

EVALUATING THE EFFECTIVENESS OF ONLINE DISTANCE LEARNING FOR QUALITY EDUCATION IN MALAYSIA'S LEARNING ENVIRONMENTS

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ABSTRACT

Objectives: The paper aims to examine the performance and effectiveness of Online Distance Learning (ODL) in Malaysia. Driven by advancements in technology and access to the internet, flexible education has gained significant traction worldwide.

Methods: By comparing ODL with traditional learning methods, this study seeks to identify the strengths and weaknesses of ODL and provide recommendations for optimizing its implementation. Through a review of existing literature and case studies, this analysis aims to provide insights into ODL effectiveness and suggest optimization strategies. Numerous studies have been conducted to identify Malaysian acceptance of online education.

Results: However, this study differs as it will assess online education performance. Service quality by system providers and academic quality are the main pillars of online education. Our analysis found that both have significant relationships with continuation in online education.

Conclusion: The findings suggest that while academic quality and system performance are critical factors influencing student retention, service value does not directly affect retention despite its significant relationship with the system. These insights provide valuable implications for educators and service providers aiming to enhance student engagement and retention in synchronous online learning environments.

Keywords: online education, quality education, student engagement, retention, SDG 4, sustainable development goals (SDG).

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1 INTRODUCTION

In Malaysia, open and distance learning (ODL) has become increasingly popular as a substitute educational approach that offers flexible learning options to students from various backgrounds. The approach is designed to meet the needs of many types of learners, such as those who cannot attend regular face-to-face classes, working professionals, and students from remote areas. The COVID-19 pandemic accelerated the adoption of digital tools, leading more educational institutions to implement online teaching strategies. The learning process has improved through the integration of online assessment platforms, video-conferencing tools, and learning management systems (LMS). The approach is constructive for learners who are working adults, live in remote areas, or have other commitments that prevent them from attending traditional classrooms (Zainal *et al.*, 2020). This oversight is significant because teachers' perspectives have a substantial impact on their teaching methods, classroom dynamics, and student outcomes. This study aims to illuminate the potential and challenges that service providers face in this evolving educational environment by examining how they perceive and manage student engagement during synchronous online sessions.

However, another crucial concern is ensuring ODL programs maintain high standards. According to Zainal *et al.* (2020), the rapid growth of online learning has raised questions about the suitability of instructional design, evaluation methods, and the overall educational experience. Institutions must establish robust quality-assurance frameworks to maintain academic standards and ensure that ODL courses meet the same criteria as traditional face-to-face programs. Meanwhile, Mok (2019) suggests that institutions need to develop innovative teaching methods to promote a sense of community and keep students actively engaged in their education. Troubleshooting, feelings of isolation, distracting environments, and time management are among the challenges of online learning compared to face-to-face instruction (Lattea, 2023). Additionally, Ayob *et al.* (2022) note that Malaysia's transition from a manufacturing-based economy to a digital one presents both opportunities and challenges. Furthermore, understanding these perceptions can contribute to

developing effective teaching practices and support systems that enhance student engagement in online learning contexts. This study seeks to bridge the existing research gap by examining educators' experiences and viewpoints, thereby providing valuable insights into the intricacies of engagement in synchronous online classes. This paper aims to examine the effectiveness of online distance learning environments in Malaysia.

2 LITERATURE REVIEW

The rapid expansion of Open and Distance Learning (ODL) in Malaysia aligns with government policies, particularly the JENDELA initiative. The Jalinan Digital Negara (JENDELA) plan was designed to enhance coverage, quality connectivity, and communication in Malaysia. However, maintaining student engagement in ODL is challenging due to the absence of face-to-face interactions. Fuller *et al.* (2021) also explore effective design for learning, although from a different perspective. Van de Laar *et al.* (2022) conducted research on open courses developed by the Community of Learning for African PhD students (CoLA), specifically aimed at doctoral fellows in Sub-Saharan Africa. Their study focuses on the impact of introducing micro-credentials on motivation, engagement, and achievement. The authors utilize analytics to pinpoint critical moments that influence course completion throughout the learners' journey. Distance learning, arguably the fastest-growing field in education, still has a serious flaw in that students drop out at a higher rate than those in traditional classrooms (Boyle *et al.* 2010).

