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ORIGINAL RESEARCH

Factors Promoting and Inhibiting Teachers' Perception of Success in Online Teaching During the Covid-19 Crisis

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Abstract
The COVID-19 pandemic led to the closure of schools worldwide in March 2020, causing significant disruption to educational experiences. Teaching and learning began to be organized and transferred from educators' homes with no prior preparation. The present research examined factors promoting and inhibiting teachers' perceptions of success in online teaching in the Arab educational system in Israel during the COVID-19 crisis using mixed-methods approaches, including a questionnaire completed by 195 teachers and interviews with 20 teachers. The research findings indicated that efficient, high-quality, and clear school communication, teachers' frequent use of synchronous teaching, students' high socioeconomic status, and older teacher age best explain teachers' perceptions of success in online teaching. The qualitative findings supported the quantitative results and provided insights about online learning challenges in the Arab educational system in Israel. This research enhances literature and practice by describing contextual factors affecting teachers' perceptions of online teaching success during COVID-19, and it provides valuable, culturally relevant insights to inform post-pandemic education policy design.

Keywords Teacher perceptions · Online teaching · Mixed research methods · School communication · Socioeconomic status · Arab teachers

1 Introduction

The rapid spread of COVID-19 as a health crisis has disrupted the course of human life around the world. Education systems worldwide, including Arab society in Israel, have been compelled to shift education to distance learning and teaching systems. In doing so, they have maintained learning and communication with students at their homes while adhering to the social distancing measures necessitated by the pandemic (Hodges et al., 2020).

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Professional research has emphasized the advantages of online teaching, positing that it can provide a supportive framework in times of crisis (Trust & Whalan, 2020). Online learning enables the imparting of knowledge while simultaneously addressing students' emotional needs and maintaining a supportive socio-educational framework (Schleicher, 2020). Despite these advantages, teachers' roles have become more complex, leading to new perceptions concerning their responsibilities. Recently, discussions have begun regarding teachers' perceptions of factors that may promote or hinder their success in online teaching (e.g., Law et al., 2023; Sokal et al., 2020; Masry-Herzallah & Dor-Haim, 2022).

Current literature identifies various factors that contribute to success in online teaching. Bolliger and Wasilik (2009) categorized three main factors influencing teachers' satisfaction and perceptions of success in online teaching in higher education: students, teachers, and the institution. Additional studies indicate that social and socioeconomic contexts, as well as cultural contexts (Bolliger & Halupa, 2018; Masry-Herzallah & Stavissky, 2023), are also influential in promoting online learning.

Importantly, the majority of studies investigating factors influencing teachers' satisfaction and perceptions of success in online teaching have been conducted in higher education and prior to the COVID-19 pandemic. In fact, there has been scant literature on the factors influencing school teachers' perceptions of success in online teaching during COVID-19, and specifically, there has been no investigation into the views of teachers in the Arab education system regarding successful online teaching. The present study aims to contribute to current knowledge in this field by exploring the perceptions of teachers in the Arab education system in Israel concerning the factors that promote or impede their success in online teaching during the COVID-19 pandemic.

Building on the factor categories suggested by Bolliger and Wasilik (2009), this study employed mixed methods to gather insights and perceptions from Arab teachers regarding factors that influence their success in online teaching. The investigation was conducted within the Arab education system in Israel, operating under specific cultural, social, and economic conditions, including the restrictions imposed during the COVID-19 pandemic from 2020 until now. Correlations were explored not only with organizational factors (Masry-Herzallah & Stavissky, 2021b), factors relating to teachers (Masry-Herzallah & Stavissky, 2021a), and students, but also with social and cultural factors and the interrelations among all these elements.

In contrast to previous studies, the present study aims to create a holistic understanding of online learning, relating to the interaction and correlations between different teacher-related, student-related, and school-related factors, in addition to external factors such as political, socioeconomic, social, and cultural contextual elements that influenced teachers' perceptions of success in online teaching during a crisis period. The findings of this study broaden existing knowledge about the social and cultural challenges characterizing diverse student groups, especially members of minority societies within multicultural states, when utilizing online teaching. The insights enhance understanding of online education during the unique COVID-19 period and also pertain to education within the complex and multifaceted context of Arabs in Israel. This knowledge can guide those designing online courses to consider appropriate strategies that enable teachers and students to navigate the challenges they encounter in online education, both in regular and emergency situations.

2 Literature Review

2.1 The Transition to Online Teaching During the COVID-19 Pandemic

The COVID-19 crisis led to the closing of schools and a sharp transition to distance learning as the sole response envisaged to prevent disruption of education in this emergency period (Reich et al., 2020). Online learning focuses on education over the Internet for students who are not physically on-site in a traditional school building (Badia et al., 2017). This form of teaching and learning is conducted through various tools and technologies on the Internet and combines synchronous and asynchronous methods. In asynchronous learning, technology connects students and the lecturer in learning activities without needing to coordinate time and place (Reid-Martinez & Grooms, 2018). Asynchronous teaching (through tasks) aims to promote students' independent learning. The teacher's role in asynchronous teaching is to offer guidance in the process of independent learning and provide scaffolding to support students' learning (Shamir-Inbal & Blau, 2021).

Synchronous teaching enables direct interactions between students and teachers while simultaneously using online conferences and chats (Aliyyah et al., 2020). Synchronous learning also uses technological tools that enable distance learning, but the teacher and students must be present in the lesson at the same time. The use of synchronous tools enables greater interaction between participants (Chauhan, 2017). However, technological problems are inherently common in the synchronous system, such as difficulties in connecting to the learning session and technological difficulties affecting hearing and speech (Astier et al., 2018). In emergency situations, both synchronous and asynchronous teaching rely on the teachers and students having developed relevant skills during routine periods in their schools (Shamir-Inbar & Blau, 2021; Tzivinikou et al., 2021). As already noted, the research was guided by the theory of Bolliger and Wasilik (2009), which identified three main factors: student-related factors, teacher-related factors, and school organizational factors influencing teachers' satisfaction concerning the effectiveness of online teaching. It relied on the assumption that teachers' satisfaction with online teaching could be measured by their perceptions that online teaching was professionally successful and effective. More recent studies indicate that teachers' satisfaction concerning online teaching can be measured by the extent to which teachers, students, and educational institutions are convinced that educational processes are progressing (Cheon et al., 2020).

