Preferences for Online Learning Platform Types: Does it Matter to Students' Academic Performance?

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Abstract

This paper examines the relationship between the types of online learning platforms used in class and student performance in Malaysia's public and private higher education institutions during the pandemic. This survey was conducted among 259 students enrolled in public and private higher education institutions in Malaysia. The findings indicate that the online learning platform used does have a statistically significant effect on user satisfaction and student resistance. Additionally, computer self-efficacy has a significant effect on satisfaction and student resistance. Next, motivation is a strong predictor of user satisfaction and student resistance. The environmental interruption was found to be a significant predictor of user satisfaction and also of student resistance. Also, this study discovered that user satisfaction could be used to predict student resistance. Finally, user satisfaction is a strong predictor of a student's academic performance, and student resistance is also a strong predictor of a student's academic performance. The findings shed light on Malaysian students' use of various online learning platforms in public and private higher education institutions. This study is the first to examine the relationship between the type of online class platform used and the academic performance of students in Malaysian public and private higher education institutions.

Keywords: Types of Online Learning Class Platforms, Student Performance, Public And Private Higher Education Institution, Pandemic

Introduction

Throughout the first half of 2020, people worldwide were confronted with an invisible adversary known as COVID-19. This pandemic has compelled most people to alter numerous cultural routines, including personal, organizational, and public practices and daily routines. Numerous countries have implemented drastic policy changes to ensure compliance with their rules and regulations to protect their communities from the pandemic and maintain high productivity rates and results (Stawicki et al., 2020). Across the country, most teachers and students are pleased with the transition to online learning due to the pandemic that has

occurred since universities closed and locked down (Shahzad et al., 2020, Norzaidi et al., al., 2022a). World-renowned universities have begun accrediting instructors online to provide online instruction to their students (Chopra et al., 2019). Simultaneously, faculty and employees learn how to use online learning platforms. Previously, they relied solely on one-on-one instruction. Additionally, the shift to an online format has increased the emphasis on academic performance (Al-Kumaim et al., 2021).

A pandemic outbreak such as COVID-19 makes it challenging to regulate and change how people learn online without encountering numerous risks and obstacles. Recent studies have revealed that university staff and students face numerous barriers when learning via online platforms (Bingimlas, 2021). These difficulties can include a lack of knowledge about the online platforms being used, a lack of Internet connectivity, insufficient experience managing online learning platforms in terms of student participation, responsiveness, and commitment, a lack of an online learning results assessment process, and a lack of skills for providing insights into courses or reshaping courses for online students. Certain obstacles, such as low perceived student participation and socially depressed students during online lessons about university culture, will affect the student's performance (Al-Baadani & Abbas, 2020).

Online learning will become increasingly important for education in a global health emergency, providing a way to communicate with classmates or teachers far away and enrol in classes. Due to Malaysia's lack of online learning platforms, universities must develop more appropriate e-learning platforms to increase Internet access and a strategy for interactive learning to address this issue. Additionally, it is necessary to provide workshops or training to teachers and students to help them improve their technological and pedagogical skills. Additionally, the quality of learning is a critical component of the continuous satisfaction that results from the educational process (Gopal et al., 2021). An instructor should facilitate learning and act as a driver for the student, as his feedback is a critical factor in determining satisfaction. Teacher feedback on tasks promptly motivates and motivates teachers (Allam et al., 2020).

While students enrol in online classes intending to complete them successfully, they frequently fail for various reasons. Students continue to prefer classroom classes over online classes due to a variety of issues encountered in online classes, including a lack of motivation, a better understanding of the material, a decrease in communication between them and their instructors, and a sense of isolation. Additionally, educators must understand their students' motivations (Norzaidi et al., 2022a).

Malaysia's Department of Higher Education announced on May 27, 2020, that all teaching and learning activities at all higher education institutions must be conducted online until December 31, 2020, with the decision extended until 2021. Only a few exceptions and strict rules have been made to prevent another COVID-19 outbreak (Al-Kumaim et al., 2021). Philippe et al. (2020) reported that when social and physical distance is applied, students and instructors discover unexpected facts about one another, which can result in an unexpected and unsatisfactory link. Students can suddenly recognize their teachers' limitations and limitations when it comes to the use of technology and time management issues. This situation may result in students being less socially connected and less likely to learn. Additionally, it may have a detrimental effect on their long-term learning and well-being.

The most significant impact on satisfaction came from the convenience of learning and the effectiveness of e-learning tools (Dziuban et al., 2007). Besides, Allam et al (2020), various types of online learning class platforms offer flexibility, time savings, and financial savings. Additionally, due to the intensity of knowledge acquired, the traditional classroom cannot compete with the majority of modern technology-enabled classrooms (Bhat et al., 2018). Despite this, active learning has improved students' learning, engagement, and interest (Andrews et al., 2020).

Li and Lee (2016), technological advancement affects the requirement for students and lecturers to develop their skills and ability to use each online platform. An online education platform is widely used during a pandemic, and no single point of contact is permitted (Kamal et al., 2020). Additionally, students were unable to attend school or university during the pandemic. COVID-19, without a doubt, affects students' academic performance (Garcia & Weiss, 2020). On the other hand, it negatively affects student performance during a pandemic rather than encouraging online learning.