Maintaining student engagement in Open and Distance Learning (ODL) poses challenges due to the lack of face-to-face interactions. However, the perceptions of educators regarding student engagement in synchronous online classes have been less frequently examined (Toth *et al.*, 2024). Boyle *et al.* (2010) examine the impact of student-student mentoring on retention and engagement in distance education. The study argues that mentoring relationships can enhance the educational experience for distance learners by providing social support and fostering a sense of community. They discuss various mentoring models and highlight the importance of structured programs

that facilitate effective mentor-mentee interactions. The study presents findings from their research, which indicate that student mentoring positively influences retention rates and levels of engagement among distance education participants. The authors conclude that implementing student-student mentoring programs can be an effective strategy for improving student outcomes in distance learning environments.

Castles (2004) notes that some students experience improved engagement due to the stress induced by weekly evaluation tests. However, it is important to recognize that individual students may respond differently to this pressure. Our analysis has highlighted both the potential benefits and drawbacks of implementing quality education. Given that the same individual can be affected by these factors in varying ways, it is essential to focus on the negative aspects identified in the research and develop strategies to mitigate them in future approaches. According to Boud and Falchikov (2007), taking tests frequently might raise cognitive load, which, over time, can cause fatigue and a decline in motivation as the semester progresses. These findings indicate a drop in evaluation test participation, which may be explained by assessment fatigue, which students may suffer as the term draws to a close. Furthermore, as the landscape of education continues to evolve, employers increasingly seek graduates who possess not only degrees but also demonstrable quality education. Emphasizing academic quality is essential to proving that the education system in Malaysia enjoys a strong reputation.

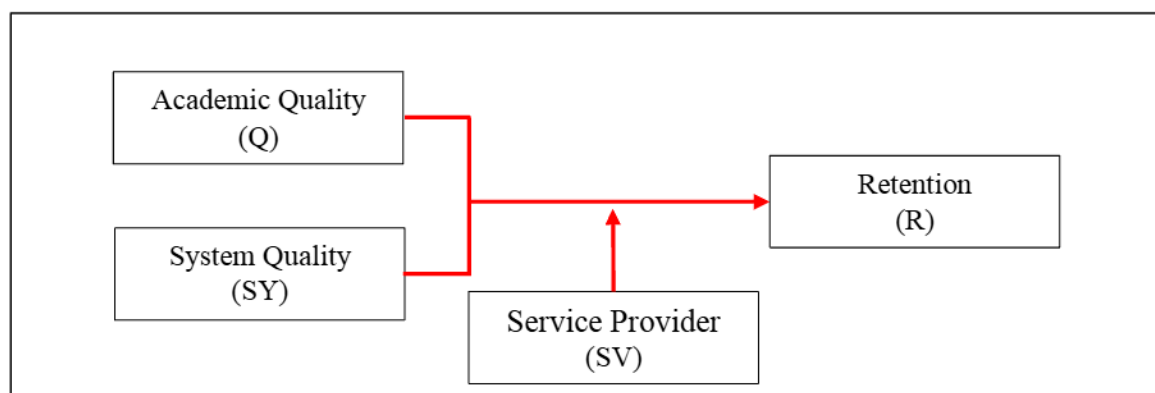
3 METHODOLOGY

This study employs a quantitative research design to explore the effectiveness of Open and Distance Learning (ODL) in Malaysia, providing a comprehensive understanding of the issues and perceptions surrounding ODL. The target population for this research consists of students enrolled in ODL programs across various Malaysian institutions, including Open University Malaysia (OUM) and other universities offering distance learning. A structured online questionnaire was designed to collect quantitative data regarding students' experiences with ODL. The independent variables in this study are

support system information technology, online academic quality, and service provider support for student learning. These indicators were developed from suggested problems for online learning by Lattea (2023), Zainal *et al.* (2020), and Mok (2018). This study employs a quantitative research design to explore the relationships between quality, system, service value, and student retention in educational settings. A cross-sectional survey was conducted to collect data from participants, allowing for the analysis of variables at a single point in time.

Figure 1

Research Framework



Our study is built upon the research framework, which guides the investigation and helps elucidate the connections among critical concepts. As shown in Figure 1, this paradigm investigates how multiple components, including academic quality, student retention, system quality, and service physicality from providers, interact within the Open Distance Learning (ODL) framework. The research framework directs the investigation and illuminates the relationships between essential concepts.