2.2 Student-Related Factors

Bolliger and Wasilik (2009) found that student-related factors were the most important factors influencing teachers' satisfaction concerning online teaching. For example, students' active involvement in learning increases teachers' satisfaction.

In line with the critical approach to technology, following the hasty transition to remote learning, it has become clear that online learning does not suit every student in the education system and may affect the principle of equal education among students (Schleicher, 2020). This is because not all students in the education system enjoy the same environmental conditions at home that enable them to study online (Sancho-Gil et al., 2020; Sosu et al., 2021). The gap in educational experiences and achievements for learners who come from disadvantaged families or from domestic environments that do not support or contribute to

advancing their learning may widen further. Additional difficulties for online learning may arise because students are insufficiently prepared for online learning, which requires them to master technical skills. They also may not have access to an available computer and Internet network (Reich et al., 2020). In addition to student-related factors, other factors that affect the success of online learning are teacher-related, as described in the next section.

2.3 Teacher-Related Factors

Bolliger and Wasilik (2009) noted that teacher-related factors also influence teachers' perceptions of online teaching. Current research in this field indicates the importance of teachers' technological self-efficacy, resistance to change, and the teacher's age as factors influencing the teacher's perception of success in online teaching; these factors are now elaborated below.

2.3.1 Technological Self-Efficacy

Perceived self-efficacy relates to people's beliefs in their capabilities to produce given attainments (Bandura, 1997). One cannot be all things, as that would require mastery of every realm of human life. People differ in the areas in which they cultivate their efficacy and in the levels to which they develop it (Bandura, 2006). For example, computer self-efficacy represents the subject's own assessment of their ability to use computer technology to skillfully accomplish a specific task (Toto & Limone, 2021).

Technological self-efficacy refers to knowledge of a varied set of tools and technological resources employed to exchange, create, disseminate, store, and manage information (Chi et al., 2020). Teachers' technological self-efficacy refers to the teachers' ability to use technology as a teaching tool in the classroom and includes various skills such as operating technology, using computers to analyze data, integrating online information, and playing multimedia products (Tambunan, 2014). Teachers' perceptions of the effectiveness of their online teaching are influenced by their technological skills and their ability to use technological tools to manage learning (Bolliger & Wasilik, 2009).

The Talis report 2018 (OECD, 2020a) indicated that in Israel, experienced teachers frequently use practices that enable students to use technology when preparing projects or assignments in class, in almost a similar proportion to novice teachers. Thus, the report of the State Comptroller and Ombudsman (2021) indicated that the more years of teaching experience a teacher has, the higher their sense of self-efficacy is, and that self-efficacy helps teachers cope with the challenges of online teaching during the COVID-19 crisis.

Previous studies have demonstrated the importance of teachers' technological self-efficacy for their success in conducting the distance learning necessitated during the COVID-19 crisis (Gözüm et al., 2022; Masry-Herzallah & Stavissky, 2021a; Masry-Herzallah & Dor-Haim, 2022; Trust & Whalen, 2020). Teachers with high technological self-efficacy and self-efficacy are more likely to engage with educational technology and are more willing to use online learning approaches (Aderson & Maninger, 2007). Conversely, teachers with low technological self-efficacy are more likely to indicate lower intentions to engage in e-learning (Koc & Bakir, 2010). The teachers had a stronger sense of satisfaction when they received mentorship, training, support, and recognition of their success. They find it easier to assimilate online teaching when they have accumulated experience (Saeed et al.,

2021). It is therefore important to understand the concept of technological self-efficacy and its influence on teachers' perceptions of success in online teaching.

2.3.2 Resistance to Change

Previous studies have shown that resistance to change, expressed by resistant behavior to adopt real or prospective change (Oreg, 2003), may negatively influence the acceptance of new technology (Sharma et al., 2020). Much has been written about teachers' resistance to adapting to technology. Johnson et al. (2012) explained that teachers' lack of self-confidence in using technologies may engender reluctance to use them.

Polly and colleagues (2010) concluded that individualized mentorships, the development of curriculum materials, and creating technology-rich experiences increase teachers' technical knowledge and skills. They identified barriers to technology implementation, including a lack of administrative support and a lack of alignment between teacher's education programs and K–12 schools.

Another previous study (Masry-Herzallah & Dor-Haim, 2022) examined correlations between teachers' technological self-efficacy, resistance to change, and success in online teaching during the COVID-19 crisis in the Israeli education system. The study found a positive correlation between technological self-efficacy and success in online teaching and a negative correlation between resistance to change and success in online teaching. Organization-related factors may also influence teachers' sense of success in online teaching (Bolliger & Wasilik, 2009), as described in the next section.

2.4 Organization-Related Factors

A review of the relevant literature describes certain organizational factors that influence teachers' sense of success in online teaching both in routine and emergency situations, such as the COVID-19 crisis. These factors include a transformative leadership style, organizational communications, teachers' affective commitment, and an innovative climate, as detailed below.

2.4.1 Transformative Leadership

The school's leadership style is an important factor influencing success in online teaching (Harris, 2020). According to the Full Range Leadership Model, there are three main styles of management: transformative, transactional, and laissez-faire leadership. The transformative leadership pattern characterizes leaders who educate subordinates to recognize the task's importance in order to improve their level of performance (Bass, 1985). Transformative leadership instills in subordinates a high level of ambition, concern for the well-being of others, and recognition of the importance of the achievement and success of the organization (Bass, 1990). To motivate subordinates to action, transformative leadership uses four emotional channels of communication: charisma, personal consideration, intellectual stimulation, and interpersonal motivation (Avolio et al., 1999). Recent studies from the still-continuing COVID-19 period indicate the effectiveness of school leaders' transformative leadership to address educational issues, for example, responding to the needs of parents, teachers, and students and ensuring that teaching and learning are carried out effectively

(Harris, 2020). Transformative leaders set a personal example, take care to empower others, and cooperate even at a distance while using effective communication to ensure productive results for all (Harris & Jones, 2020). These traits have affected teachers' satisfaction and perceptions of success in online teaching during the COVID-19 crisis.

