





Towards a Conceptual Framework to Mitigate Dropout Risk in Open and Distance Learning (ODL) in Higher Education Institutions



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Abstract The problem of student attrition or better known as a dropout from completing courses in tertiary education institutions become more alarming, especially in online learning during the COVID-19 pandemic period. Current research has stressed that one of the critical factors that contribute to students' attrition is academic difficulties. Students were found to be poorly prepared for learning activities, lack self-regulation skills, weak academic knowledge and specific study skills that could impede progress towards learning goals. However, the reason behind this phenomenon is still unexplained and the evidence in the Open and Distance Learning (ODL) context is still scarce. Therefore, such difficulties signify the needed to understand in-depth students' experiences and motivations to allow for a better understanding of the issues and challenges faced by the students particularly in ODL learning and delivery. In the nutshell, this study is expected to provide a robust theoretical framework to mitigate dropout risk as well as to offer practical guidelines to assist students learning throughout the completion of university courses.

Keywords Student attrition · Higher education · Open and distance learning

1 Introduction

The quality of education is increasingly seen by the Malaysian government as a major contributor to national wealth and economic development. The Sustainable Development Goals (SDG 4) and Twelfth Malaysia Plan, 2021–2025 (RMK-12), for instance, include quality of education as one of the goals of the national agenda, as

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such, it is to ensure inclusive and equitable quality education and promotes lifelong learning opportunities that are relevant for the development of citizen and fulfils the aspirations of the nation. However, in an era of the COVID-19 crisis, there is increasing pressure for Higher Education institutions to undergo transformation with constrained resources. The challenges not only limited to educational outcomes such as employability and lifelong learning, but also to improve student support and experience in education.

Likewise, the COVID-19 pandemic has a profound impact on students social and academic development. Covid-cohorts students suffered from many restrictions that could link to attrition risk or academic failure (Allam et al. 2020). In this respect, attrition refers to the students who are voluntary withdrawal from a course, discontinue their academic study, or fail to complete an enrolled program due to various reasons (Adusei-asante and Doh 2016; Aydin et al. 2019; Bean and Metzner 1985; Syahira and Tarmizi 2019). Over the past few decades, a considerable amount of research has been devoted to the study of student attrition in Malaysia. In fact, until now the topic continues to receive significant attention indicating that student attrition is a crucial issue in the higher education sector. Thus, to address these concerns, education institutions are required to determine the root cause for students to dropout of the system (Aydin et al. 2019).

Fundamentally, we argue that the existing student attrition framework in ODL is still in the immature stage. There is a need for a detailed theoretical framework that could guide future development efforts in Malaysia higher education context. Hence, this study aims to explore the issues and challenges faced by the students throughout the entire semester as well as understanding the underlying reasons behind behavioural patterns and their influence on learning performance. As such, the results could provide a foundation before proceeding with the development of a comprehensive framework to mitigate the dropout risk in the ODL setting. In the remainder of this paper, we provide a brief overview of open and distance learning in tertiary education, the existing student attrition framework in Malaysia context, methodology, limitations and future work, implications, then finally conclude this work.

2 Background

To date, enrolment in higher education has shown explosive growth across the years. According to Malaysia Educational Statistics, in 2020, 567,625 students were enrolled in public higher institutions and it is forecast to rise to 764,000 students by 2025, or 2.6 per cent per year on average (Malaysia 2015). Hence, the unprecedented demand and a great diversification in the tertiary education sector have increased the need for digital transformation and pedagogical innovations that may promote active learning and improve academic success. However, the recent COVID-19 pandemic has changed the global higher education landscape drastically. Universities have transformed the way of teaching and learning from face-to-face to online protocols. The Universiti Teknologi MARA has no exception, the use of technology has brought

forward new pedagogical models such as Open and Distance Learning (ODL) as a viable solution to support students' learning, in which, ODL introduces flexible educational opportunities that offer students the flexibility of studying from anywhere and at any time over the Internet and through other communication means (i.e., phone call, text message).

Nevertheless, shifting the constraints of a conventional lesson structure and promoting an independent learning mode can be a "double-edged sword" for students. On the one hand, it offers immense opportunities to enrich traditional education by maximizing learning outside the classroom; but, it can also induce a great challenge to the pedagogical implementation of online education. ODL demands students to be highly autonomous and responsible to make their own learning decisions. As such, students need to know how to manage their study throughout the designated learning periods in order to complete learning tasks and thus achieve the associated learning goals. Hence, every universities have a strong aim to provide students with a conducive learning experience that could promote prompt course completion and graduation in higher education institutions.

