Impact of Digital Tools and Online Platforms on Education and Learning in Myanmar: A Digital Business Perspective

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Abstract

This study explores the impact of digital technologies and online learning platforms on education in Myanmar from a digital business viewpoint. The major objectives are to study how digital learning tools influence student participation and satisfaction, how technical barriers affect learning effectiveness, and whether teachers' digital pedagogy abilities play a bigger role than infrastructure in successful EdTech deployment. A quantitative, cross-sectional research design was adopted. Teachers and students engaged in digital and hybrid learning were given structured online surveys to collect data. A total of 618 valid replies were collected, including 437 from students and 181 from teachers. Using five-point Likert scales, the surveys assessed teachers' proficiency with digital pedagogy, technological barriers, hybrid learning strategies, student involvement, and learning satisfaction.

Multiple regression and descriptive analyses were conducted to assess the five hypotheses. The results demonstrate that digital learning aids are positively connected with student participation and overall learning satisfaction. The best indicator of perceived learning benefit was student participation in class. However, technical barriers, especially inconsistent internet connections and energy outages, significantly decrease the effectiveness of digital learning. The results also show that universities that use hybrid learning approaches report higher demand for EdTech tools. Most significantly, it was discovered that teachers' proficiency with digital pedagogy had a greater impact than just having gadgets or internet access.

The study suggests that while digital tools generate significant learning opportunities in Myanmar, their performance depends heavily on teacher abilities and institutional adaptation rather than technology alone. These findings indicate the need for practical teacher training and supported digital infrastructure to boost both educational outcomes and the expansion of Myanmar's EdTech sector.

Keywords: *Digital Learning, Educational Technology (Edtech), Student Engagement And Participation, Digital Pedagogy Skills, Hybrid Learning, Myanmar*

1. Introduction

This study examines the impact of digital tools and online platforms on education and learning resources in Myanmar, as well as the relationship between these changes and the growth of digital business. Education plays a significant role in a country's growth and development. The use of technology in education is not only a new way to learn, but it's also a growing business opportunity in today's world (Park, 2025). Digital education, or EdTech, is a big part of the digital economy. Technology companies, software developers, and online content creators are transforming the way education is delivered, managed, and consumed.

Myanmar, like many other developing countries, saw a big change in education during and after the COVID-19 pandemic. Colleges and universities had to switch from teaching in person to using digital and online tools (Gomersall & Floyd, 2023). Teachers started using apps like Zoom, Google Classroom, Microsoft Teams, and others to keep teaching. Students used e-books, digital learning materials, and recorded lectures more. These changes not only changed how education was delivered, but they also created new chances for digital businesses to grow, like private online tutoring, digital content design, and education technology (EdTech) start-ups. This study investigates the educational and business dimensions of digital transformation within Myanmar's education sector.

Face-to-face teaching and printed books have always been a big part of Myanmar's education system. Before 2020, only a few private or international schools shifted to traditional teaching on online platforms. The COVID-19 pandemic and the political unrest that followed made it necessary for the education system to quickly switch to online learning (Thida et al., 2025). Private universities, other online classes, and businesses began using digital platforms to keep running. Some examples are English language centers, marketing courses, and international training programs that switched to digital tools for teaching. Teachers and students had to get used to tools such as Zoom, Google Classroom, Microsoft Teams, and digital learning materials to keep learning and teaching through screens**.**

The growth of digital learning has also opened up new business opportunities. Entrepreneurs and tech companies started to offer online courses, apps, and other digital tools. The EdTech industry began to grow, bringing together business and education (Rafiq et al., 2024). Some universities, for example, started offering paid online certificate programs, and others worked with private digital learning platforms to give students course materials. Many students in Myanmar's cities, like Yangon and Mandalay, also took international online courses. This shows how local education is becoming part of the global digital business world. Digital tools are now part of a new ecosystem that connects technology, business, and education.

1.1 Objectives

This study seeks to comprehend the impact of digital tools, teaching skills, learning models, and technical barriers on educational outcomes within Myanmar's education system.

RO1: To analyze the relationship between teachers' effective use of digital pedagogy tools and student engagement and perceived learning quality.

RO2: To investigate how the use of digital learning tools influences student participation and satisfaction.

