An Exploration of Technical Issues Faced by Students in General Education Courses at The Office of General Education and Innovative Electronic Learning, Suan Sunandha Rajabhat University

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Abstract

This study about technical issues encountered by students in online, on-site, and on-demand for general education courses at Suan Sunandha Rajabhat University. Using quantitative research with a sample of 400 undergraduate students were analyzed through mean, percentage, standard deviation, and correlation techniques.

Results show students experienced technical problems at a high level, particularly unstable internet connectivity ($\bar{x}$ = 4.32), audio - visual disruptions ($\bar{x}$ = 4.10), and device incompatibility ($\bar{x}$ = 3.95). These issues significantly impacted learning, especially content accessibility and overall learning effectiveness.

The study recommends strengthening digital infrastructure, improving system usability, and providing technical support and training to enhance the quality of general education learning environments.

Keywords: Technical Issues, Online Learning, General Education

1. Introduction

In the digital era, the integration of technology into teaching and learning has become a crucial component of higher education. The Office of General Education and Innovative Electronic Learning,Suan Sunandha Rajabhat University is responsible for managing large-group general education courses across online, on-site, and on-demand formats. These learning environments heavily on digital platforms, internet connectivity, and various technological tools to ensure effective instructional delivery. (Chirayueng, J. 2023)

However, the rapid expansion of technology-based instruction has revealed persistent technical issues that hinder students' learning experiences.Problems include unstable internet connections, device incompatibility, complex system interfaces, and audio-visual disruptions during live instruction such as challenges directly affect students' ability to access course materials, participate actively, and achieve expected learning outcomes. (Bualak, P. 2022)

Technical problems not only interrupt instructional flow but also impact learning quality and student satisfaction. In the context of general education courses, where large cohorts and diverse learning needs are present, these issues can disrupt teaching operations and create inequity in learning access. Recognizing these recurring challenges, the University emphasizes

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the importance of systematically examining technical barriers as part of its Routine to Research (R2R) initiative to improve instructional quality. (Phiphatsorn, W. 2018)

This study explores the types, severity, and consequences of technical issues encountered by students in general education courses. By identifying root causes and assessing their effects on learning performance, the findings aim to provide evidence-based guidance for improving the digital learning environment and strengthening the effectiveness of general education management in the 21st century. (Gray, D. E. 1987)

2. Research Objectives

This research study was aimed to

1) To explore the technical issues encountered by students in online, on-site, and on-demand general education courses at Suan Sunandha Rajabhat University

2) To analyze the underlying causes of technical problems that affect students' learning experiences and overall learning performance.

3) To propose practical measures and solutions that can be applied to improve teaching and learning efficiency and enhance the digital learning environment for general education courses.