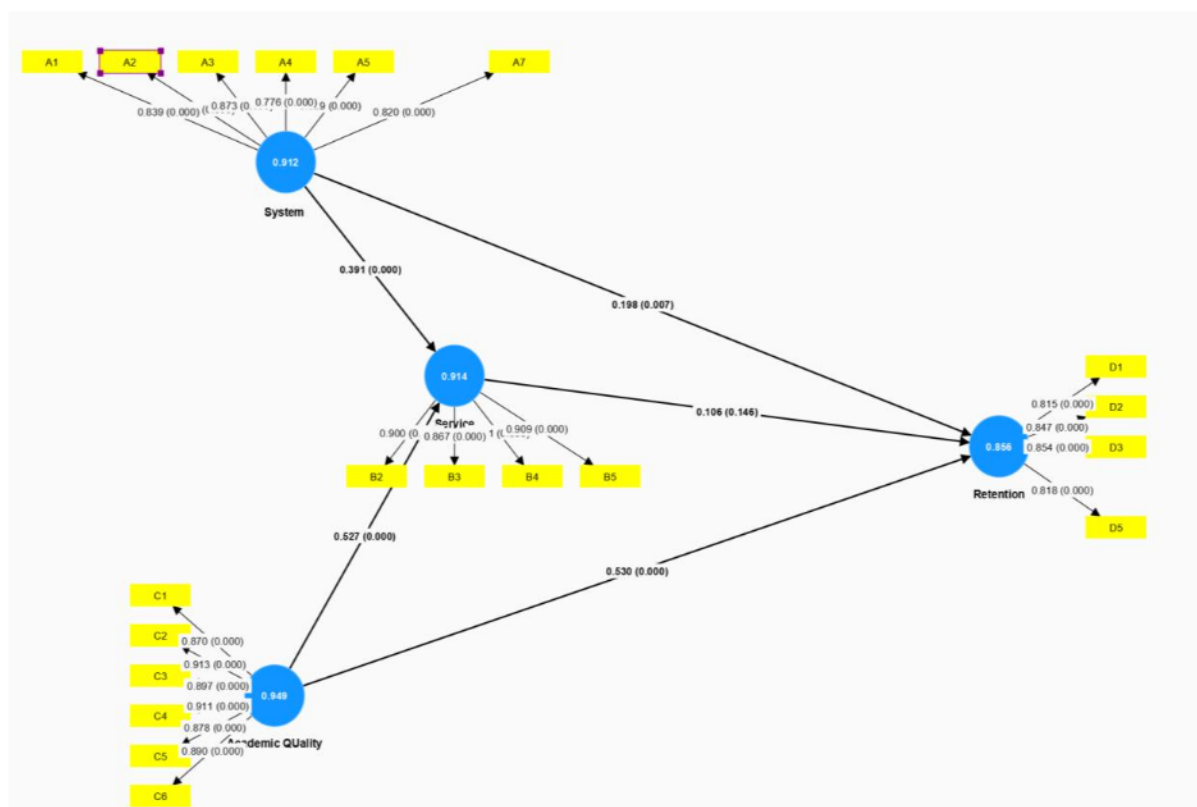
The questionnaire comprised Likert-scale items designed to assess participants' perceptions of each construct. The study sample consisted of 398 participants, who were selected through a stratified random sampling technique to ensure representation across various demographic groups, including age, gender, educational background, and online learning experience. Participants were recruited from diverse educational institutions offering synchronous online courses, ensuring varied perspectives on student engagement and retention.

4 RESULTS AND DISCUSSION

The study aims to determine the latent variables that contribute to the effectiveness of Online Distance Learning, as measured by observed variables. To achieve our research objectives, we used SmartPLS to construct the measurement model. More specifically, the analysis methodology combines both quantitative and qualitative techniques. The procedures for our study using mixed methods are based on sequential explanatory research (Creswell, 2009). In the first phase, we collected and analyzed quantitative data to understand the relationship between the teaching strategy and course completion rates, as well as academic results within the context of ODL. In the second phase, qualitative data was collected and analyzed to gain a deeper understanding of how the key elements of the strategy influenced students' motivation in ODL environments.

Figure 2

Conceptual Model



The study aims to determine the latent variables that contribute to the effectiveness of Online Distance Learning, as measured by observed variables. To achieve our research objectives, we used SmartPLS to construct the measurement model. More specifically, the analysis methodology combines both quantitative and qualitative techniques. The procedures for our study, using mixed methods, are based on sequential explanatory research (Creswell, 2009). In the first phase, we collected and analyzed quantitative data to understand the relationship between the teaching strategy and course completion rates, as well as academic results, within the context of ODL. In the second phase, qualitative data were collected and analyzed to gain a deeper understanding of how the key elements of the strategy influenced students' motivation in ODL environments.