RO3: To examine the relationship between technical barriers (such as weak internet access, limited devices, and power stability) and the perceived effectiveness of digital learning programs.

RO4: To compare the perceived demand for and uptake of EdTech tools among institutions using hybrid learning models versus those using fully online or fully in-person learning models.

RO5: To evaluate whether teachers' digital pedagogy skills have a stronger influence on effective EdTech implementation than the availability of devices or internet access.

1.2 Statement of Hypotheses

The following hypotheses are proposed to explain the impact of digital tools, barriers, teaching skills, and learning models on learning outcomes and the adoption of educational technology, in accordance with the research objectives and questions.

H1: Teachers' effective use of digital pedagogy tools is positively associated with higher student engagement and perceived learning quality.

H2: The use of digital learning tools is positively associated with higher student participation and satisfaction.

H3: A negative correlation exists between technical barriers (such as weak internet access, limited devices, and power stability) and the perceived effectiveness of digital learning programs.

H4: Institutions utilizing hybrid learning models report a higher perceived demand for and uptake of EdTech tools compared to institutions using fully online or fully in-person models.

H5: Teachers' digital pedagogy skills exert a stronger influence on effective EdTech implementation than the mere availability of devices or internet access.

2. Literature Review

2.1 Studies on Digital Technology in Education

Teaching and learning are greatly aided by digital technology, particularly during disruptions. According to Coe et al. (2020), digital communication platforms, online tests, and video classes all aid

students in efficiently continuing their education. Additionally, Makalesi (2023) noted that interactive materials, such as digital exercises and movies, boost student motivation by enabling flexible, self-paced learning. These characteristics lessen stress and improve understanding, especially for students who require more time. With features like breakout rooms and online chats, platforms like Facebook Messenger, Zoom, and Viber are popular in Myanmar and facilitate communication and teamwork (Rafiq et al., 2024).

From the standpoint of digital business, a lot of educational technologies are created and run by private businesses that use licensing or subscription models. Platforms such as Zoom and Microsoft Teams generate revenue from educational institutions, demonstrating how digital learning tools are incorporated into the larger digital economy. According to Christensen and Raynor (2003), implementing new technology in the classroom frequently results in the creation of new markets and changes the way services are provided. This is particularly relevant to Myanmar's changing digital education environment since it demonstrates how digital technologies not only affect learning outcomes but also turn education into a technology-driven economic sector (Auh & Kim, 2025).

2.2 Studies on Online Learning Platforms and LMS

In order to manage classes, learning materials, assignments, assessments, and communication, online learning platforms like Learning Management Systems (LMS), such as Google Classroom, Moodle, Microsoft Teams, and Edmodo, are essential. Kyaw et al. (2024) discovered that although Moodle enhanced access to educational materials in Myanmar, students faced challenges, including slow internet, a lack of equipment, and trouble comprehending platform features. While Mokhtar et al. (2020) point out that effective LMS adoption mostly depends on teachers' digital competence, UNESCO (2020) highlights that LMS platforms encourage hybrid learning by offering structure and tracking student progress. LMS providers function as service ecosystems where value grows with user engagement and make money through subscriptions, institutional plans, and premium features. This illustrates how LMS platforms in Myanmar not only improve the delivery of education but also open up new EdTech commercial prospects (Win & Swe, 2022).

2.3 Studies on Digital Learning Materials

During school closures, digital learning resources, including e-books, PDFs, recorded video lectures, and interactive content, became vital resources, particularly for students in remote areas with little access to printed materials. According to Scheel et al. (2022), digital resources enable teachers to deliver differentiated content, which promotes flexible and customized learning. While private institutions, online courses, independent tutors, and so on started creating and marketing digital materials for tests and professional courses, many students in Myanmar depended on recorded lectures and downloaded resources shared via social media and messaging platforms (Gomersall & Floyd, 2023). In light of the increased need for easily accessible educational materials, EdTech companies make money via digital textbooks, subscription-based content, and mobile-friendly learning resources. According to this trend, Myanmar's growing usage of digital learning resources not only promotes educational continuity but also opens up new markets for digital content and local EdTech growth (Naw, 2020).