Most previous studies (Allam et al., 2020; Kamal et al., 2020) have highlighted various aspects of the student and teacher experience in online learning and the implicit use of learning platforms as adjuncts to the traditional learning process. Nonetheless, limited studies examining the exclusive use of various types of online learning platforms have been conducted, as was the case during the pandemic, when universities were compelled to use and enforce this method of education as the primary mode of instruction. As one of the countries with less experience in this process, this study aims to fill a gap in various types of online learning platform studies.

Many studies, for instance, Chen et al (2017); Samir (2016), examine motivation, but none examine students' satisfaction with the online learning approach. While most studies demonstrate that e-learning fosters a positive attitude, similar studies demonstrate that students value blended learning, i.e., a combination of online and face-to-face learning, over solely online learning. Because the previous study focused exclusively on students' attitudes toward online learning, teachers could not monitor students' performance. Students may encounter difficulties or impediments, such as limited internet access or disruptions caused by low signal strength. Sure, students may experience difficulties with their home environment, such as disruptions caused by family members, which can result in poor performance. Thus, it is feasible that the researcher is interested in determining how satisfied students are with online education.

The current study proposes and empirically tests a conceptual model to close this gap. This study examines the relationship between the factors affecting student satisfaction in Malaysia's public and private higher education institutions. Apart from this study, we wish to examine students' satisfaction with their performance. Besides, culture is another important factor that may affect student preference. These factors could be measured by students' motivation, computer self-efficacy, type of online learning, environmental interruption, user satisfaction, student resistance, and student academic performance in online classes.

Review of Literature
This section will discuss current models that are relevant to a recent study. These models served as the foundation for the recent study's development. The following is the discussion:

Attention, Recognition, and Pressure Model (ARP)
The ARP model (attention, recognition, and pressure-free) is one strategy for increasing or maintaining students' readiness for learning. Allam et al (2020) concluded that attention, defined as frequent interaction between lecturers and students, increases students' readiness. Throughout virtual learning via the virtual learning platform, lecturers must provide frequent and thorough briefings on assessment. Not only that but incorporating a Q&A (question and answer) session into the class increases the effectiveness and motivation of the students to focus more. Recognized students will be rewarded for their total attendance and the best student performance during the current lesson. If the lecturer takes the initiative, it will pique students' interest in maintaining and improving their performance. The strategy of less pressure is implemented by not establishing a fixed time for signing in attendance, extending the deadline for submitting assessments and allowing students to participate. Because online or remote learning occurs at an individual's location or home, the distractions at their location or home may increase their pressure to remain focused. As a result, lecturers are advised to ease up on their students to increase their engagement and willingness to attend the virtual class.

This model is a comprehensive initiative that serves as a guideline for achieving superior academic performance while contributing to the university's academic quality. The contexts apply to exercises conducted during the COVID-19 pandemic, in which all classes are conducted online, a practice known as Online Distance Learning (ODL).
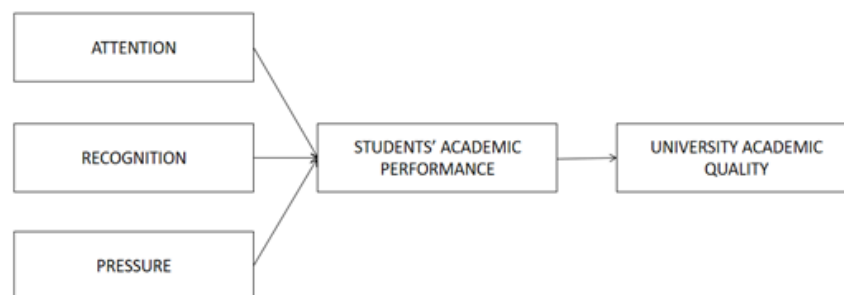
Figure 1: ARP Model (Allam et al., 2020)

ARCS: Attention, Relevance, Confidence, and Satisfaction Model
Chen and Widjaja proposed this model in their research, in which the basic design of ARCS is developed by increasing external motivation. The acronym ARCS stands for attention, relevance, confidence, and satisfaction (Widjaja & Chen, 2017). Attracting a student's attention can be accomplished through graphics, videos, texts, or platforms. Then there is the issue of relevance. Due to the relevance of the subjects or courses studied, learning materials must be provided. This condition meets the student's needs in subject learning, frequently resulting in extrinsic motivation. Grading criteria must be stated clearly during the assessment, and the materials and study plan to boost students' confidence when preparing their assignments. Satisfaction is one factor contributing to students' level of extrinsic or