3. Conceptual Framework

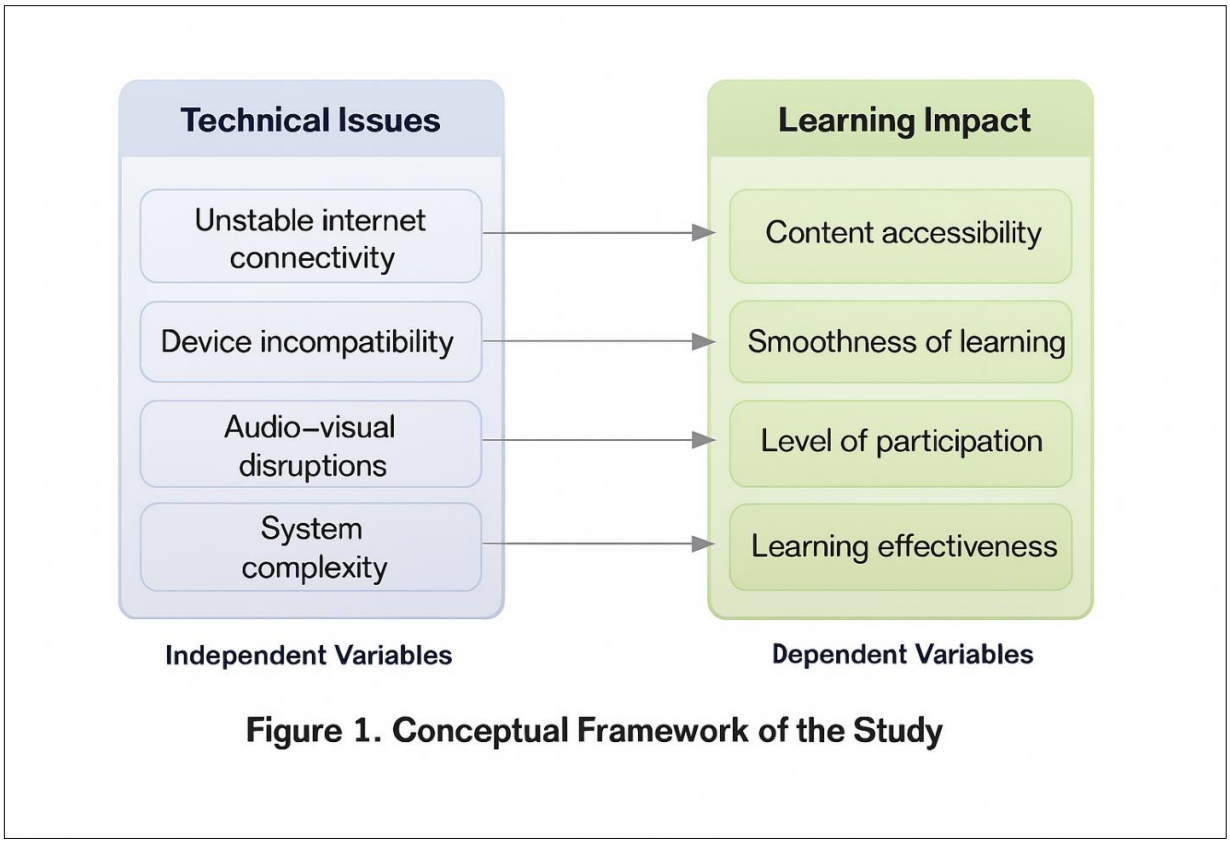

Figure 1. Conceptual Framework of the Study

The conceptual framework of this study is based on the relationship between technical issues encountered by students (independent variables) and their impact on learning (dependent variables) within general education courses. The framework examines how different forms of technical problems affect students' access to content, participation, and overall learning effectiveness. (Phimwiset, S. 2024).This framework illustrates how technical issues directly influence students' learning experiences across multiple dimensions.

4. Methodology

The research methodology of this research focuses on 5 steps of the precess of research: research objectives, data collection and data analyzing, findings and discussion and conclusion.The best approach to was the use of quantitative. The population of this study consists of undergraduate students enrolled in general education courses at Suan Sunandha Rajabhat University.However, by using Taro Yamane (1976), the proper sample size was about 400.

Data were collected using an online questionnaire, which was divided into two parts:

Part 1: General information of respondents, including gender, academic year, faculty/college, and devices used for learning.

Part 2: Technical issues and learning impact. This section consisted of items measuring levels of technical problems - such as unstable internet connection, audio–visual disruptions, device incompatibility, and system complexity - and their effects on content accessibility, participation, and learning effectiveness. All items were rated on a 5-point Likert scale, interpreted as follows: (Piper, A. 1978)

5 = Very High

4 = High

3 = Moderate

2 = Low

1 = Very Low

Statistical analyses included the calculation of frequency, percentage, mean, and standard deviation. Additional analyses such as t-test, and person's correlation were applied to examine differences and relationships between technical issues and learning impact.

5. Result

The results of this study are presented in two parts: (1) The types and severity of technical issues encountered by students, and (2) The impact of Technical issues on learning performance in general education courses.

1. Types and Severity of Technical Issues

Table 1 presents the mean scores and standard deviations for the technical issues experienced by students during online, on-site, and on-demand learning. The overall level of technical problems was found to be **High**.

Technical Issues	Mean	S.D.	Interpretation
Unstable internet connectivity	4.32	0.85	Very High
Audio–visual disruptions	4.10	0.88	High
Device incompatibility	3.95	0.92	High
System complexity / platform difficulty	3.87	0.79	High
Overall	**4.06**	**0.86**	**High**

Interpretation: The highest-rated issue was unstable internet connectivity ($\bar{x}$ = 4.32), followed by audio - visual disruptions ($\bar{x}$ = 4.10). System complexity received the lowest mean score, though it still ranked within the high level of severity.