2.4.2 Organizational Communication in a Time of Change and Crisis

Organizational communication refers to the way in which information and knowledge are conveyed in the organization, for example, the clarity of the information and its different meanings (Jablin, 1987). The operational mode of the communication system significantly influences the organization's functioning, especially impacting how employees accept and adapt to change (McKay et al., 2013). This is because when employees receive clear and understandable information about the nature of change in the organization, they tend to evaluate the change more positively and demonstrate a greater willingness to cooperate with the consequences (Miller et al., 1994). Also, organizational communication characterized by the high participation and involvement of employees promotes a sense of trust with management and thus encourages acceptance of change (Courpasson et al., 2012). Lastly, high levels of participation and involvement encourage employees' sense of control over their work environment, which also increases their motivation at work (Leana et al., 1990).

Therefore, it can be assumed that the quality of organizational communication has a great impact on the school's adaptation to the changes that have occurred due to the COVID-19 crisis. The demands for quarantine and social distancing have meant that schools have had to rely on digital communication both for their classes and as a means of conversation between management and teachers (Betthäuser et al., 2022; Khan et al., 2020). This type of change emphasizes the necessity for clarity and empathic content in the various school messages. Studies conducted during the COVID-19 crisis found that organizations whose communication was characterized by high clarity as well as hope and empathy towards employees produced a beneficial organizational climate, innovation, and high productivity (Dever & Justice, 2020).

2.4.3 Affective Commitment

Affective commitment refers to the employee's emotional attachment to the organization, including normative commitment, reflecting a sense of obligation to stay in the organization, and continuance commitment, reflecting a fear of loss involved in leaving the organization (Meyer et al., 2002). Affective commitment is very valuable to the organization since it has been found to predict effective employee adaptation to change (Meyer et al., 2002) and strong effectiveness in task performance (e.g., Meyer & Herscovitch, 2001).

During the COVID-19 epidemic, the educational staff's emotional commitment to school may have declined. Since the educational staff have had to work remotely from home during the COVID-19 crisis, the quality of communication in the school has often been impaired, engendering a sense of loneliness (Wang et al., 2021). Therefore, the present study also investigates the dimension of affective commitment.

2.4.4 Innovative Climate

An innovative climate is defined as "an atmosphere within an organization that fosters and propagates creative mechanisms to achieve organizational outcomes and has in place various traits among organizational members that are conducive to creative and innovative ideas" (Ronquillo, 2011, p. 11). An innovative climate was found to correlate positively with clear organizational communication (Ekvall, 1996).

Exploring whether an innovative climate existed in schools became more important after the outbreak of COVID-19. The rapid spread of the pandemic required teaching staff to quickly adapt to major changes and teach in new and unfamiliar ways.

This section describes factors influencing teachers' perceptions of success in online teaching. The next section describes the unique features of online teaching in the Arab education system in Israel in order to understand their potential effect on Arab teachers' perceptions of success in such teaching.

2.5 Online Teaching in the Arab Education System in Israel

The state Arab education system in Israel is subordinate to, but separate from, the Jewish education system in Israel. Research literature on Arab education in Israel indicates that the Arab education system suffers from government discrimination on many levels, including the allocation of budgets and infrastructure. The government determines its curricula but does not include them in decision-making (Arar & Masry-Herzallah, 2018).

Previous research literature indicates that the Arab education system is influenced by the collectivist characteristics of Arab society. Arab schools follow a traditional, frontal, teacher-centered teaching system, positioning the student at the margins of the learning process. The prevalent leadership style within the Arab education system is authoritative, aligning with the traditional, collectivist, hierarchical Arab culture. Consequently, teachers are rarely involved in the decision-making process for school policies, and there tends to be a social distance between principals and teachers (Masry-Herzallah & Arar, 2019).

Studies show that the Arab education system has faced many challenges in integrating ICT into teaching without prior preparation. The slow entry of computing into the Arab education system intensifies the existing digital deficiencies. These deficiencies, in turn, affect the level of use of digital means in education in everyday life, which has implications for the degree of teachers' and students' readiness to use these means to promote distance learning during the COVID-19 crisis (State Comptroller and Ombudsman, 2021).

Recently, it was found that approximately half of the Arab students are not connected continuously to distance learning; in certain areas, distance learning does not exist at all due to the lack of infrastructure (Dahan et al., 2020). There is a lack of suitable end devices, and parents are unable to help their children. Moreover, the level of preparedness in schools and the investment in staff training in Arab society are lower than in Jewish society (Masry-Herzallah, 2022). Finally, the main platforms for distance learning are exclusively available in Hebrew, and there is a lack of digital content, such as videos and presentations, available in Arabic in comparison to those available in Hebrew (Dahan et al., 2020).

One study at the beginning of the first wave of the COVID-19 pandemic found that Jewish teachers and students reported more positive attitudes regarding online teaching and learning compared to Arab teachers and students (Masry-Herzallah & Stavissky, 2021a).

Studies have also shown that Arab schools are characterized by a traditional, collective organizational culture that does not usually advocate change and is especially reluctant to accept technological innovation. Direct and offline communication is preferred by Arab teachers over digital communication (Blau et al., 2020). This is augmented by Arab teachers' lack of digital and self-study skills, skills required in asynchronous teaching for students in the Arab education system (State Comptroller and Ombudsman, 2021).

To achieve these objectives, the following research questions guided the study:

1. What is the correlation between various factors such as the type of teaching, student-related aspects, teacher-related aspects, and school-related aspects, and the teachers' perceptions of their success in online teaching in the Arab education system during the COVID-19 pandemic?
2. Which variables predict the teachers' perceptions of success in online teaching?
3. Which factors promote or impede the teachers' perceptions of success in online teaching, and how?

The next section describes the methodology employed in the present research.

3 Method

3.1 Study Design

To examine teachers' perceptions of satisfaction with online teaching and how they are affected by other variables in the unique context of the COVID-19 pandemic (investigated during the period from May 2020 to November 2020) in the Arab educational system in Israel, mixed methods were used. The mixed-methods research design guiding this study was sequential and explanatory (Creswell, 2014). The descriptive research study was characterized by quantitative data collection and analysis, followed by the collection and analysis of qualitative data. Qualitative data were used to explain and interpret the findings of the quantitative study (Creswell, 2014) and provided rich contextual data that the quantitative data could not afford (Guetterman et al., 2019). The aim was that the research results would reflect the present situation of Arab teachers working in online learning and eventually inform education policy decision-makers about optimal teaching preparation. In particular, such findings could help school principals understand how to develop their teaching staff for effective online teaching. The sequential approach to explanation in the mixed-methods research exposed contextual information concerning the respondents' experiences. Analysis of the Arab teachers' narratives about their online teaching experiences revealed a common social-constructivist viewpoint.