external motivation. This satisfaction is achieved through the course's overall design and the materials available to students to acquire new skills via online learning (Norzaidi et al., 2022b). Online distance learning, colloquially referred to as e-learning, is a relatively new phenomenon. Extrinsic motivation, which consists of attention, relevance, confidence, and satisfaction, is one of the shifting factors in online learning. Lecturers and students need help to fit into this ODL. Transitioning from college or university learning modes to home learning-virtual modes may explain why it is so easy to feel demotivated. External motivation, therefore, plays a critical role in reducing demotivation and significantly facilitating the learning process (Huang, 2020).
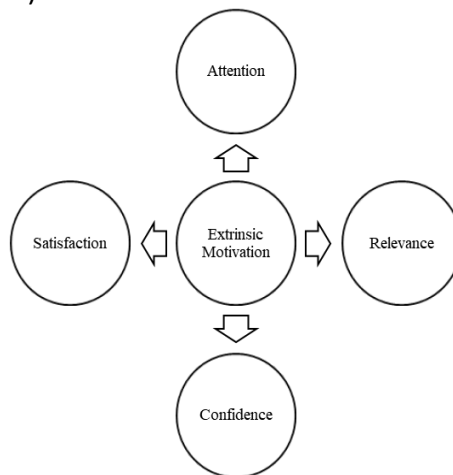
Figure 2: ARCS Model (Widjaja & Chen, 2017)

TSROL: Technical Skills, Computer Self-Efficacy, Learning Preferences, Attitudes Towards Computers Model
Pillay, Irving, and Tones proposed the model below. It was then enhanced by Lau and Shaikh, who discovered the effects of personal characteristics on online learning readiness at Curtin Sarawak Malaysia in their research article (Lau, 2012).
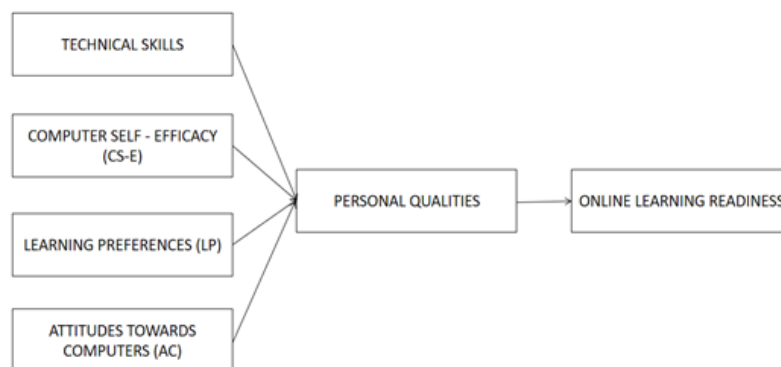
Figure 3: TSROL Model (Lau, 2012)

The model proposes that students' characteristics be classified into four categories to determine their readiness for online learning: technical skills, computer self-efficacy, learning preferences, and attitudes toward computers (Lau, 2012). Technical Skills (TS) have been overlooked in conjunction with online learning. It may not affect students' achievement. It did, however, affect students' engagement with technology. With the current pandemic in which most universities practise ODL, students must possess fundamental technical skills to

assess online classes without encountering technological difficulties. It is a shame that infrastructure limits access to technical skills in areas where connectivity and software are insufficient.

Computer Self-Efficacy (CS-E) is related to students' experiences, derived learning, and encouragement and significantly impacts students' achievement and satisfaction during ODL. Thus, if students demonstrate a high level of independence when attending online classes, the student possesses adequate CS-E. Following that, Learning Preferences (LP) indicate an individual's preferred method of instruction, which may include self-management and participation in an online class or discussion. Students must identify their optimal learning environments and learning styles to personalize their learning experience and improve their comprehension and performance. Finally, but certainly not least, Attitude Toward Computers (AC) focuses on the impact of computers on students' daily lives and their understanding of computers. When considering the factor, it is one of the student's characteristics. It is connected to the technology acceptance model in that it examines students' perceptions of the ease of use and usefulness of technology, which results in increased student satisfaction and encourages them to engage in online learning (Pillay et al., 2007).

The TSROL model can assist in identifying and resolving potential barriers to students' achievement, satisfaction, and confidence and provide the necessary skills for success in an online learning environment. This action is also used to ensure that students are prepared to begin an online course prior to beginning one in a traditional setting.

Online Learning Platform
These online learning platforms combine Zoom, Cisco Webex, Microsoft Team, and Google Meet functionality. Each platform has its characteristics, including the smoothness of the applications without confusing navigation, the fact that they are free to use without any hidden fees, and unique features that facilitate platform usage. There needs to be research on this type of online platform in particular. However, Zoom, Webex, Microsoft, Team, and Google Meet have been widely used in Malaysia to promote Online Distance Learning (ODL) and Work from Home (WFH) during this pandemic (Chung et al., 2020). Users or students who use this platform must be satisfied with its features to avoid confusion and promote its ease of use.

H1: There is a relationship between types of online learning platforms and user satisfaction.

Types of Online Learning and Students' Resistance
Resistance can be active or passive. Active resistance is synonymous with active learning, in which students do not oppose change. This situation relates to students' engagement during class sessions, such as constant interaction with the lecturer. Active learning entails the incorporation of materials that are easily accessible, the interaction between lecturers and students, valuable discussion, and effective methods (Khan et al., 2017). Passive resistance is in contrast to active learning, in which students are hesitant to change, indicating disengagement during class. According to Moore, Jayme, and Black, whether in face-to-face or online classes, the irrelevance of learning activities affects the overall quality of education (Moore et al., 2021). As a result, the types of online learning platforms significantly affect students' resistance to being active or passive learners.