2.4 Student Experiences and Learning Behaviors in Digital Environments

Important insights into how digital learning affects engagement and academic conduct can be gained from student experiences. According to studies, students appreciate the ease and flexibility of online learning, especially the capacity to view recorded courses and study at their own speed, which boosts their confidence in their ability to learn (Lysenko et al., 2023). Students at private universities in Myanmar, particularly in Yangon and Mandalay, reported better access to digital resources. But it seems that some students can’t fully participate in in-person classes at all times due to unstable internet connections and expensive mobile data (Gomersall & Floyd, 2023). The learners join the classes with various devices such as laptops, tablets, iPads, and smartphones with even small screen sizes. A lack of digital skills and distractions from home negatively affect motivation and focus, even though urban learners typically have better connectivity than rural ones.

These results underline the significance of user experience in the successful adoption of digital education services in Myanmar by indicating that effective digital learning depends not only on technological access but also on learner support, clear instructional guidance, and reasonably priced, mobile-friendly platforms (Garlinska et al., 2023).

2.5 Barriers to Digital Learning: Infrastructure, Devices, Skills, and Social Factors

In Myanmar, socioeconomic circumstances, device access, digital skills, and infrastructure constraints all have a significant impact on digital learning. According to Kyaw et al. (2024), the main barriers include inadequate internet connectivity, unstable electrical supplies, and restricted access to suitable educational equipment. Due to power outages, internet outages, and expensive mobile data, many students find it difficult to participate in live online classes (Gathering House Youth Empowerment Society, 2024). Even while students in cities like Mandalay and Yangon typically have better access, learning activities are nevertheless disrupted by unreliable Wi-Fi and frequent power outages. Additionally, those kinds of difficulties limit their capacity to participate completely in online platforms and do projects quickly.

These issues are made worse by socioeconomic inequality and digital literacy. While some students have trouble using online communication tools, file uploads, and Learning Management System (LMS) features, teachers with little digital expertise have trouble running virtual classrooms and producing quality digital content. According to Lysenko et al. (2023), students from low-income households frequently lack access to paid learning materials and peaceful study places, which increases educational inequities. From the standpoint of digital business, these barriers restrict market expansion and hinder the uptake of EdTech platforms, underscoring the need for low-cost, mobile-friendly, and low-bandwidth educational solutions. Overall, there are both substantial educational needs and unrealized potential for inclusive digital education offerings in Myanmar's digital learning environment.

2.6 Research Framework (Conceptual Framework)

This study's conceptual framework investigates the effects of digital technologies and online learning platforms on educational results in Myanmar. According to Figure-1, four independent factors are included in the framework: teachers' proficiency in digital pedagogy, technological barriers, digital tools and online platforms, and hybrid learning models. These elements are believed to influence educational results, including student engagement, involvement, learning satisfaction, and achievement. As shown by the author (Kyaw et al., 2024), the approach, which emphasizes both technology adoption and access difficulties, is informed by the Digital Divide Theory and the Technology Acceptance Model. In addition, a digital business perspective is added to highlight how digital education platforms contribute to emerging EdTech potential in Myanmar. Figure 1 below shows the conceptual framework for this study.