However, the aim could not reach every student where some of them might fail to complete their study due to many reasons. Student attrition or voluntary withdrawal from academic programmes continues to be a significant challenge for higher education institutions. In a formal educational context, attrition must have detrimental effects for both students and universities, if unaddressed, could have a diminishing effect on institutional performance and student success. For students, fail to earn an academic qualification will impede their efforts to improve their socioeconomic status, while education institutions are being compromised with a bad reputation and major financial threats due to loss of income through tuition fees and charges.

Therefore, such difficulties signify the needed to understand in-depth students' experiences to allow for a better understanding of the issues and challenges faced by the students mainly in ODL learning and delivery. The proposed study is designed with twofold objectives. First, to explore students' experience in ODL and factors contributing to dropout risk. Secondly, to develop a framework to mitigate dropout risk among Universiti Teknologi MARA students. The result of this proposed research is expected to be a robust framework to mitigate dropout risk in an ODL setting. By this expected result, the study potentially has important implications for research and practice in terms of informing educators and students on the effective open and distance learning behaviours well as informing future interventions to support students in the ODL environment.

2.1 Existing Student Attrition Framework in Malaysia Context

In Malaysia, a considerable amount of research has been devoted to the study of tertiary student attrition (Allam et al. 2020; Had Sabtu et al. 2016; Raghavan 2014;

Sangodiah et al. 2015; Syahira and Tarmizi 2019). However, dropout risk particularly in open and distance learning environment has not been fully understood considering factors that lead to attrition relatively complex and studies in ODL context is still scarce. Prior research on student attrition in ODL setting by Raghavan (2014) has identified that institutional barriers are the root cause of student dropout in higher education programmes. These include low quality of support services, the ineffectiveness of learning delivery and poor assessment practices. Besides that, students inability to cope with the academic demands is another significant factor attributed to this problem.

Similarly, through revising the existing student attrition frameworks, (Had Sabtu et al. 2016) described apparently consistent factors that influence the course dropout, like institutional factors (i.e., academic support services, staff attitude, institution level), and student background characteristics (i.e., previous academic achievement, family background). In addition to that, (Had Sabtu et al. 2016) included the environmental factors (i.e., financial support, peer pressure) as an additional key aspect in this regard (refer to Fig. 1).

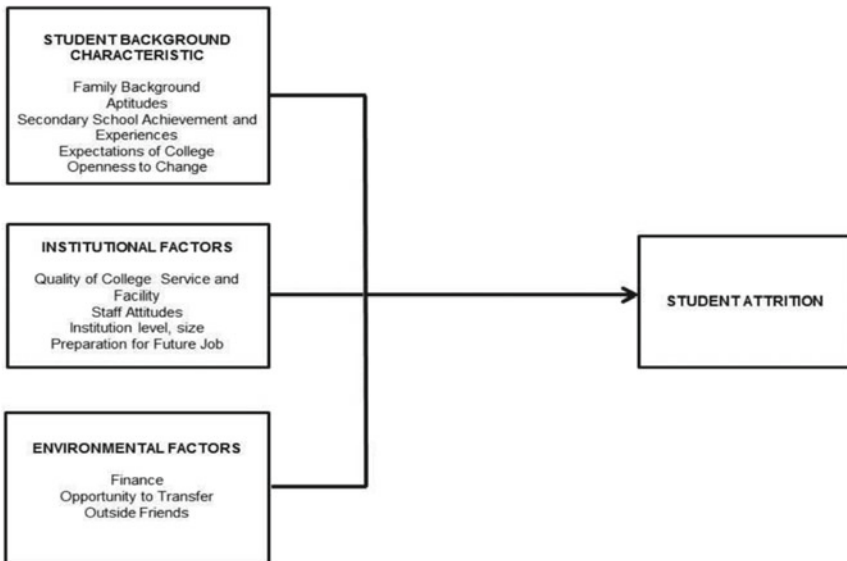


Fig. 1 The conceptual theoretical framework of student attrition by Had Sabtu et al. (2016)