H2: There is a relationship between types of online learning and student resistance.

Computer Self-Efficacy and User Satisfaction
Computer Self-Efficacy (CS-E) measures students' confidence and ability to apply their knowledge and skills when using computers and other gadgets. Similarly, a study discovered that students' computer self-efficacy is a factor in their satisfaction, which affects their performance during the blended learning session (Alqurashi, 2016). The dimensions of magnitude, strength, and generalizability have evolved into components of computer self-efficacy. Magnitude is defined as the students' capability level. A higher CS-E magnitude assists students in perceiving themselves as capable of performing more difficult computer tasks. Students' confidence in their ability to complete assigned tasks is their strength. On the other hand, generalizability reflects the degree of judgment that the hardware and software domains exercise when configuring (Compeau & Higgins, 2012). Thus, students' satisfaction is influenced by their computer self-efficacy.

H3: There is a relationship between computer self-efficacy and user satisfaction.

Computer Self-Efficacy and Students' Resistance
Frequency of use has an indirect effect on the use of online platforms and a direct effect on computer self-efficacy (Sivo et al., 2018). The time spent can be classified as time spent on the platform for virtual classes, time spent performing computer tasks, and time spent completing their assigned work (Estacio & Raga Jr., 2017). A study established that ease of use affects users' perceptions, which influences whether the user or students act appropriately to accept or reject new technology (Abdel-Maksoud, 2018). This information can be used to ascertain their attitudes, behaviours, and intentions regarding gadgets. In simpler terms, students' resistance to being active or passive students is contingent upon their computer skills or self-efficacy with computers. Students must perform and utilize technology to gain access to their virtual classes, so these are critical skills for them.

H4: There is a relationship between computer self-efficacy and student resistance.

Level of Motivation and User Satisfaction
According to Shafqat, Iqbal, and Ijaz, motivation is a fundamental aspect of human experience. A variety of underlying motivations guide students' behaviour. Highly motivated individuals are more likely to commit to the tasks at hand. Students must be motivated to complete the assigned tasks. Self-discipline is a component of motivation for self-directed learning that affects performance, particularly in a large home environment. It can result in students experiencing anxiety or pressure, affecting their satisfaction with online learning. Students' motivation levels decrease when they feel isolated during an online class session. Thus, students' motivation is critical to their satisfaction with their performance or completion of tasks.

H5: There is a relationship between motivation and user satisfaction.

Level of Motivation and Students' Resistance

Students' resistance, which determines whether they are active or passive, is determined by their psychological or motivation level. Often, a psychological factor motivates a student to complete the assignment by engaging in the behaviours (Akhtar et al., 2017). Highly motivated individuals are more likely to devote significant time to complete tasks. The transition from physical to home education has increased isolation levels, which may have negative psychological consequences (Svoboda et al., 2020). Thus, the degree to which students are motivated influences their likelihood of becoming active or passive participants in online learning.

H6: There is a relationship between motivation and student resistance.

Environmental Interruption and User Satisfaction

Like all humans, students struggle with self-satisfaction and constantly compare themselves to others. The independent variable that will determine students' level of satisfaction is an environmental interruption, which includes elements of home crisis or distraction, financial difficulties, and study essentials. It is related to at-home issues such as financial constraints, resulting in dissatisfaction due to a lack of study essentials or even the inability to pay for internet data. As a result, an environmental interruption that primarily causes problems for students is associated with a decline in student satisfaction.

H7: There is a relationship between environmental interruption and user satisfaction.

Environmental Interruption and Students' Resistance

Environmental interruption in-home learning, or ODL, focuses primarily on study essentials such as laptops, computers, internet connections, internet data, WiFi, or study tables that parents or guardians must provide to their children (Rasmitadila et al., 2020). This factor is inextricably linked to financial availability, as parents or students must use their money to purchase items on the internet. Without financial stability, students will struggle to access the virtual classroom and become disruptive to their study environment (Yulyanah, 2021). As a result, home distractions, including low internet connectivity, will impact their resistance to online learning, affecting video and audio quality. Family interruptions related to their living spaces, balancing housework and class assignments, and sound interruptions, such as when a student's house is located near a noisy developing area, result in decreased attendance, lower participation, and increased disturbance that affects their performance (Nambiar, 2020). These factors influence whether students are active or passive during class sessions.

H8: There is a relationship between environmental interruption and student resistance.

User Satisfaction and Students Resistance

Resistance to changing or transitioning from a physical to a virtual class is not uncommon. Students' resistance comprises three components: active resistance, passive resistance, and the irrelevance of learning activities. Students desire to discover and maintain their comfort zone and are willing to make gradual but not drastic changes (Vivolo, 2016). They may experience discomfort, become easily demotivated, and directly impact their satisfaction level due to the drastic change. As a result, students may feel satisfied or dissatisfied with their virtual session experience as active or passive students.

H9: There is a relationship between user satisfaction and student resistance.