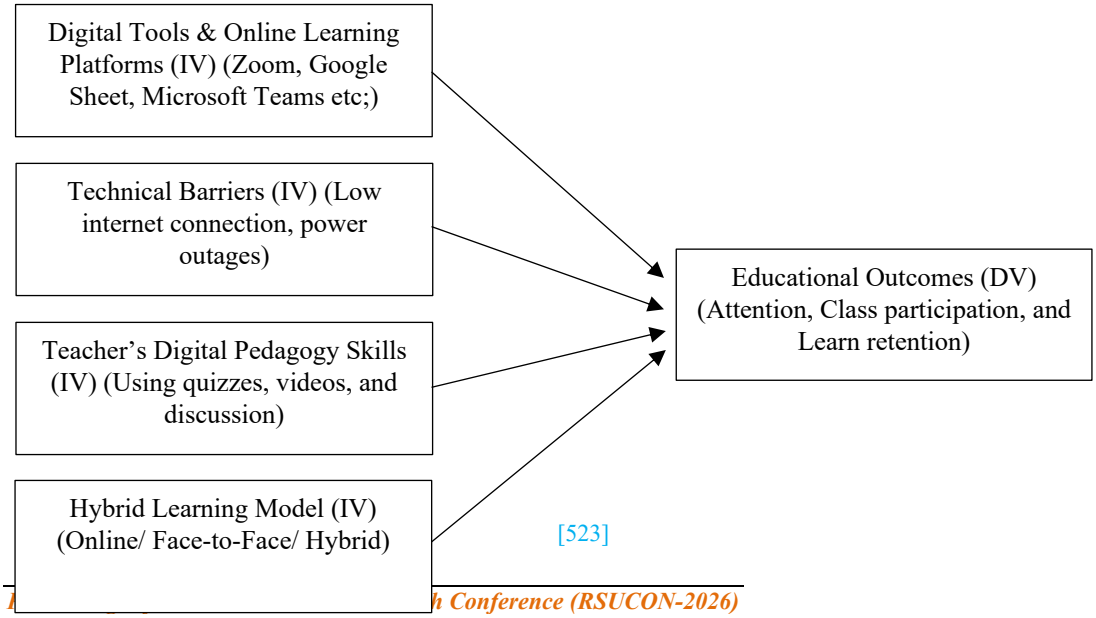

Figure 1 The Conceptual Framework of Digital Education in Myanmar
Source: Ida Jeng Christensen, 2020

3. Research Methodology

3.1 Research Design

This study utilizes a quantitative, descriptive, and cross-sectional research approach to assess the influence of digital tools and online platforms on education in Myanmar from a digital business perspective. The descriptive technique is used to examine present digital learning practices, infrastructure, and digital literacy difficulties, and to develop EdTech commercial activities. In addition to opening up new possibilities for online education services, digital technology has changed how educators and students engage with educational materials (Rafiq et al., 2024). To gather data at a single point in time, a cross-sectional approach was chosen, which reflects the current use of digital learning amid COVID-19 disruptions and ongoing political unrest (Thida et al., 2025).

The study focuses on students and educators from private international institutions and online education programs in major urban centers such as Yangon and Mandalay, which were among the initial adopters of digital learning. This research studies how digital adoption affects learning outcomes as well as the growth of education-related commercial models, including paid online courses, digital learning materials, and subscription-based content. By focusing on these urban environments, the study intends to provide insights into both educational change and digital business growth within Myanmar's expanding EdTech landscape (Tun, 2025).

3.2 Population and Samples

3.2.1 Sampling Framework

This study focuses on teachers and students engaged in online and digital learning at Myanmar's independent learning programs, online training facilities, and private international universities. The World Bank (2023) estimates that between 300,000 and 350,000 people engage in technology-supported learning, primarily in cities with higher internet connectivity. The sampling framework takes into account the kind of institution, location (Yangon, Mandalay, and other cities), participant role (teachers and students), and degree of digital experience in order to represent Myanmar's varied digital learning environment. This approach ensures representation across varying levels of access, digital literacy, and exposure to EdTech services, which is essential for examining how digital learning adoption influences both educational outcomes and participation in emerging digital business activities such as online tutoring and paid course platforms (Myanmar Data Tech Team, 2025).

3.2.2 Sampling Method

A stratified random sample technique was used in this study to provide equitable representation among the major participant groups. The population was first separated into two primary strata (students and teachers), then further classified by institution type and location. Within each subgroup, random sampling was then used. By recording a variety of digital learning experiences in Myanmar, this method lowers sample bias and increases the accuracy. Stratified sampling is particularly relevant in this setting, since differences in internet access and digital literacy occur across different populations (Lysenko et al., 2023).

3.2.3 Sample Size

This study comprises teachers and students from independent digital learning programs, online training facilities, and private international universities in Myanmar, namely in Mandalay and Yangon, where the use of digital education is most prevalent. The World Bank (2023) estimates that between 300,000 and

350,000 people nationally engage in technology-supported learning in Myanmar. Based on established research recommendations, a minimum sample of roughly 400 respondents is regarded as sufficient for large populations at a 95% confidence level (Coe et al., 2020); hence, the study targeted 500 participants to boost reliability and account for non-responses. Ultimately, 618 complete replies were obtained, comprising 437 pupils and 181 teachers. This sample size exceeds the minimum requirements for multiple linear regression analysis and provides adequate statistical power to examine the relationships between digital tools, technical barriers, teachers' digital pedagogy skills, hybrid learning models, and educational outcomes, while also supporting analysis of emerging digital education business participation in Myanmar (Myanmar Data Tech Team, 2025).