3.2 Participants and Sample

One hundred ninety-five male and female teachers responded to the research questionnaire (32.8% male). The teachers were told that the research would investigate teaching during the COVID-19 crisis. The average age of the teachers in the sample was 39.73 (SD = 7.97), and the average number of teaching years was 15.39 (SD = 8.23). The teachers in the sample

reported that they taught online for an average of 8.5 h a week (SD = 6.32). Most of the teachers taught in junior high school (40.4%), while the rest taught in elementary school (35.6%) or senior high school (23.9%). Most of the teachers (70.8%) reported that most of the school's students came from an average socioeconomic background, and approximately one-quarter (22.5%) reported that most of the students in their school came from a low or extremely low socioeconomic background. A minority (5.7%) reported that most of their students came from a high or extremely high socioeconomic background.

After analyzing the questionnaires using descriptive statistics, the study conducted semi-structured interviews with 20 teachers (seven men and thirteen women). The semi-structured interview, composed of open and focused questions, helped the interviewees expose their stories and meanings openly and ensured the consistency of the interview themes. The researcher located the participants through convenience sampling, relying on personal acquaintance with some of the research participants, and received help from other acquaintances using snowball sampling, with one examinee leading to another (Bryman, 2016). The interviewees' ages ranged between 27 and 50. To protect the confidentiality of their identities, the 20 teachers were labeled as Teachers 1 to 20 without revealing their identities.

3.3 Data Collection and Analysis

As part of the research, we utilized various questionnaires that were adapted to the context of COVID-19, which will be further elaborated upon:

Dependent variable.

Perceptions of Success in an Online Learning Questionnaire This scale was based on a validated questionnaire used widely in past research (Bolliger & Wasilik, 2009). Fourteen statements were chosen to measure the success of online teaching from several angles and were adapted to suit the studied situation: the transition to online learning due to the COVID-19 pandemic. The angles included: (a) the student's perspective; (b) the management and organization of the lesson; (c) discipline; and (d) active learning. The teachers were asked to mark the extent to which they agreed with these statements on a scale between 1 (never) and 5 (always). Reliability was high ($\alpha = 0.89$).

Predicting variables.

Transformational leadership is measured through the conventional questionnaire proposed by Avolio et al., (1999). The questionnaire included 20 statements, three subsidiary indices: (1) charismatic influence; (2) intellectual stimulus; and (3) personal consideration. Teachers were asked to report the extent to which their school principal performed on a scale from 1 (not at all) to 5 (always). A Hebrew questionnaire was used and validated multiple times in Israel (Dvir et al., 2002). Reliability was very high ($\alpha = 0.97$).

Affective Commitment Teachers completed the 8-item affective commitment subscale developed by Meyer and Allen (1997) and a 22-item organizational commitment survey. These items were adapted to the school context during the COVID-19 crisis. For example, teachers rated items (e.g., "I feel an emotional connection to this school") on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). CFA results indicated good

fit indices: RMSEA=0.06; CFI=0.97. The questionnaire received good internal reliability (α=0.82).

Innovative Climate The extent to which the school climate encourages innovation during the COVID-19 crisis was measured using four items based on the tool suggested by Ekvall (1996), which were adapted to suit this situation. Teachers were asked to grade the extent to which the school in which they teach is "innovative," "takes advantage of opportunities," "takes risks," and "tries new things. The responses were rated on a scale from 1 ("not at all") to 5 ("to a very large extent"), and the questionnaire showed good internal reliability (α=.82).

Communication The quality of communication during the COVID-19 crisis was measured using a questionnaire based on the tool developed by Miller and colleagues (1994), designed to measure communication during organizational change. The educational system's sharp transition to online learning can be perceived as a form of organizational change. Therefore, this questionnaire was used to examine the quality of communication during the transition from traditional face-to-face learning to online learning during the COVID-19 crisis. The questionnaire was adapted to the nature of the current change. The questionnaire items were adapted to suit this situation (e.g., "the general picture that the school leadership created during this period was clear and structured"). The teachers were asked to grade the extent to which they agreed with seven statements on a scale ranging from 1 (not at all) to 5 (to a very large extent). Reliability was high (α=0.89).

Technological Self-Efficacy This skill was measured using seven items that were adapted from a tool developed by Bandura (2006), which measures general and specific self-efficacy for particular areas of technology. Sample items included: "If I invest sufficient effort, I will be able to cope with any new technology" and "I perceive myself as a person who understands technology. Teachers were asked to indicate their degree of agreement with each statement on a scale ranging from 1 ("not at all") to 5 ("to a very large extent"). Internal reliability for the measure was high (α=.87).

Resistance to Change This was measured using a 17-item questionnaire developed and validated by Oreg (2003). The questionnaire items were adapted as appropriate for the COVID-19 crisis situation and included four subscales: (1) searching for a routine (e.g., "I almost always prefer a routine day rather than a day full of unexpected events"); (2) emotional response to change (e.g., "When I am informed about a change in plans, I get a little stressed"); (3) focusing on the short-term (e.g., "Sometimes I find myself avoiding changes even though I know they will be good for me"); and (4) cognitive rigidity (e.g., "Once I have reached a certain conclusion, I am unlikely to change my mind"). Participants responded on a scale ranging from 1 ("not at all") to 5 ("to a very large extent"). Reliability was high (α=0.89).

The frequency of online teaching was measured by having teachers report how often they taught synchronously versus asynchronously. Responses were made on a 5-point scale, with 1 representing "never" and 5 representing "always".

Demographic Data collected through questions about participants' background information, such as gender, age, teaching experience, etc. Teachers were also asked to assess the socioeconomic background of most students in the school using a 5-point scale ranging from very low to very high.

3.4 Procedure

After obtaining the needed approval from the Ethics Committee at the author's academic college, the questionnaire was distributed through teacher groups on the Facebook social network and WhatsApp groups. The questionnaire was constructed on Qualtrics, an online platform frequently used for online surveys. The study's purpose was explained to the teachers, promising that the respondents' questionnaire responses would remain anonymous in any study publication, and they were provided with the researcher's contact details. The teachers' responses to the questionnaire were received between the beginning of May 2020 and June 2020.

The semi-structured interviews were conducted with each participant between August and November 2020. A semi-structured interview was deemed suitable for this research since it enabled the participants to reflect on their inner worlds and allowed the researcher to expand on subjects they wished to understand better by determining the subject for discussion (Cohen et al., 2011). The participants were interviewed individually by a research assistant for about 45 min through the Zoom platform.