On the other hand, (Syahira and Tarmizi 2019) reported that sociodemographic (i.e., the location from home and university, family education, previous academic achievement), social (i.e., physical and social activities), psychological (i.e., personal traits and learning satisfaction), and enrolment (i.e., academic score, credits hours, study mode) are the four key factors that may possibly have an effect on student attrition. In sum, most of these research reported that socio-economic (i.e., family income, parents' education), academic difficulties (i.e., academic score, lack self-regulation skills, weak academic knowledge or specific study skills), personal difficulties (i.e., poor self-esteem, dissatisfactions, felt isolated) and geographical location (i.e., the location from student's home and university) are the common factors that often led to student attrition.

Recent research, however, revealed that a majority of the students' population struggle to attain an appropriate level of self-regulation (i.e., weak academic knowledge or specific study skills and lower level of motivation) (Allam et al. 2020; Carpenter et al. 2020). As such, students are often unprepared, struggling with the regulation of their time and effort, especially during online preparation activities (Dhawan 2020; Heinerichs et al. 2016) that often lead to a higher risk of attrition (Lee and Choi 2011; Sangodiah et al. 2015; Syahira and Tarmizi 2019). Although preceding research emphasized the student personal issues and academic concerns, yet, the reasons and motivations behind student's withdrawal or discontinuation of study somewhat remain superficial (Raghavan 2014). Therefore, a thorough investigation is urgently needed to understand in-depth students' regulation and motivation, to allow for a better understanding of students behaviours and factors contributing to the dropout risk particularly in open and distance learning environments. Meanwhile, such previous studies may provide foundations of immature framework and this proposed research is an effort to bridge such gap.

3 Methodology

The study aims to develop a framework to mitigate dropout risk among students in Universiti Teknologi MARA. The study will involve four main phases: (i) preliminary study, (ii) data collection, (iii) data analysis, and (iv) framework design.

- (i) Preliminary study—A comprehensive literature review will be conducted in reviewing and analyzing the current state-of-the-art of research on student attrition in tertiary education institutions. This includes literature related to the existing theories and framework as well as the issue of attrition due to ODL learning and delivery.
- (ii) Data collection—To address research objective one, the semi-structured interview will be carried out involving 20 university students who have experienced open and distance learning during the COVID-19 pandemic years. In addition, this study also will rely on student performance data. The aim of the interviews is to understand the issues and challenges faced by the students throughout

the entire semester as well as understanding the underlying reasons behind behavioural patterns and their influence on learning performance.

Then, the students will complete the Change Enrolment Survey (McRoberts and Miller 2015). This survey will be used to examine attrition rates in university programs. The purpose of the questionnaire is to explore factors influencing students' decisions to leave university programs prior to completing their studies. This survey consists of three sections, namely (i) wellness considerations, (ii) financial considerations, and (iii) college experience considerations. Specifically, the college experience considerations consist of ten items specifically to measure academic interest like "I have lost interest in the subject matter" and "I do not feel academically prepared for this program".

- (iii) Data analysis—All the interviews will be fully transcribed and analysed. A thematic analysis will be used to analyse those transcripts by using the Nvivo software. Meanwhile, survey data will be analysed using R-programming and a network analytic approach based on Epistemic Network Analysis (Shaffer 2018) as it allows for identifying and quantifying connections among elements in coded data and representing them in dynamic network models.
- (iv) Framework design—The framework will integrate findings from both semi-structured interview and survey results. The framework building will combine all of this information into a dynamic model. This phase is dedicated to addressing research objective two—to develop a robust framework to mitigate dropout risk among Universiti Teknologi MARA students.

4 Limitations and Future Work

This work has several limitations. First, this study will include a sample consisted primarily of students from Universiti Teknologi MARA. The results can be limited and could not be generalized to the higher education context as a whole. Thus, larger samples from various tertiary education institutions should be planned for future efforts.

Second, the COVID-19 pandemic restrictions could slow down the progress of data collection (i.e., interview and survey), which likely to affect the research timeline. In case of a prolonged course of pandemic COVID-19, the interviews will be arranged and conducted via online platforms, such as Google Meet or Zoom meetings. This is within our future work plans.