3.3 Data Collection

An online questionnaire sent via email, Telegram, Viber, Messenger, and Facebook Groups (e.g., the Teacher Association Group in Myanmar, the Myanmar Researchers and Scholars Association (MRSA) Group, and so on) was used to gather data. This approach was appropriate since the majority of participants were already engaged digital users, as indicated in previous chapters. The study's focus on digital learning and digital business behaviors was also shown by the fact that many participants were familiar with online forms and communication tools (UNESCO, 2020). Online data collection also made it easier for participants located in different regions, and infrastructure problems that make it hard for people to get involved (Gomersall & Floyd, 2023).

3.4 Research Instrument

Students and teachers were given structured online surveys to complete in order to gather data. Two survey forms were used to capture demographic information, learning experiences, access to devices, technical barriers, attitudes toward digital tools, hybrid learning methods, and teachers' digital pedagogy skills. Most questions used a five-point Likert scale to determine levels of agreement or frequency. Open-ended questions were also included to capture participants' personal experiences, benefits, obstacles, and training needs. These instruments provided the quantitative data needed to evaluate all hypotheses and assess correlations among digital technologies, infrastructure, teaching skills, and educational outcomes. In the below the data analysis testing related to the hypothesis. The study uses three hypotheses: Hypothesis-2 for STUDENT, Hypothesis-3 for STUDENT, and Hypothesis-4 for TEACHER.

4. Result

4.1 Results of Demographic Information of the Respondents

Table 1 Demographic Characteristics and Digital Tool Impact Perception of Learners and Teachers

Statistical Variables	Classification	Learners (n=436)		Teachers (n=181)	
		Frequency	Percentage	Frequency	Percentage
Institution Type	College/University	233	53.44%	25	13.81%
	Private school	103	23.62%	79	43.65%
	Urban public school	57	13.07%	52	28.73%
	Rural public school	26	5.96%	13	7.18%
	Other	16	3.67%	11	6.08%
Impact of Digital Tools	Very Positive	169	38.76%	53	29.28%
	Somewhat Positive	154	35.32%	81	44.75%
	Neutral	73	16.74%	39	21.55%
	Somewhat Negative	37	8.49%	7	3.87%
	Very Negative	3	0.69%	1	0.55%
Learning Mode (Students only)	Fully face-to-face	179	41.06%	-	-
	Hybrid	162	37.16%	-	-
	Fully online	95	21.79%	-	-

Teaching Experience (Teachers only)	< 1 year	-	-	19	10.50%
	1–5 years	-	-	71	39.23%
	6–10 years	-	-	35	19.34%
	11–20 years	-	-	35	19.34%
	> 20 years	-	-	21	11.60%

According to Table 1, the survey captured data from 617 respondents including 436 students and 181 teachers and it represents a diverse cross-section of Myanmar's digital education landscape. The data shows a high level of positivity toward digital tools, with 74.08% of students and 74.03% of teachers reporting a 'Very Positive' or 'Somewhat Positive' impact. This high favorability among the 18–35 age demographic suggests a strong market readiness for EdTech services and online business growth in urban hubs like Yangon and Mandalay.

4.2 Results of Hypothesis 2:

The use of digital learning tools is positively associated with higher student participation and satisfaction.

Statistical Significance and Model Fit

The findings of the multiple linear regression analysis provide robust empirical evidence to support Hypothesis 2. The ANOVA results confirm that the overall model is statistically significant, $F(3, 429) = 33.361$, $p = .001$, indicating that the collective influence of the digital tool variables significantly impacts the dependent variable, **overall learning impact.**

Table 2 ANOVA Results for the Regression Model of Digital Tool Impact

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	47.465	3	15.822	33.361	.000[b]
Residual	203.454	429	0.474		
Total	**250.919**	**432**			

According to the table (2) Model Summary, the regression achieved an $R^2 = .189$ and an Adjusted $R^2 = .183$. The Adjusted R^2 is utilized here as a more conservative and reliable metric, as it accounts for the number of predictors to prevent an artificial inflation of explanatory power. This value indicates that 18.3% of the variance in student learning satisfaction is directly attributable to the digital tools measured. While human learning is inherently influenced by numerous external factors, this 18.3% represents a meaningful and significant contribution to the educational process.