Interviews were conducted to reinforce and explain the quantitative data from the questionnaires concerning the factors that promote or inhibit online teaching and teachers' success in online teaching during the COVID-19 crisis. Interviews were conducted by Arabic-speaking research assistants. The interview included questions relating to school-related variables, personality variables, background variables, and demographic variables of teachers and students. For example, "Describe how you teach in school during COVID-19?" and "What are the factors influencing your success? and "What are the differences between the synchronous and asynchronous models? Which model do you prefer, and why?; "Describe how information is transferred in the school during the COVID-19 crisis.; "To what extent do you feel part of the school? What are the factors influencing this?". To avoid social desirability (Patton, 2002), the interviewer avoided exposure to their personal perceptions and was careful not to express judgmental or moral opinions in response to the participants' remarks.

3.5 Data Analysis

The data analysis was conducted through quantitative and qualitative means. The results of the questionnaire were analyzed through SPSS software. Descriptive statistics were extracted for the research participants and selected demographic variables; other analyses included Pearson correlations between these variables. Hierarchical regression was performed to examine the contribution of each variable to the teachers' perceptions of the success of online teaching. Qualitative analysis of the interviews was conducted through Content Analysis in Phases (Creswell, 2014), including four stages: (1) organizing the data; (2) generating categories, themes, and patterns; (3) testing any emergent hypotheses; and (4)

searching for alternative explanations (Marshall & Rossman, 2016). This process aims to identify central themes in the data by searching for recurring mentions of experiences, feelings, and attitudes and subsequently coding, reducing, and connecting subthemes into central themes. The coding process was guided by "comparative analysis" principles (Strauss & Corbin, 1998), which include assessing and comparing data from various individuals to form emergent categories and sub-categories. These categories are presented below alongside the quantitative findings, noting the connections and interactions between them. In order to reinforce the data's reliability, analysis was conducted by the research assistant, while the role of the author was to critically test the categories that emerged from the data analysis (Marshall & Rossman, 2016). The goal was to clarify the subjective perceptions of the respondents and their images of their teaching experiences without any pretensions concerning the clarification of objective reality.

The combination of quantitative and qualitative data provided interesting insights and a complete picture of the perceptions of teachers who employ online teaching during the COVID-19 crisis.

4 Results

4.1 Quantitative Data Analysis

The first research question referred to the factors influencing teachers' perceptions of success in online teaching. To examine the contribution of each factor to the teachers' perceptions, descriptive statistics are presented for selected research variables and demographic variables, along with the results of Pearson correlations between these variables.

As shown in Table 1, which describes the participants' background variables, synchronous learning was found to be positively correlated with success in online teaching, but asynchronous learning was not. Additionally, the school students' socioeconomic status was found to be significantly and positively related to success in online teaching. Teacher personality variables, such as technological self-efficacy, were found to be positively related to perceptions of success in online teaching. However, no correlation was found between resistance to change, as a personality trait, and perceptions of success in online teaching. School-related variables, including communication quality in school, the principal's leadership style, the teachers' emotional commitment to the school, and the extent of the school's innovation, were all found to be positively and significantly related to success in online teaching.

To address the second research question, an analysis was conducted to identify variables that could predict teachers' perceptions of success in online teaching and to determine the contribution of each variable to these perceptions. A hierarchical regression was performed after accounting for the other variables. In the first stage, background variables were entered into the regression; in the second stage, personality variables were included; and in the third stage, school variables were added. The results of the model are shown in Table 2. As indicated in Table 2, each step significantly improved the model, with the third step explaining 31% of the variance in the teachers' perceptions of success in online teaching. In this step, it was found that the variable that best predicted success in online teaching within Arab

Table 1 Descriptive Statistics for the Research Variables and Correlations Between Those Variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
Educational stage[1]	1.88	0.76	-	-	-	-	-	-	-	-	-	-	-	-	-
Age	39.73	7.97	0.02	-	-	-	-	-	-	-	-	-	-	-	-
Gender[2]	0.67	0.47	−0.18*	−0.24**	-	-	-	-	-	-	-	-	-	-	-
Socioeconomic status[3]	2.80	0.66	0.14	−0.03	0.10	-	-	-	-	-	-	-	-	-	-
Synchronous learning	3.41	1.07	−0.01	−0.11	0.06	0.12	-	-	-	-	-	-	-	-	-
Asynchronous learning	3.04	0.97	−0.11	0.00	0.03	0.05	0.07	-	-	-	-	-	-	-	-
Resistance to change	2.50	0.61	−0.07	−0.11	0.03	0.00	−0.15*	0.01	-	-	-	-	-	-	-
Technological self-efficacy	3.79	0.76	0.12	−0.02	0.03	0.04	0.28**	0.08	−0.27**	-	-	-	-	-	-
Communication	3.30	0.69	0.07	0.00	0.05	0.14	0.11	0.08	−0.15*	0.35**	-	-	-	-	-
Transformational leadership	3.74	0.92	0.04	0.05	−0.09	0.15*	0.09	0.17*	−0.17*	0.38**	0.65**	-	-	-	-
Emotional commitment	3.77	0.78	0.10	0.12	0.08	0.13	0.14	−0.01	−0.17*	0.20**	0.42**	0.57**	-	-	-
Innovative climate	3.43	0.79	0.02	0.11	−0.01	0.14*	0.13	0.09	−0.20**	0.29**	0.50**	0.69**	0.48**	-	-
Success in online teaching	3.21	0.66	0.10	0.11	−0.09	0.20**	0.32**	0.05	−0.10	0.27**	0.41**	0.27**	0.16*	0.20**	-

Comment: N = 195; * = $p < .05$; ** = $p < .01$; [1] = Similar coding (1 = elementary school; 2 = Junior High; 3 = High school); [2] = Similar coding (0 = man; 1 = woman); [3] = Socioeconomic status of most students in the school (1 = extremely low; 5 = extremely high).

society was the quality of school communication. This variable was found to be positively and relatively strongly correlated with success in online teaching.

The extent of the use of synchronous teaching also predicted success in online teaching relatively strongly. Neither the principal's leadership style, the teachers' affective commitment to the school, nor the school's innovative climate significantly predicted success in online teaching. The same was true for the personality variables. Background variables, including socioeconomic status, positively and significantly predicted success in online teaching, as did the teacher's age. The older the teacher and the higher the socioeconomic status of the students in their school, the more they perceived that they had succeeded in teaching online.