User Satisfaction and Students' Academic Performance

The efficiency of online education is demonstrated by the time flexibility, cost savings, and resources or knowledge gained by students based on their performance (Rohman et al., 2020). Students' satisfaction, defined as the ease with which they can use, the amount of time they spend, and the frequency with which they use online learning, significantly impacts their efficiency, quality, and effectiveness. Dissatisfaction can easily lead to students staying persistent, completing low-quality tasks, and losing focus during an online learning session. As a result, student satisfaction is critical for increasing or maintaining academic performance.

H10: There is a relationship between user satisfaction and students' academic performance.

Students' Resistance and Students' Academic Performance

A few factors are considered when evaluating students' academic performance. Effectiveness can be measured regarding acquired skills, the student's final grade, and ongoing assessments and tests (Siagian, 2021). The quality of online learning can be defined by the work or assignments created by students. It includes comprehending the subject or topic, avoiding errors, and more (Frenette et al., 2020). However, the quality of the student's performance is debatable in terms of whether they complete the task because they understand it or if complete the task because it is a requirement without comprehending what they are learning. Thus, students' resistance, whether active or passive, or their sense of insignificance in their studies will affect their academic performance.

H11: There is a relationship between student resistance and students' academic performance.

As a summary, Figure 1 depicts the conceptual framework for this research. Eleven hypotheses are being tested in this study. The proposed model for the current research will be based on the types of online learning, computer self-efficacy, level of motivation, and environmental interruption as independent variables that will affect the mediator, which will be comprised of user satisfaction and student resistance. It will affect the dependent variable, students' academic performance.
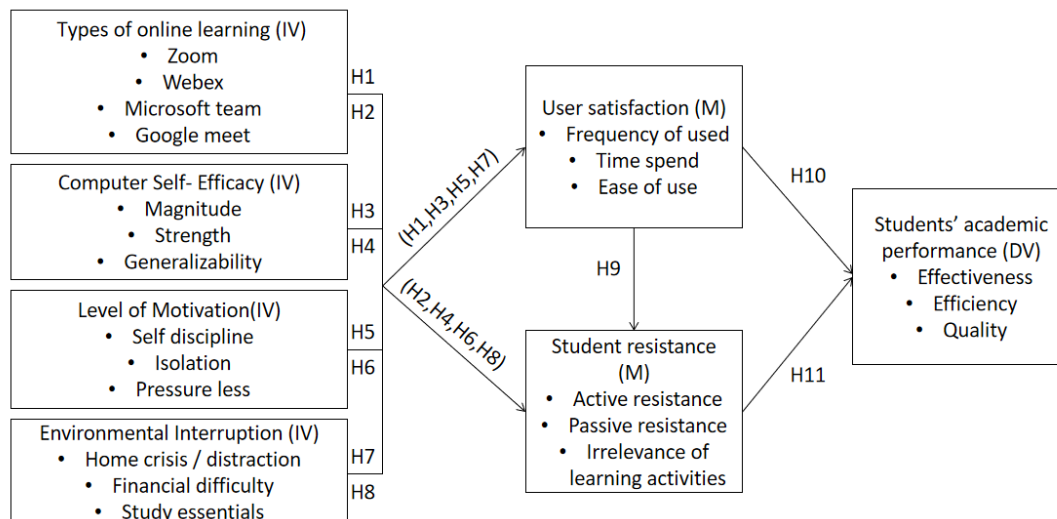
Figure 4: Research Conceptual Framework and Hypothesis of The Study

The comprehensive model developed in this study enables a holistic examination of the variables, resulting in more meaningful results. The following section discusses how the study was conducted, how the questionnaire was constructed, and how respondents were chosen.

Methodology
Sampling
The respondents in this study were all Malaysian students enrolled in public or private higher education institutions who encountered online distance learning (ODL) during the pandemic. The Ministry of Education has advised all universities to allow students to return and to inform them that all learning activities will take place online. As a result, online distance learning is the only method of conducting online learning and teaching that is both safe and practical. The questionnaire is the primary data collection instrument used in this study. The research questionnaire was distributed via email and social media platforms such as WhatsApp, Telegram, and Instagram. This research elicited responses from 259 respondents. The response rate is significantly higher than expected and is representative of the population studied. It has a high response rate since most students are forced to complete online distance learning courses during this pandemic.

Table 1
Demographic profiles of the respondents

Age (years)	Percentage
17-21	22.0
22-26	77.6
27-31	0.4
Gender	
Female	65.3
Male	34.7
Marital status	
Married	1.9
Single	98.1
Pursuing education	

Bachelor Degree	78.8
Diploma	17.4
Master Degree	1.9
Matriculation	0.8
STPM/HCE	1.2

Assessing Validity and Reliability

A general rule in determining the instrument's reliability is that the indicators should have Cronbach's α of 0.7 or below. Table 2 below shows the mean, standard deviation, and Cronbach's α for each of the variables in this study.