Table 3 Regression Coefficients of Factors Influencing Digital Tool Impact

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.768	0.149		18.620	0.000
Attention hold	0.121	0.041	0.169	2.923	0.004
Class participation	0.170	0.041	0.209	4.109	0.000
Learn retention	0.109	0.041	0.150	2.642	0.009

Analysis of Predictors. Among the variables tested, **Class Participation** emerged as the strongest significant predictor within the model. The Coefficients table reveals a standardized coefficient β of .209, with $t = 4.109$ and $p < .001$. This positive coefficient demonstrates that as students become more active through the use of digital tools, their perception of the overall learning impact increases. Furthermore, the Unstandardized Coefficient ($B = .170$) quantifies this relationship: for every one-unit increase in a student's participation score, their overall satisfaction with the learning impact increases by 0.170 units, holding other variables constant.

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Validation of Regression Assumptions

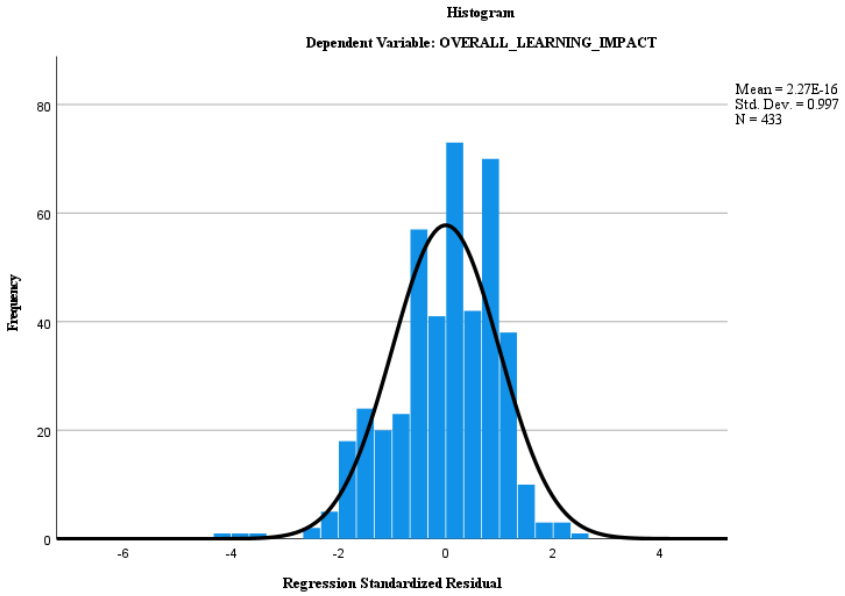

Figure 2 Histogram of Standardized Residuals for Overall Learning Impact

The validity of these statistical proofs is further supported by diagnostic data. The Histogram of Standardized Residuals displays a clear bell-shaped curve, and the Normal P-P Plot shows that observed residuals closely follow the diagonal line of expected probability.

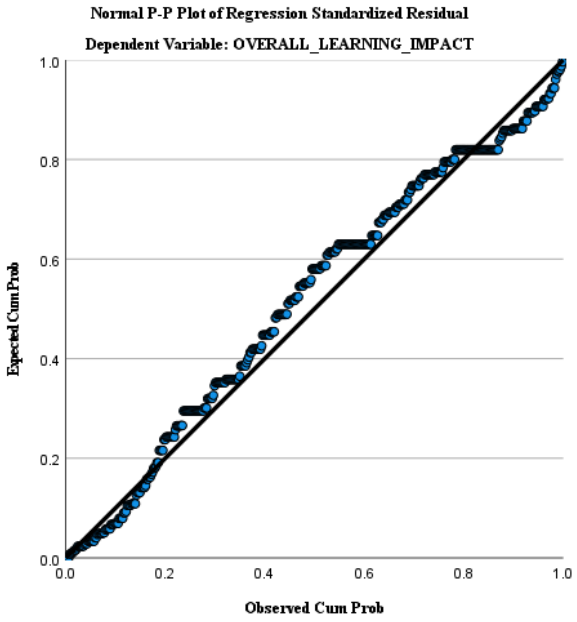

Figure 3 Normal P-P Plot of Regression Standardized Residuals for Overall Learning Impact

These diagnostics verify that the model successfully meets the fundamental assumptions of normality and linearity. Consequently, the values for the Adjusted R Square and the coefficients can be considered stable, unbiased estimates that accurately reflect the student population under study.