4.2 Qualitative Data Analysis

To address the third research question, which investigates the influence of various variables on teachers' perceptions of success in online teaching, a triangulation of the different data sources was conducted. This triangulation involved integrating teachers' accounts of the predictors of success obtained from interviews. The teachers who participated in interviews were requested to provide detailed descriptions and explanations of how organizational, teacher-related, and student-related variables either facilitated or hindered their success in online teaching. Their responses are presented below according to the emergent categories they represent.

4.2.1 Students with Low Socioeconomic Status

Aligned with the insights from the quantitative phase of the study regarding the adverse impact of low socioeconomic status on online teaching success, the interviewed teachers articulated two reasons for this finding: (1) students' absence from synchronous lessons and incomplete asynchronous assignments due to a lack of access to computers at home; and (2) parents' insufficient time and expertise to assist their children. All participants teaching in schools with medium-low socioeconomic status (n = 9) perceived the low socioeconomic status of students as detrimentally affecting their own satisfaction and the success of online teaching. This perspective is illustrated through the words of two teachers:

"Online learning relies heavily on Internet connectivity and technological infrastructure. However, more than half of the school's students come from families with low socioeconomic backgrounds, rendering them unable to attend synchronous classes or complete asynchronous assignments." (T15 and T20, elementary and high school).

Hence, elementary school and special education teachers (n = 7), with students hailing from medium-low socioeconomic backgrounds, observed the absence of parental involvement and support in online learning, resulting in an adverse impact on teachers' perceived satisfaction with online teaching.

"Online learning during the COVID-19 crisis significantly differs from regular online learning conditions. It necessitates active parental involvement, which unfortunately isn't feasible for all parents, especially those with low socioeconomic status. Communication with students mainly occurs through messages or materials sent to parents via platforms like WhatsApp, but even this approach isn't always successful." (T2, elementary school).

Table 2 Hierarchical Regression for Predicting Success in Online Teaching

Variable	*B*	SE	β	*F*	F_{change}	R^2
First step – background variables						
Educational stage [1]	0.06	0.06	0.07			
Age	0.01	0.01	0.15*			
Gender[2]	-0.10	0.10	−0.07			
Socioeconomic status[3]	0.17	0.07	0.17*			
Synchronous learning	0.20	0.04	0.31**			
Asynchronous learning	0.03	0.05	0.04			
First step summation				5.94 (6,181)**		0.17**
First step – personality variables						
First step – background variables						
Educational stage[1]	0.03	0.06	0.04			
Age	0.01	0.01	0.15*			
Gender[2]	-0.12	0.10	−0.09			
Socioeconomic status[3]	0.18	0.07	0.18*			
Synchronous learning	0.17	0.04	0.27**			
Asynchronous learning	0.02	0.05	0.02			
Resistance to change	0.00	0.08	0.00			
Technological self-efficacy	0.17	0.07	0.19**			
Second				5.51 (8,179)**	3.69 (2,179)*	0.20**
Second step – background variables						
Educational stage[1]	0.02	0.06	0.03			
Age	0.01	0.01	0.15*			
Gender[2]	-0.14	0.10	−0.10			
Socioeconomic status[3]	0.15	0.07	0.15*			
Synchronous learning	0.18	0.04	0.28**			
Asynchronous learning	0.00	0.05	0.00			
Resistance to change	0.01	0.07	0.01			
Technological self-efficacy	0.08	0.07	0.09			
communication	0.38	0.08	0.39**			
Transformational leadership	0.01	0.08	0.02			
Affective commitment	-0.34	0.07	−0.04			
Innovation	-0.08	0.08	−0.09			
Third step summation				6.48 (12,175)**	6.96 (4,175)**	0.31**

Comment: N = 195; * = $p < .05$; ** = $p < .01$; [1] = Similar coding (1 = elementary school; 2 = Junior High; 3 = High school); [2] = Similar coding (0 = man; 1 = woman); [3] = Socioeconomic status of most students in the school (1 = extremely low; 5 = extremely high).

4.2.2 Synchronous and Asynchronous Teaching

The interview data reinforced the conclusions derived from the quantitative analysis concerning the positive correlation between synchronous teaching and teachers' satisfaction with online instruction. All interviewees (n = 20) underscored the efficacy of synchronous teaching when contrasted with asynchronous methods. Their testimonies highlighted two primary reasons for this preference. First, synchronous teaching via platforms like Zoom

allows teachers to retain the familiar face-to-face instructional style, fostering interaction with students. Second, the learning style of Arab students often lacks the self-directed learning skills necessary for asynchronous approaches. One teacher articulated this viewpoint:

"In synchronous teaching, I can effectively deliver the required content, much like in a traditional classroom setting. Conversely, in asynchronous lessons that depend on independent learning, a majority of students struggle without my guidance." (T18, junior high school).

Another teacher added a supplementary rationale for this inclination:

"Synchronous teaching permits me to visually engage with my students and inquire about their well-being, and this interactive dimension holds significance for both students and me. On the contrary, asynchronous lessons lack this vital interaction." (T5, junior high school).

Most interviewees also noted that the proportion of students successfully completing asynchronous assignments is relatively low. An educator elucidated this challenge:

"Given that certain students lack support and assistance in the realm of online learning, they encounter difficulties in fulfilling assignments. While some manage to submit assignments, they express difficulties in comprehending requirements without my guidance." (T13, junior high school).

4.2.3 Organizational Culture: Quality of Communications and Information Dissemination

The feedback from the teachers (n = 20) regarding the impact of organizational factors on their perception of success in online instruction aligns with the quantitative findings that underscore the significance of digital communication and clear information transmission during the COVID-19 pandemic. The participants revealed that transitioning from in-person to digital communication was not without challenges and highlighted several roles of digital communication. Specifically, digital communication emerged as pivotal in conveying updates and information lucidly, encompassing both content and method of delivery. One teacher articulated this struggle:

"One of the challenges pertains to understanding school communications. We receive numerous messages, yet deciphering our exact responsibilities proves challenging." (T8, junior high school).

Several participants (n = 15) emphasized that digital communication played a crucial role in facilitating interaction between school leadership and staff, subsequently influencing satisfaction with online teaching. An elementary school teacher (T10) affirmed:

"To excel in online teaching, I require unambiguous directives from the school principal. This encompasses specifics such as which synchronous lessons to conduct, addressing non-participating students, and determining camera usage policies."