2. Impact of Technical Issues on Learning

Table 2 summarizes students' perceptions of the impact of technical issues on their learning. The overall impact level was **High.**

Learning Impact Factors	Mean	S.D.	Interpretation
Content accessibility	4.15	0.81	High
Smoothness of learning	4.05	0.82	High
Level of participation	3.98	0.76	High
Learning effectiveness	4.12	0.84	High
Overall	**4.08**	**0.81**	**High**

Interpretation: Students reported that technical problems most strongly affected content accessibility ($\bar{x}$ = 4.15), followed by learning effectiveness ($\bar{x}$= 4.12). Participation levels were moderately affected but still within the high-impact category.

3. Summary of Results

1. Students experienced technical issues at a high level, with unstable internet connectivity being the most frequent problem.

2. Technical problems significantly affected learning, particularly access to learning content and overall learning effectiveness.

3. A statistically significant relationship was found between technical issues and learning impact, confirming that technical barriers hinder students' educational experiences across all formats - online, on - site, and on-demand

6. Discussion

The results of this study indicate that students encountered technical issues at a high level across multiple learning formats, including online, on - site, and on - demand instruction. The most prevalent issue - unstable internet connectivity - aligns with prior research highlighting connectivity as a critical determinant of learning continuity in technology-driven environments. Audio–visual disruptions and device incompatibility further contributed to learning

interruptions, reflecting similar findings in studies on digital learning barriers within higher education. (Suthammai, T. 2021)

The strong correlation between technical issues and learning impact emphasizes the extent to which technological readiness influences learner success. High mean for content accessibility and learning effectiveness suggest that technical difficulties limit students' ability to fully engage with course materials and participate actively in learning activities. This is consistent with educational frameworks that recognize technology as a foundational element supporting student-centered and flexible learning.

These findings reinforce the necessity for institutional investment in digital infrastructure, including reliable internet systems, platform optimization, and accessible technical support. Improving system usability and providing targeted training for both instructors and students can help mitigate recurring issues. Moreover, the study underscores the importance of ongoing monitoring and evaluation as part of routine quality assurance efforts in general education management. Addressing these challenges is essential to ensuring an equitable learning experience and enabling students to achieve intended learning outcomes.

7. Conclusion

The findings of this study reveal that students enrolled in general education courses at Suan Sunandha Rajabhat University experienced technical issues at a consistently high level across online, on - site, and on - demand learning formats. The most prominent problem was unstable internet connectivity, followed by audio–visual disruptions, device incompatibility, and system complexity. These issues significantly affected key aspects of learning, particularly content accessibility, the smoothness of learning processes, and overall learning effectiveness.

The analysis further demonstrated a statistically significant correlation between the severity of technical issues and their impact on learning outcomes. This confirms that technical obstacles pose a substantial barrier to effective learning within the digital learning environment. The results need institutional improvements in digital infrastructure, user-friendly learning platforms, and timely technical support to ensure equitable and uninterrupted access to learning for all students.

Overall, the study underscores the importance of addressing technical challenges as part of ongoing efforts to enhance the quality of general education management and to support learner success in technology-enhanced learning environments. (Chantharak, K. 2022)

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References

Chantharak, K. (2022). Digital-age online teaching management: Problems and guidelines for undergraduate learners. Suan Sunandha Rajabhat University.

Chirayueng, J. (2023). Development of 21st century skills through online and blended learning. Faculty of Education, Suan Sunandha Rajabhat University.

Bualak, P. (2022). Development of analytical thinking skills using STAD-based learning among secondary school students. Suan Sunandha Rajabhat University Demonstration School.

Phiphatsorn, W. (2018). Management of online teaching in general education: A case study of Suan Sunandha Rajabhat University. Journal of Educational Research and Development, 10(2), 15–28.

Phimwiset, S. (2024). Results of using online learning techniques to enhance participation among university students. Journal of Educational Administration, 22 (1), 45 - 60.

Suthammai, T. (2021). Use of digital technology to enhance the efficiency of instruction in general education courses. Faculty of Science and Technology, Suan Sunandha Rajabhat University.

Sukjai, K. (2025). Development of online teaching management through the R2R process: A case study of Suan Sunandha Rajabhat University. Proceedings of the 15th R2R National Conference.

Gray, D. E. (1987). Theoretical perspectives on learning and teaching. Routledge.

Good, T. L. (1973). Classroom instruction and learning outcomes. Harper & Row.

Piper, A. (1978). Educational systems and cost effectiveness. Cambridge University Press.