4.3 Result of Hypothesis 3:

A negative correlation exists between technical barriers (such as weak internet access, limited devices, and power stability) and the perceived effectiveness of digital learning programs.

The Technical Structural Barrier Analysis

The descriptive statistics of the structural obstacles support Hypothesis 3, that there is a strong negative relationship between the structural barriers and the teaching effectiveness. These factors all work together to show the Digital Divide as part of the study.

Table 4 Mean Scores of Technical Barriers in Digital Learning

Technical Barrier	Mean	Std. Deviation
Barrier internet	3.71	1.266
Barrier devices	2.85	1.197
Barrier electricity	3.31	1.114

As shown as table 4), Descriptive statistics of Technical Barrier Occurrence (n = 433)

Scale: 1 = Never, 5 = Always

Internet Instability (M=3.71): The most critical barrier is rated at a high level, and it is the instability of the internet. This common disruption is a critical changing factor interfering with the positive relationship between digital tool usefulness and student involvement, which is the steady flow needed to make live digital learning easier.

Electricity Instability (M=3.31): Operating with a medium frequency, regular power failures in major hubs such as Yangon and Mandalay cause temporary learning blackouts, which weaken the steady flow needed to support live digital learning.

Devices Limitations (M=2.85): Although the least common problem, the medium score indicates a quality problem. The use of smartphones, rather than laptops, implies that even though there is access, there is a hardware limit, which is a basic cause of the success of learning and thus affects Perceived Ease of Use (PEOU).

Analytical Synthesis

This implies that although access exists, the effectiveness of the access is limited by the hardware, and thus affects Perceived Ease of Use (PEOU). Using the Technology Acceptance Model (TAM), the high rate of such disruptions increases a feeling known as Technical Anxiety that negatively impacts the plan of a student to use digital platforms.

4.4 Result of Hypothesis 4:

Institutions utilizing hybrid learning models report a higher perceived demand for and uptake of EdTech tools compared to institutions using fully online or fully in-person models

To evaluate Hypothesis 4, a regression analysis was conducted to determine the effect of the institutional shift on the uptake of digital tools

Table 5 Regression Analysis of Institutional Shift Factors on EdTech Tool Variety

Predictor	B	SE	β	p-value
Need for Digital Platforms	0.405	0.076	0.365	< 0.001
Investment in Technology	0.361	0.074	0.335	< 0.001
Constant	0.723	0.312	—	0.022

Model Fit: $R^2 = 0.366$ (Adjusted $R^2 = 0.359$)

The trend of institutional change into hybrid models is a powerful indicator of the variety of EdTech tools, which explains 38 percent of the variance. The data demonstrates that teachers greatly increase the use of digital tools as the perceived need for the platforms and institutional investment grows. This offers great backing to Hypothesis 4, which ascertains that the greater the integration of hybrid models, the greater the technology uptake is guaranteed.

5. Discussion

The evidence presented by the research shows that the digital transformation of the educational sector in Myanmar is a major reason for student engagement, even though this is balanced by organizational limitations. The statistical support of Hypothesis 2 proves that digital tools explain the difference in student satisfaction with learning by 18.3 percent (with the strongest predictor being Class Participation with 0.209 and a p-value below 0.001). These findings match well with the Technology Acceptance Model (TAM), which highlights great advantages like geographical flexibility and the happy possibility of learning at a self-paced speed using recorded material on platforms like Zoom and Google Classroom.

Nonetheless, as the Digital Divide Theory suggests, technical barriers, specifically internet instability (M=3.71) and electricity outages, are identified as the causes of "Technical Anxiety" in the study, which naturally reduces the effectiveness of learning. Moreover, the evidence in support of Hypothesis 4 suggests that the institutional change to hybrid models is a very effective part of the EdTech market, as it explains 38% of the variance in tool adoption.