Table 1

Assessment of Structural Model

Hypothesis	Coefficient	Std	t-Values	p-Values	VIF
Q -> R	0.530	0.060	8.800	0.000	3.473
Q -> SV	0.527	0.059	8.861	0.000	2.386
SV -> R	0.106	0.073	1.456	0.146	3.916
SY -> R	0.198	0.073	2.722	0.007	2.984
SY -> SV	0.391	0.060	6.471	0.000	2.386

Table 1 presents the results of a structural equation modeling (SEM) analysis, showing the relationships between different variables. According to Table 1, in the structural model, the results indicated that the majority of hypotheses developed were supported. However, the hypothesis regarding service quality's relationship with retention is not significant. From Table 1, the relationship SV -> R is not statistically significant (p-value = 0.146), meaning there's no strong evidence of an effect of SV on R. Specifically, the effects with significant values were as follows: Q to R ($\beta = 0.53$, t-value = 8.800), Q to SV ($\beta = 0.527$, t-value = 8.861), SY to R ($\beta = 0.198$, t-value = 2.722), and SY to SV ($\beta = 0.391$, t-value = 6.471). The VIF values are acceptable, so multicollinearity is not a concern in this model. VIF (Variance Inflation Factor) tests for multicollinearity. A VIF above 5 is usually concerning, as it suggests multicollinearity between predictor variables (Can and Kara, 2024). All VIF values here are below 5, indicating no significant multicollinearity issues.

Table 2

Mediates effect

No	Relationship	Std Beta	t-value	Confidence Interval		Decision
				LL	UL	
1	Academic -> Retention	0.056	1.438	-0.021	0.133	Not Supported
2	System -> Retention	0.041	1.376	-0.015	0.103	Not Supported

To examine the mediating effect towards retention, our analysis finds that service to customers against academic and system does not have indirect effects. Thus, we conclude that the effects of mediation are statistically not significant, as shown in Table 2. Academic -> Retention means the effect of Academic on Retention through a potential mediator. The standardized beta is 0.056, indicating a small indirect effect of Academic on Retention. The t-value is 1.438, suggesting that the effect is not statistically significant since the t-value is below the typical cutoff. For System against Retention, the standardized beta coefficient is 0.041, with a t-value of 1.376. The confidence interval ranges from -0.015 to 0.103, also crossing zero, indicating non-significance. Thus, System does not have a statistically significant effect on Retention.

LL (Lower Limit) and UL (Upper Limit) represent the lower and upper bounds of the confidence interval for the mediated effect. If the confidence interval includes zero, the mediation effect is not statistically significant. For Academic -> Retention, the confidence interval is -0.021 (LL) to 0.133 (UL), indicating that the interval includes zero, meaning the mediation effect is not significant. Similarly, for System -> Retention, the confidence interval is -0.015 to 0.103, which also includes zero. The conclusion regarding the significance of the mediated effect would typically be stated. In this case, both relationships would likely be marked as not significant due to their t-values and confidence intervals. Studies show that providing robust support systems and peer interaction opportunities can mitigate these challenges for retention and student engagement.

5 CONCLUSION

This study highlights the intricate relationships between quality, system, and service value in the context of student retention and engagement in educational settings. The findings demonstrate that both quality and system significantly contribute to enhancing student retention, indicating that these factors are essential for service providers aiming to foster a supportive and effective learning environment. The positive relationships identified suggest that improvements in the quality of educational offerings and the effective management of service yield can lead to increased student satisfaction and retention rates. However, the lack of a significant direct effect of service value on retention emphasizes the need for further study of how service value interacts with other constructs. It suggests that while service value is important, its influence may be mediated by factors such as quality and system, highlighting the complexity of student engagement dynamics. For educators and service providers, these insights underscore the importance of focusing on enhancing the quality of educational experiences and optimizing systems to maximize retention. As the landscape of education continues to evolve, particularly in synchronous online learning environments, understanding these relationships is critical for developing strategies that effectively engage students and support their success. Future research should aim to explore the underlying mechanisms that link service value to retention and investigate additional variables that may influence these relationships. Educational institutions can then better equip themselves to meet the challenges of modern education and improve outcomes for their students.

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