5 Conclusions and Implications

Taken together, this study proposes to explore issues and challenges in open and distance learning as the foundation for the establishment of an empirical-based

framework to mitigate dropout risk among Universiti Teknologi MARA students. Notably, this study is expected to provide as follows:

- (i) Empirical evidence—This study will contribute to the literature by providing empirical evidence on the issues and challenges faced by the Universiti Teknologi MARA students in open and distance learning during the COVID-19 pandemic period.
- (ii) Theoretical contribution—This study will contribute to the refinement of the existing student attrition framework. The theoretical framework provides a step toward a better understanding of the critical factors contributing to dropout risk, particularly in the ODL environment.
- (iii) Practical contribution—This study could offer practical guidelines to assist students learning throughout the completion of university courses. In addition, it could advance educators understanding of students learning as well as informing future interventions to support students in ODL.

Overall, the study potentially has important implications for research and practice in terms of informing educators and students on the effective open and distance learning behaviours as well as an understanding of students' motivation that are predictive of their academic outcomes and persistence in their studies.

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References

- Adusei-asante, K., Doh, D.: Students' attrition and retention in higher education: a conceptual discussion. In: STARS Conference Proceedings 29 June–2 July 2016 Pan Pacific Perth (June 2016)
- Allam, S.N.S., Hassan, M.S., Mohideen, R.S., Ramlan, A.F., Kamal, R.M.: Online distance learning readiness during covid-19 outbreak among undergraduate students. *Int. J. Acad. Res. Bus. Soc. Sci.* **10**(5), 642–657 (2020). <https://doi.org/10.6007/ijarbss/v10-i5/7236>
- Aydin, S., Öztürk, A., Büyükköse, G.T., Er, F., Sönmez, H.: An investigation of drop-out in open and distance education. *Educ. Sci. Theory Pract.* **19**(2), 40–57 (2019). <https://doi.org/10.12738/estp.2019.2.003>
- Bean, J.P., Metzner, B.S.: A conceptual model of nontraditional undergraduate student attrition. *Rev. Educ. Res.* **55**(4), 485–540 (1985). <https://doi.org/10.3102/00346543055004485>
- Carpenter, S.K., Witherby, A.E., Tauber, S.K.: On students' (mis) judgments of learning and teaching effectiveness. *J. Appl. Res. Mem. Cogn.* **9**(2), 137–151 (2020)
- Dhawan, S.: Online learning: a panacea in the time of COVID-19 crisis. *J. Educ. Technol. Syst.* **49**(1), 5–22 (2020). <https://doi.org/10.1177/0047239520934018>
- Had Sabtu, H., Mohd Noor, W.S.W., Mohd Isa, M.F.: Revisiting student attrition studies: a new conceptual perspective. *Sains Humanika* **8**(4–2), 83–89 (2016). <https://doi.org/10.11113/sh.v8n4-2.1065>

- Heinerichs, S., Pazzaglia, G., Gilboy, M.B.: Using flipped classroom components in blended courses to maximize student learning using flipped classroom components in blended courses to maximize student. *Learning* **11**(1), 54–57 (2016). <https://doi.org/10.4085/110154>
- Lee, Y., Choi, J.: A review of online course dropout research: implications for practice and future research. *Educ. Technol. Res. Dev.* **59**(5), 593–618 (2011)
- Malaysia, M.O.E.: Malaysia education blueprint 2015–2025 (Higher Education). *Minist. Educ. Malays.* **2025**, 40 (2015)
- McRoberts, T., Miller, T.: Instrument development for examining student attrition. *J. Acad. Adm. High. Educ.* **11**(2), 43–53 (2015)
- Raghavan, S.: Attrition in odl: a macro perspective for reducing non-completion rate among ill learners. **4**, 416–430 (2014)
- Sangodiah, A., Beleya, P., Muniandy, M., Heng, L.E., Ramendran Spr, C.: Minimizing student attrition in higher learning institutions in Malaysia using support vector machine. *J. Theor. Appl. Inf. Technol.* **71**(3), 377–385 (2015)
- Shaffer, D.W.: Epistemic network analysis: understanding learning by using big data for thick description. *Int. Handb. Learn. Sci.* 520–531 (2018). <https://doi.org/10.4324/9781315617572>
- Syahira, S., Tarmizi, A.: A review on student attrition in higher education using big data analytics and data mining techniques (August), pp. 1–14 (2019). <https://doi.org/10.5815/ijmecs.2019.08.01>