Consequently, digital communication emerged as a bridge between teachers and school management, ensuring continuity in school operations. Most interviewees (n = 17) reported that regular activities, including staff meetings, transpired via Zoom, and involvement in decision-making, updates, and support further augmented satisfaction with online teaching. An elementary school teacher (T15) remarked:

"To address student absenteeism, it's imperative to possess well-defined guidelines from the school principal and coordinators. Consequently, regular interaction with management,

coordinators, and fellow educators during this period ensured we remained informed and supported."

Subsequently, teachers (n = 10) acknowledged that digital communication played a pivotal role in fostering their satisfaction and success. This was achieved by fostering a connection between supportive school leadership and enhanced emotional commitment during COVID-19. A junior high school teacher (T8) elaborated:

"The school management conscientiously relayed pertinent information and updates related to online learning. The principal and administrative staff consistently offered guidance, encouragement, and support. For instance, the principal regularly reached out to teachers, inquiring about their well-being, which significantly bolstered teachers' sense of belonging and success in online teaching."

Moreover, participants (n = 18) highlighted how digital communication improved their ICT professional development, consequently influencing satisfaction with their progress in online instruction. An elementary school teacher (T16) attested:

"Given the frequent shifts in guidelines for online teaching, receiving guidance and follow-ups from the principal and colleagues assumed significance. The professional development opportunities I encountered significantly aided my adaptation to online teaching."

5 Discussion

This study examined the school-related, teacher-related, and student-related variables that affected Arab teachers' perceptions of success in online teaching during the COVID-19 pandemic. The research results reaffirmed the factors identified by Bolliger and Wasilik (2009) as potential factors affecting teachers' perceptions in online learning environments, specifically those relating to students, teachers, and the school as an organization. The results also confirmed the research argument that the sociocultural infrastructure of their environment influenced Arab teachers' perceived success in online teaching. In response to the first research question concerning the factors that affect teachers' perceived success in online teaching in the Arab educational system during the COVID-19 crisis, the findings indicated a positive correlation between synchronous learning and teachers' satisfaction with online teaching. Additionally, students' socioeconomic status positively correlated with teachers' perceived success in online teaching. The research findings also indicate a positive correlation between personality variables, technological self-efficacy, and teachers' perceived success in online teaching. Regarding the school-related variables, the quality of school communications, the principal's leadership style, the teachers' affective commitment to the school, and the extent of the school's innovation all positively correlated with teachers' perceived success in online teaching.

The analysis of the findings of the present research leads to several insights. In response to the second research question concerning factors that predict teachers' perceived success, the results indicated that the best predictors of Arab teachers' success in online teaching were the quality of school communications and the extent to which synchronous teaching was used. Regarding the background variables, students' socioeconomic status positively and significantly predicted teachers' perceptions of success in online teaching, particularly when teachers were older. Teachers used synchronous teaching more, and their students

came from strong socioeconomic backgrounds, leading to more robust perceptions of their success in teaching online.

First, the findings of the present research are compatible with various studies in Israel and other countries during the time of the COVID-19 crisis, which indicated a correlation between teachers' perceptions of success in online teaching and students' socioeconomic status (Blundell et al., 2020; Masry-Herzallah & Stavissky, 2021a; Sosu et al., 2021). Arab society is characterized by low socioeconomic status, inadequate infrastructure, and limited resources. Having a low socioeconomic status during the COVID-19 pandemic was associated with a lack of necessary technological equipment and technical problems. This form of inequality created a digital divide between Arab and Jewish society, impacting the technological proficiency of students and teachers and the quality of their digital communication during the COVID-19 crisis (State Comptroller Report, 2021).

The qualitative findings explained the effect of students' low socioeconomic status on their involvement in online learning due to an absence of required digital skills and the unavailability or insufficiency of computers in students' homes, which resulted in absences from synchronous lessons and non-completion of asynchronous assignments, in addition to insufficient parental support, particularly for young children. These findings echo the critical approach to technology (Sancho-Gil et al., 2020; Sosu et al., 2021), which emphasizes technology's complexity, the challenges involved in its use, and the possible negative consequences for low socioeconomic populations. This situation intensifies and broadens the inequality between students in school and between the Arab and Jewish educational systems in Israel, especially in the post-pandemic period. Consequently, there is an ever more urgent need to prevent these inequality gaps from widening even further, particularly since this applies to a whole generation of students learning in the Arab educational system.

Second, the findings emphasize the importance of an effective organizational culture to successfully promote online teaching. This culture depends on effective digital communication. The transition from face-to-face to digital communication (Online learning) occurred suddenly in Arab schools and almost without preparation following the outbreak of the pandemic. Online learning management was characterized by various new routines involving high ambiguity and uncertainty (Panisoara et al., 2020). Managing learning from afar under conditions very different from traditional classroom teaching is challenging. Delivering information and knowledge effectively, transparently, and clearly is essential for all those involved in student learning. Digital communication of this kind is affected by the school's organizational structure and flexibility, as well as its ability to take risks, the manner and timing of its response to these changes, and the transfer of information between the organization's stakeholders, which in turn affects teachers' perceptions of success in online teaching (Masry-Herzallah & Stavissky, 2021b). The present research findings are compatible with those of Wasilik and Bolliger (2009), who indicated the importance of communication, cooperation, and teamwork in school as necessary conditions for teachers' perceptions of success in online teaching.

When analyzing the overall situation studied here, the incorporation of effective school communication as a predictor of teachers' success in online teaching highlights the distinctiveness of a work culture under a transformative leadership style present in some Arab schools. Conversely, interviewees reported that a leadership style characterized by top-down instruction hindered their ability to practice successful online teaching. These findings align with previous research indicating that Arab schools often exhibit a traditional, collective

organizational culture that typically resists change and hesitates to embrace technological innovation. In the Arab education system, the leadership style is authoritative, with principals seldom allowing teachers to determine school policies and maintaining social distance from teachers (Masry-Herzallah & Arar, 2019). Arab teachers prefer direct and offline communication to digital communication (Blau et al., 2020). These findings correspond with previous studies indicating that online learning and teachers' perceived success in online teaching during the COVID-19 pandemic are more common in organizations managed with a transformational leadership style (Masry-Herzallah & Stavissky, 2021b).