Table 2
Mean, Standard Deviation, and Cronbach's α for each variable

Construct/Scale	Mean	Standard Deviation	Cronbach's α
Types of online learning			0.788
I like to use Zoom compared to the other platforms	3.63	1.671	
I like to use Webex compared to the other platforms	3.09	1.627	
I like to use Microsoft Team compared to the other platforms	3.54	1.820	
I like to use Google Meet compared to the other platform	5.95	1.383	
Computer self-efficacy			0.763
I can settle the task or assignment using electronic devices (computers).	5.65	1.268	
My computer skills are enough to adapt to Online Distance Learning (ODL).	5.31	1.235	
I have high confidence in performing computer tasks.	5.22	1.224	
Computer task is complicated for me.	3.72	1.623	
Level of motivation			0.778
In my studies, I find it easy to set aside reading and homework time through an online learning platform.	4.36	1.383	
I can communicate in class without feeling isolated.	4.41	1.434	
I feel stressed learning through online class platforms.	5.41	1.518	
Learning on an online learning platform is more motivating than a physical class.	2.93	1.719	
Environmental interruption			0.748
My family respects my time during an online class.	4.97	1.662	
There is no interruption when I am studying through Online Distance Learning.	4.07	1.741	
		1.724	
I have no financial problems during Online Distance Learning.	4.82	1.677	
	5.07		

My online study essentials are complete. (Laptop, study table, stationery, internet data, etc.).			
User satisfaction			0.746
I often used the online learning platform to have discussions with my friends.	5.27	1.418	
I am satisfied with the platform used.	5.14	1.234	
The online learning platforms are easy to use.	5.20	1.286	
I always spend my time using online learning platforms during Online Distance Learning.	5.28	1.436	
Students' resistance			0.814
I am an active participant in my virtual class.	4.23	1.458	
I am not feeling guilty when I am not attending class.	2.72	1.715	
I find Online Distance Learning irrelevant.	4.05	1.522	
Physical classes are more attractive than virtual classes.	6.09	1.286	
Students' academic performance			0.757
I can eliminate mistakes by completing my assignments promptly.	4.67	1.302	
My CGPA has increased since the online learning class.	4.66	1.575	
I gain more knowledge during online classes compared to physical classes.	3.86	1.471	
My quality of work has increased during an online class.	4.20	1.452	
I found a new skill to complete my task.	5.08	1.454	

Table 2 contains the mean and standard deviation values for each variable included in this study. Despite the significant standard deviation, the study's findings indicate that respondents concur that Google Meet is the best platform for online distance learning (ODL) during the pandemic. Additionally, the findings of this study indicate that respondents believe they can complete tasks or assignments assigned via electronic devices such as computers and that they possess the necessary skills and confidence to adapt to and perform tasks via computer during online distance learning (ODL). The respondents believe that while learning via online class platforms can be stressful, they can still speak freely in class. They find scheduling time for reading and homework simple via an online learning platform.

Additionally, this study demonstrates the environmental interruptions that respondents may encounter. The findings indicate that respondents agree that they have all the study essentials for their online learning class, such as a laptop and study table. Next, the students agree that their family respects their time during online classes and that they face no financial difficulties while enrolled in online classes (ODL). Regarding user satisfaction, respondents agree that they spend most of their time on online learning platforms during online distance learning (ODL) and frequently use them to communicate with friends. Additionally, they agree that the

platforms are user-friendly and that they are satisfied with the platform they are currently using.

Besides, respondents believe that physical classes are more appealing than virtual classes, but they agree that they actively participate in virtual classes. Additionally, the respondent agrees that their CGPA has improved due to online distance learning (ODL). Finally, they agree that their work has improved and they have gained more knowledge than they would have gained in a physical class. Finally, this study examines students' academic performance during online distance learning (ODL), with respondents agreeing that they gained new skills and improved their ability to reduce errors and complete assignments on time during ODL.

Findings

Correlation

The correlation matrix between the variables is shown in Table 3. Table 3 summarises the different online learning platforms demonstrating a positive correlation with computer self-efficacy (r = 0.377). It is likely because various online learning platforms require the student to possess basic computer skills to use the platform effectively. Thus, having a high level of computer self-efficacy will assist the student in comprehending how to use various types of online learning platforms while pursuing online distance learning. Additionally, self-efficacy with computers has a strong positive correlation with user satisfaction (r = 0.640). With adequate computer skills, students can adapt to the technology used for online distance learning and the types of online learning platforms used by the lecturer during class, resulting in increased user satisfaction.

Table 3

Correlations among the subscales of the constructs

	TOLP	CSE	LOM	EIN	USN	SRE	SAP
TOLP		0.377**	0.238**	0.373**	0.360**	0.130*	0.379**
CSE	0.337**		0.463**	0.465**	0.640**	0.162**	0.370**
LOM	0.238**	0.463**		0.378**	0.422**	0.283**	0.394**
EIN	0.373**	0.465**	0.378**		0.574**	0.225**	0.542**
USN	0.360**	0.640**	0.422**	0.574**		0.139*	0.518**
SRE	0.130*	0.162**	0.283**	0.225**	0.139*		0.223**
SAP	0.379**	0.370**	0.394**	0.542**	0.518**	0.223**	

Notes: *Correlation is significant at the 0.05 level, **Correlation is significant at the 0.01 level. Key: TOLP – types of online learning platforms; CSE – computer self-efficacy; LOM – level of motivation; EIN – environmental interruption; USN – user satisfaction; SRE – students' resistance; and SAP – students' academic performance

