Chinese students would seek to study abroad after the pandemic (Bebbington, 2021). The post-pandemic could experience reduced demands for travelling to Western countries for Western education. China’s deteriorating relationships with Western countries, including Australia, could further affect international onshore enrolment. However, there is potential for offshore, online, joint venture and hybrid delivery for universities aiming to go globally.

During the pandemic, higher education institutions faced increased crises in regular revenues. Strategic and targeted redundancies or job cuts and reduced pay in higher education institutions across the USA, South Africa and Australia were common issues in some chapters. Chapter 17 investigated whether planned redundancies of >40,000 positions against predicted ‘revenue loss’ across universities in Australia had been reasonable on the ground of a meagre 0.2% point decline in international student number. Numerous studies and articles reported that such measures to address the so-called financial sustainability of Australian higher education during and after the pandemic had had a hidden agenda, including reducing the size of a school or department, individual or management preferences for specific staff(s), campus restructuring, keeping the top executives’ high salaries and other benefits and other short- and long-term plans. Chapter 17 raised a critical concern in the governance and leadership across Australian higher education and reported that

the estimated financial crisis or revenue loss had been used as excuses to achieve other hidden agendas that were otherwise cumbersome to legislate and execute. Nevertheless, the consequences of redundancies and job loss created severe social and economic crises at the individual and national levels in the USA, Australia and other parts of the world.

The post-Covid-19 period may experience shortage of knowledgeable and skilled academic and administrative staff in the higher education sector. People who were made redundant during the Covid-19 period across the globe would have started working in another country and/or industry. In addition, staff members are highly likely to seek other employment opportunities outside of higher education due to the pain and humiliation they went through during job/pay cuts and targeted redundancies. This suggests that a flexible alignment and arrangement of job conditions with face-to-face, online and hybrid options must be considered if higher education governance and leadership teams want to attract and retain competent and dedicated staff.

Chapter 19 reported that 86% of study participants in the Fijian University context preferred the work-from-home option during the pandemic. More recently, corporate giants like Google called US employees to work in offices for at least 3 days a week from 4 April 2022 and offered the flexibility to work from anywhere (Bienasz & Langley, 2022). Arizona State University now offers three alternative modes for students: on-campus with synchronous blended mode, synchronous off-campus mode and full digital delivery off-campus asynchronous model (Bebbington, 2021). Blended, synchronous/asynchronous and digital delivery will require a technological overhaul, IT support and a student-centred approach and curriculum, pedagogy and delivery training. Digital and blended delivery do not require teaching staff to be located on campus, they can work from home and remotely, and they would seek more flexibility and work-from-home options which can have an impact on the overall governance of the institutions in the longer term.

In the last 2 years, some universities' governance and leadership teams have been relying on outsourcing academics and facilitators globally and from third parties to teach online courses. Outsourcing facilitators or academics have both pros and cons. For long-term strategic goals, however, the governance and leadership teams need to carefully monitor and evaluate the operationalization procedures and ensure quality delivery.

Chapter 14 discussed transformative crisis management (TCM). According to TCM, leaders significantly change and improve their organizations during a crisis and demonstrate positive resilience, capacity and willingness to establish a positive change in the institutional environment. To bring positive changes during and after crises, the authors suggested that institutions must have adaptive governance in responding to and dealing with uncertainty, crises and environmental changes. Most crisis management models focus on financial recovery and stability. In managing crises, institutions often go through trial-and-error methods, where mistakes are expected and lessons are learnt about handling crises.

Australian borders were closed for over 2 years. During this period, almost every semester, several announcements were made informing international students about

their return and joining the programs. Students were ready to depart from their country and found another announcement of border closure and entry restrictions (Lowrey & Dalzell, 2022). These confused and mixed messages are unfavourable and show a lack of a robust governance system and leadership practices. A consistent crisis communication plan in a governance structure can eradicate some major misunderstandings. The crisis management decisions must be transparent with their reasoning and the outcomes of alternative evaluations.

Leaders develop the governance structure and operationalize it within an organization. Governance and leadership are interconnected. Governance is the process of making decisions and how the decisions are implemented, ensuring optimum utilization of resources and for the benefit of the organization and stakeholders. Good governance ensures participation, the rule of law, democratic and consensus-oriented, effectiveness and efficiency, accountability, transparency, responsiveness, equity, inclusiveness, etc. Institutional governance directs leaders on what decisions to make and how to make them. Strong institutional governance ensures better and responsible leadership, and weak or corrupt governance would acquire or develop ineffectual or corrupt leaders.

5 Conclusion

Post-Covid-19, higher education has already started to experience a new paradigm shift. This change has been in curriculum design, revised program structure, adopting innovative pedagogy and flexible delivery models. There has also been a significant shift in how staff engage and work. Universities need increased diversity to strengthen innovation, leadership and governance teams. Higher education institutions experience a paradigm shift to replace authoritative leaders with more transformative and agile leaders and construct a governance system that is simple and slim in size and more transparent and responsible in operation. The governance and leadership teams should develop a more flexible road map for staff and students, build infrastructure, lessen the digital divide gaps and narrow their mission to bring more efficiency and effectiveness. We hope that post-Covid-19 higher education will have sustenance through revenues and less partisan polarization, removing racial discrimination and unrest across the globe.

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