Third, as noted in the Results section, teachers preferred synchronous teaching over asynchronous teaching. A possible explanation for this finding is that the hasty transition to fully online learning without any in-person meetings with students due to the COVID-19 crisis affected teachers' perceptions of success in online teaching. During this period, synchronous teaching constituted an alternative to routine in-person meetings with students. It can be defined as the only alternative that allows teachers to interact with students, enabling them to impart academic knowledge while maintaining a supportive social-educational framework (Schleicher, 2020). The interview findings explain teachers' perceptions of success in synchronous teaching stemming from the fact that synchronous learning through Zoom or any other platform constitutes an alternative to learning in school during the pandemic. This is a kind of remote direct teaching, and the teacher remains the source of knowledge, holding a central role in learning processes (Masry-Herzallah, 2022). This conclusion echoes Bolliger and Wasilik's (2009) conclusion that student participation, attitudes, and class performance affect teachers' perceptions of success concerning the online process. In Arab society, teachers traditionally hold central roles in learning, so their presence is very important for Arab students. Synchronous lessons replace direct teaching since they use a teacher-centered strategy and structured learning process. This appears appropriate for the cultural characteristics of the collectivist Arab society without emphasizing self-development and critical thinking (Amzalag & Masry-Herzallah, 2021; Blau et al., 2020).

The qualitative findings also indicated that asynchronous learning in the educational system during the COVID-19 crisis relies on students' independent learning skills (Masry-Herzallah & Stavissky, 2021a; Onyema et al., 2020). Findings indicated Arab students often lack these skills. These findings align with the State Comptroller and Ombudsman's report (2021), noting Arab students' and adults' lack of 21st-century skills, particularly independent learning, information management, and technological and digital literacy. The research indicates Arab schools need to develop 21st-century skills in students to prepare them for success in their future social, personal, and professional lives. Achieving this requires knowledge and skills not always available for teachers transitioning from adapting technology to becoming transformational agents.

Fourth, the findings indicate a correlation between teacher age and satisfaction with online teaching. In other words, older teachers with more experience were more satisfied with online teaching than younger, less experienced teachers. The Talis 2018 report (OECD, 2020a) helps explain this, indicating teachers with more experience are more competent at integrating digital communications into lessons in Israel. Teachers with more teaching experience have higher sense of self-efficacy and thus perceive greater success in online teaching during the exceptional COVID-19 crisis.

5.1 Limitations and Future Research

This study has several limitations. First, a primary limitation is the absence of prior research on this specific topic, necessitating the development of a new framework and limiting comparisons to previous findings. Second, participants were recruited through convenience and snowball sampling rather than random selection from the target population. Future research should employ random selection to enhance generalizability and diversity. Third, this research occurred during the initial COVID-19 wave and focused solely on Arab public-school teachers. Including the perspectives of other stakeholders affected by the emergency transition to online learning, like parents, students, principals, private Arab schools, and Jewish schools, would provide a more complete picture. Fourth, future research should explore more variables with the potential to promote effective online teaching, like gender, stage, leadership, and sector. Examining interactions between variables is crucial for improving technology integration. Although older teachers perceived high success, direct age comparisons were not conducted. Culture's influence was not specifically investigated, although school culture and leadership style were. Examining cultural dimensions would enrich understanding. Teachers' prior online experience and TPACK abilities were also not explored, although both likely influence perceived success. Additionally, questionnaires were designed pre-crisis. Developing and validating crisis-specific assessments would benefit future studies. Finally, the researcher's role may have introduced bias. Using an assistant for interviews and mixed methods for triangulation aimed to increase validity and minimize biases.

6 Conclusions and Implications

The research combined quantitative and qualitative tools to examine online teaching characteristics and factors affecting Arab teachers' perceptions of success during the COVID-19 crisis. The findings shed light on online learning's uniqueness in the Arab system and have implications for policy and practice.

Overall, Arab educators' reaction to the sudden transition to remote teaching depended on sociocultural and political factors like principals' digital promotion, support system availability, parental involvement, increased synchronous teaching, and teacher age. The implications are significant for education policy and practice during COVID-19 and future crises.

The lack of prior research on factors affecting Arab teachers' online success means this study provides timely insights into their functioning during COVID-19. It contributes to relevant literature on contextual factors' influence on online teaching success perceptions during COVID-19. The findings can inform post-pandemic education policy design that is ecologically and culturally appropriate.

This appears to be the first study examining correlations between teacher, student, and school factors and political, socioeconomic, social, and cultural contextual factors influencing online teaching success perceptions during a crisis. It expands knowledge of diverse students' social and cultural online teaching challenges, particularly minority groups in multicultural states.

The insights into online learning during crises in a specific ethnic minority may inform other minority communities. The findings have implications for multicultural educators and policymakers. This initial study highlights the need to build culture-sensitive online learning based on teacher perceptions to improve effectiveness.

Extensive research has raised concerns about COVID-19 exacerbating student inequalities (Betthäuser et al., 2022; OECD, 2020b). Participating teachers pointed to students' socioeconomic status affecting online success. This underscores the need for policies supporting Arab children and families, especially those from lower socioeconomic backgrounds, to address pandemic-related gaps.

The findings suggest effective organizational communication is crucial for teachers' perceived online teaching success during times of change and uncertainty. Therefore, training principals and supervisors in effective communication is vital for integrating online teaching. Principals should regularly assess teacher needs and provide additional online teaching training. Leveraging technology teachers and ICT coordinator expertise, we can offer colleagues ongoing technical support. Creating teacher WhatsApp groups can facilitate mutual support in addressing technical challenges and sharing resources. Establishing professional learning communities enables teachers to observe and discuss online practices, foster digital school communication, encourage risk-taking, explore innovations, and better prepare for future online teaching.

Policymakers should prioritize developing principals' transformational leadership, including by selecting candidates with these skills. Although unique, online methods can be adapted for personalized face-to-face teaching.

The research can inform decision-maker preparation, especially for principals, to develop staff online teaching abilities. For example, the findings could help the Ministry of Education design online courses that enable student success in regular and emergency online education. They can inform institutions planning teacher professional development focused on improving technological, ICT, synchronous, asynchronous, and flipped classroom skills with cultural adaptation. Training in innovative pedagogy and 21st-century skills is also important to prepare students for future learning challenges, enhance independent learning, and gradually increase their educational responsibility.

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No.

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