Additionally, Table 3 demonstrates a positive correlation between a student's motivation and academic performance (r = 0.394). When students are motivated during online classes and can communicate with their classmates and lecturer without feeling isolated, they will better understand the online class, improving their academic performance. On the other hand, environmental interruption demonstrates a moderately positive correlation with user satisfaction (r = 0.574). It is likely because students have a complete online study essentials package, are not having financial difficulties purchasing data, and have a strong internet

connection during online distance learning. They will be satisfied with their experience using online learning platforms. If both environmental interruption and user satisfaction are met, academic performance will improve, as both strongly correlate with academic performance (r = 0.542) and (r = 0.518), respectively. Students can gain a better understanding, which will result in improved academic performance if they have a positive environment and satisfaction with the online learning platforms, as well as a high level of motivation during online distance learning.

Hypotheses Testing
The results of this study's eleven hypotheses are summarised in Table 4. According to the data analysis, the types of online learning platforms significantly affect user satisfaction. Thus, with a p-value of 0.0001, H1, the relationship between online learning platforms and user satisfaction is accepted. As a result, the hypothesis is not refuted. Student resistance can also be predicted by the type of online learning platform used. The P-value of =0.037, the relationship between the online learning platform and student resistance, the H2, is accepted. Additionally, the study's findings do not reject H3, which indicates that computer self-efficacy significantly affects user satisfaction; thus, H3 is accepted; p-value = 0.000.

Similarly, H4 is accepted as a significant predictor of student resistance when computer self-efficacy is high; p-value = 0.009. User satisfaction is significantly predicted by motivation; p-value = 0.000. Thus H5 is accepted. Additionally, motivation strongly predicts the student's resistance; with a p-value of 0.000, H6 is accepted. The environmental interruption was found to predict user satisfaction significantly; p-value = 0.000. As a result, H7 is accepted. Environmental disruption also predicts student resistance significantly; p-value = 0.000, indicating that H8 is accepted in this study. H9, with a p-value of =0.026, was found to predict student resistance and thus does not reject the hypothesis. User satisfaction is a significant and robust predictor of academic performance in students; the p-value is 0.000. As a result, H10 is accepted. Finally, it is discovered that student resistance predicts academic performance; the p-value is 0.000, and thus, H11 is accepted.

Table 4
Hypotheses results

Hypothesis	Causal relationship	Factor	β	Sig.	Result	
H1	Types of the online learning platforms ⟶	user satisfaction	0.078	0.000	Do reject	not
H2	Types of the online learning platforms ⟶	student resistance	0.031	0.037	Do reject	not
H3	Computer self-efficacy ⟶	user satisfaction	0.428	0.000	Do reject	not
H4	Computer self-efficacy ⟶	student resistance	0.019	0.009	Do reject	not
H5	Level of motivation ⟶	user satisfaction	0.086	0.000	Do reject	not
H6	Level of motivation ⟶	student resistance.	0.234	0.000	Do reject	not
H7	Environmental interruption ⟶	user satisfaction.	0.314	0.000	Do reject	not

H8	Environmental interruption	→	student resistance.	0.134	0.000	Do not reject
H9	User satisfaction	→	student resistance.	0.139	0.026	Do not reject
H10	User satisfaction	→	student's academic performance.	0.518	0.000	Do not reject
H11	Student resistance	→	student's academic performance.	0.223	0.000	Do not reject

Notes: β = standard error, Cronbach's α = 0.7, * = < 0.05 Sig = statistically significance of the test

Discussion and Practical Implementation

This study's purpose was to better understand the relationship between the types of online learning class platforms and the performance of students in Malaysian public and private higher education institutions. Additionally, this study proposed a research model based on the types of online learning, computer self-efficacy, level of motivation, and environmental interruption as independent variables related to the mediators of user satisfaction and student resistance. After collecting and analyzing over 259 data sets from various student levels at Malaysian public and private universities, we discovered that respondents agree that Google Meet is the best platform for online distance learning (ODL) during the pandemic. The study discovered that individuals possess computer self-efficacy, which refers to their ability to complete tasks or assignments assigned via electronic devices such as computers during online distance learning (ODL). The findings indicate that respondents agree that they have gathered all the necessary study materials for online learning. Students agree that they spend the majority of their time during online distance learning (ODL) on online learning platforms. They also agree that their CGPA and work quality have improved as a result of ODL. The study examines students' academic performance while participating in ODL, with respondents agreeing that they gained new skills. Additionally, the data analysis reveals a significant relationship between the types of online learning platforms and students' performance. According to this research, Google Meet is students' most frequently chosen online learning platform.

Benefit and Implication of the Study

Significant opportunities exist to achieve the objectives outlined in the National E-Learning Policy (Dasar e-Pembelajaran Negara or DePAN). Our findings have three practical implications. In many educational institutions between 2020 and 2021, the Online Learning Class Platform was viewed as an integral component of the student learning experience (Turnbull et al., 2021). Given that students have no choice but to continue their studies in the face of the COVID-19 pandemic, the Online Learning Class Platform's importance cannot be overstated. Malaysia has a 67 percent internet penetration rate, ranking seventh in Asia, according to the Malaysia Blueprint 2015–2025 report by the Ministry of Education Malaysia. It enables Malaysia to fully leverage the power of online learning to increase access to high-quality content, improve the quality of education and learning, reduce delivery costs, and export acumen to a global context. It is what the Ministry of Education Malaysia wishes to accomplish over the next few years. A shift away from a mass production model toward one

in which technology is used to make education more accessible to everyone and to provide each student with a more personalized learning experience.