From a digital business perspective, these findings indicate that the "Perceived Usefulness" of EdTech in Myanmar is driven by active interaction rather than just content delivery. Consequently, for EdTech startups and developers to be successful in this market, they must prioritize high-engagement features—such as real-time polling and collaborative breakout rooms—that capitalize on the proven link between participation and learner satisfaction. Furthermore, the recurring "learning blackouts" caused by infrastructure gaps (M=3.71 for internet and M=3.31 for electricity) suggest a significant market opportunity for "offline-first" or low-bandwidth platforms specifically tailored to survive Myanmar's structural challenges. By shifting focus from simple hardware access to human-centric support and localized technical solutions, the EdTech sector can create a more resilient ecosystem that aligns both educational goals and commercial sustainability.

Beyond immediate market entry, the high correlation between institutional hybrid adoption and tool variety indicates that the most sustainable digital business models in Myanmar will be those that offer "flexible ecosystems" rather than standalone products. As the education sector evolves, the competitive advantage will likely shift toward platforms that can integrate seamlessly with existing institutional workflows while remaining resilient to infrastructure volatility. This suggests that future EdTech investments should not only focus on the software itself but also on building robust data-driven insights that help institutions monitor student engagement during "learning blackouts." By creating a data loop between students, teachers, and administrators, digital businesses can provide the necessary evidence to justify continued investment in digital transformation, even in a resource-constrained environment. This holistic approach ensures that modernization is not just a temporary fix for current crises but a permanent, commercially viable upgrade to Myanmar's educational landscape.

The open-ended survey answers provide comments that give a human explanation for the numbers. Although the data show that tools helped students feel better about their learning (Hypothesis 2), students said the main reason is the ability to learn "anytime, anywhere" and access information quickly. However, Technical Barriers (Hypothesis 3) tend to spoil these benefits. Bad internet and power cuts were not just small issues; students and teachers called them "learning blackouts" that stop the lesson completely. Most importantly, the feedback shows that even though schools are changing to hybrid models (Hypothesis 4), the secret to success is how well the teacher knows how to use the tools (Hypothesis 5). Everyone agreed that the skill of a teacher is more important than just having the equipment. They suggested that the best way to fix the problems caused by the digital divide is through practical, hands-on training.

The on-site conditions in Myanmar are very complicated. The benefits of using digital tools are constantly interrupted by ongoing system problems, common power outages, and unstable internet cause learning blackouts, which proves the digital divide theory and leads to technical anxiety. Although statistics show that digital tools and hybrid models help students participate, just having the hardware will not guarantee success. According to the comments, the key to fixing these technological hurdles is the human side of teacher pedagogy. In the end, it is the skill of teachers working in these difficult on-site conditions that makes modernization successful, rather than just having access to technology.

6. Conclusion

This study demonstrates that digital transformation has enhanced student engagement and satisfaction in Myanmar's education sector, but its effectiveness depends on more than technological access alone. Digital tools contribute positively to learning satisfaction, particularly by increasing class participation and enabling flexible, self-paced learning. These findings align with the Technology Acceptance Model; however, persistent infrastructural challenges especially unstable internet and electricity outages-confirm the Digital Divide Theory as technical disruptions create anxiety and weaken learning outcomes.

Research findings highlight the importance of institutional adaptation, with hybrid learning models explaining a substantial share of variance in technology adoption. While these models represent a meaningful step toward classroom modernization, qualitative responses reveal their vulnerability to on-site conditions. Students and teachers described frequent "learning blackouts" that interrupt instruction entirely, underscoring that organizational change alone cannot offset systemic infrastructure limitations.

Most critically, the findings show that teacher pedagogy is the key determinant of successful digital learning in Myanmar. Even in constrained environments, skilled teachers are able to mitigate technological challenges through adaptive instructional practices. As a result, efforts to modernize education should prioritize sustained, practical teacher training alongside technological investment. In this context, educational progress is driven not by hardware availability, but by human capacity to use technology effectively under challenging conditions.

7. Acknowledgements

I would like to express my sincere gratitude to my supervisor, Dr. Bruce Weeks, for his valuable guidance, encouragement, and continuous support throughout this research. I am also thankful to Rangsit University (International College) for providing the academic environment and resources needed to complete this study. My heartfelt appreciation goes to all the teachers and students who generously participated in the survey and shared their experiences, making this research possible. I would also like to thank my family and friends for their patience, motivation, and emotional support during this journey. Finally, I am grateful to everyone who contributed directly or indirectly to the successful completion of this research.

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