Second, it is unsurprising that many students' positive dispositions influence is critical for the acceptance of most technologies; we have demonstrated this in higher education studies. Finally, the relationship between online learning modes, computer self-efficacy, degree of motivation, environmental interruption, and students' academic achievement revealed a significant moderating effect of user satisfaction and student resistance. As a result, universities and faculty should first classify students according to their academic performance and then implement an integrated online learning system that allows students with low academic performance to be influenced by students with high academic performance (Kim et al., 2021).

Recommendation of the Study
User satisfaction and student resistance to various types of online learning platforms.
According to the study's findings, the most important factor influencing user satisfaction and student resistance is platform accessibility. As a result, we recommend that the company developing the online education platform invest additional funds in technology innovation and platform accessibility to provide users with a higher level of satisfaction with interactive learning facilities (Chen et al., 2020). The assistance should be provided to lecturers in developing interactive online materials using Quizizz, Kahoot, Quizlet, StudyStack, and Brainscape, among others. These platforms are simple to use, and there are tutorials available to assist students in studying independently or participating in group quizzes, assignments, and presentations. Additionally, universities must expand their Internet bandwidth and data center capacity, acquire licensed e-learning tools and provide IT training to students and faculty.
Additionally, universities can collaborate with online learning platforms to enhance the student learning experience. Additionally, universities can influence user satisfaction and student resistance by developing an innovative learning hub or educational platform. It will help students and lecturers develop a more positive perception of the usability of online learning class platforms.

Self-efficacy of computers in terms of user satisfaction and student resistance
To ensure that computers are used effectively, it is critical to support teachers' professional development in using digital resources for pedagogical practice and promote classroom practices appropriate for this environment (Burns, 2020). Policymakers should consider developing more robust online courses with a more challenging curriculum for digital learners, for instance, by analyzing and demonstrating comprehension of the material through peer responses (OECD, 2021).

Student resistance and level of motivation toward user satisfaction
By increasing school-parent engagement, educational systems can provide parents with more information and guidance on effective practices for supporting their children's learning (Ministry of Education Malaysia, 2021). Synchronous virtual learning platforms can increase students' motivation by providing clear instructions regarding their work. Portals for learning with educators and peers are recommended to instil a greater sense of motivation. Interaction between synchronous and asynchronous forums, blogs, message boards, and chat

rooms will increase user satisfaction, assist students in need, and substitute for the personal support and mentorship provided by traditional on-campus learning (el Said, 2021). Universities should align their synchronous platforms, which means they should use and focus exclusively on one platform to reduce student confusion in online learning.

Environmental disruption aimed at achieving user satisfaction and overcoming student resistance
On the other hand, teachers require assistance in integrating technology effectively into their teaching practices and approaches, as well as assisting students in overcoming some of the difficulties inherent in this type of learning environment (Ferri et al., 2020). Universities can develop or provide programs to assist educators in developing empathy in students, as using empathy in the classroom enables educators to understand better and support their students' welfare. It is critical for students who learn and think differently to feel understood and encouraged. It aids student retention, increases self-awareness, and encourages students to speak for themselves in various situations. Students may encounter financial difficulties or mental health issues during online classes, interfering with their studies. Thus, universities can establish a student hotline to connect with students needing assistance, such as a counseling centre for students struggling with mental health.

User satisfaction and student opposition to a student's academic performance are indicators of user satisfaction and student opposition to a student's academic performance, respectively
According to Joosten and Cusatis (2019), students who require additional assistance or have academic difficulties anticipate a more interactive and collaborative lecturer. As their interaction with the lecturer improves, their perspective on learning improves. Hence, by incorporating an e-mentoring role into the university's website, the university can assist students in areas of weakness. For instance, providing supplemental resources, responding to students' inquiries, or arranging online one-on-one sessions with coaching specialists can help students improve their performance. Universities could create a more student-friendly online learning class platform by collaborating with the developer to improve some of the features of existing online learning class platforms. For instance, an online class learning platform enables students to reduce their data usage during online classes.

Conclusion
The findings of this study make recommendations for the future implementation of online learning platforms and student performance in Malaysian public and private higher education institutions, as well as best practices. While there are indications that it may have a lasting impact on the trajectory of learning innovation and digitization, it is too early to assess the impact of COVID-19 on education systems worldwide (Said, 2021). Given Malaysia's decision to incorporate remote learning into all future higher education plans, the research findings will be critical for Malaysia's universities and other emerging nations. Comprehensive investigations into diverse teaching can focus on how pedagogy and curriculum design influence students' pre-existing engagement with diverse learning models. Taking this into consideration, higher education institutions should re-prioritize funding for assessing student performance and the teaching content of the Online Learning Class platform.

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