



Evaluation of the impact of integrating technology into the learning process of primary education students at Tan Trao University

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Abstract

This article is based on the directives of the State, the Ministry of Education and Training, Tan Trao University, and the practical implementation of applying information technology in teaching in the Primary Education. Its aim is to evaluate the impact of integrating technology into the learning process of Primary Education students at Tan Trao University. By conducting a survey of 100 students majoring in the Primary Education using 11 questions, the author assesses the results, highlights advantages and challenges, and proposes solutions to enhance the integration of technology into the learning process of Primary Education students at Tan Trao University, aiming to ensure the quality of education.

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1. Introduction

Resolution No. 29 on “Comprehensive Innovation of Education and Training” issued by the Central Committee of the Party (11th term) emphasizes: Continuing the strong innovation of teaching and learning methods in a modern direction, promoting active and creative engagement, and applying the knowledge and skills of learners. In order to enhance the effectiveness of teaching, the Education sector is dedicating significant attention and investment to the integration of information technology in general and specifically educational software into the teaching process [2].

To meet the demands of innovation and adapt to the new normal conditions, the Project for Enhancing the Application of Information Technology (IT) in the management and support of teaching and scientific research activities, contributing to the improvement of the quality of education and training in the period 2016-2020, with a focus on the year 2025, clearly stated: “Enhance the application of IT to promote the innovation of content, teaching methods, testing, evaluation, scientific research, and management at educational and training institutions within the national education system” [11]. IT is one of the significant tools that bring advantages in innovating school management, innovating teaching methods, and attracting students to actively and independently engage in learning... The use of software in teaching activities is also a requirement in innovating teaching methods to actively engage students in activities with the assistance of modern teaching tools.

In order to meet the demands for innovative teaching methods aimed at enhancing quality and adapting to the new normal conditions (prior to the Covid-19 pandemic), Tan Trao University, in general, and the Primary Education in particular, have provided guidance and implemented information technology in teaching. This is clearly demonstrated through instructional documents, technology training activities for both lecturers and students, and monitoring to oversee the implementation of information technology in teaching. Preliminary results have observed a transformation in the teaching methods of lectures before, during, and after classes. Students are more enthusiastic and intrigued by this innovation.

The article is based on instructional documents and practical implementations carried out by the leadership of Tan Trao University and the lec of the Primary Education department. The aim is to assess the impact of integrating technology into the learning process of primary education students at Tan Trao University.

2. Content

2.1. Educational trends in the digital age impacting the integration of technology into the learning process

Globally, the application of information technology in education has been a matter of early concern, particularly in developed countries. The National Software - Coordination Unit (NSCU) was established as early as the years 1984, 1985 to provide computer education programs for secondary schools. Various subjects have incorporated educational software, such as arts, commerce, economics education, English, geography, health, history, mathematics, music, religion, natural sciences, social sciences, and special education ^[10].

In 2009, at a research institute in Turkey, authors Cavas, Bulent; Cavas, Pinar; Karaoglan, Bahar; and Tarik Kisha conducted a study on teachers' attitudes towards IT in education. The integration of IT into education is a significant concern in many countries. Recently, the Ministry of Education in Turkey has also made significant financial efforts to implement IT into the teaching and learning environment ^[3].

In 2010, authors Naser Jamil Al-Zaidiyeen, Leong Lai Mei, and Fong Soon Fook conducted a study in Jordan with teachers to assess their level of technology integration in classrooms. The research findings indicated that teachers had a low level of IT usage for educational purposes, and the results highlighted the need for further consideration regarding the utilization of IT for educational objectives compared to the current state ^[10].

In Vietnam, higher education in the era of digital technology has become increasingly popular due to the explosion of the internet and the availability of modern technological devices for learners such as computers and smartphones. Recognizing the role of IT in education, various instructional documents have been issued, including: Circular 12/2016/TT-BGDĐT dated April 22, 2016, by the Ministry of Education and Training, which regulates the application of information technology in management and online training; Decision 117/QĐ-TTg 2017 by the Prime Minister regarding the Project for Enhancing the Application of Information Technology in management, support for teaching-learning activities, and scientific research to enhance the quality of education and training in the period 2016-2020, with a focus on the year 2025 ^[11]; Decision number 4919/QĐ-BGDĐT approving the plan for information technology application, e-government development, and network information security assurance for the period 2021-2025 by the Ministry of Education and Training; Circular 09/2021/TT-BGDĐT which regulates the management and organization of online teaching in both regular and continuing education institutions; Official Dispatch 4095/BGDĐT-CNTT dated September 20, 2021, providing guidance on implementing IT tasks and education statistics for the academic year 2021-2022, among others.

To comply with the directives from higher authorities, Tan Trao University has issued the following instructional documents: Decision No. 152/QĐ – ĐHTTr dated March 26, 2020, on the implementation of distance learning to cope with the Covid-19 pandemic ^[5]; Decision No. 127/QĐ – ĐHTTr dated February 22, 2021, introducing regulations on online education at Tan Trao University ^[6];... As a result, the

University has organized training sessions for staff and faculty members on utilizing information technology to fulfill their tasks.

In accordance with the leadership's guidance at Tan Trao University, the lecturer of the faculty of Preschool and Primary Education, in general, and specifically the lecturer of the Primary Education, have enhanced the application of information technology in teaching. Lecturers have innovated teaching methods by: combining direct teaching with online teaching, creating electronic lectures, digitizing learning materials, establishing links to electronic libraries, etc., all aimed at facilitating students' access to lectures before, during, and after classes.

For instance, lecturers have utilized the E-learning format in their teaching. Both lecturers and students can participate in online classes through the system using computers, tablets, or smartphones with internet connectivity ^[1, 4, 8]. Upon logging into the system, the virtual space is organized like a classroom. Lecturers can directly teach students, assign tasks, store lectures, learning materials, etc., in various formats such as Word, PDF, video, and more. Students can attend live online lectures or study at their convenience, submit assignments to instructors, engage in group discussions, take quizzes (multiple-choice, essay), and more. Additionally, several software applications like PowerPoint, Microsoft Teams, Zoom, etc., are used by lecturers for online teaching due to their user-friendly interfaces and integration of features tailored to teaching activities. In the era of digital technology, learners using integrated technology for learning could be referred to as digital learners, instructors as digital teachers, and the learning-teaching environment as a digital environment ^[9, 12, 13, 14].

2.2. Surveying the impact of integrating technology into the learning process of primary education students at Tan Trao University

2.2.1. Survey purpose

The survey aims to evaluate the impact of integrating technology into the learning process of primary education students at Tan Trao University. The goal is to identify advantages and limitations, and provide solutions to enhance the quality of applying information technology in teaching.

2.2.2. Survey participants

To assess the effectiveness of integrating technology into the learning process of primary education students at Tan Trao University, I conducted a survey among 100 students from two academic cohorts, K8 Primary and K9 Primary.

2.2.3. Survey Methodology

I employed a Google form questionnaire containing 11 questions to collect data. The survey was conducted using this Google form, and the recorded results will serve as the basis for observations and evaluations.

2.2.4. Survey Content

The survey involved 100 students and consisted of 11 questions related to evaluating the impact of technology integration on the learning process of primary education students at Tan Trao University. The survey questions are as follows:

Table 1: Survey results on the impact of integrating technology into the learning process of primary education students at Tan Trao University

No.	Question	Result
1	Have you experienced using technology in the process of learning in the Primary Education? (Yes/No)	100% of students responded "Yes".
2	In your opinion, does the integration of technology into the learning process have a positive impact on your learning experience? (Very Positive/Positive/Neutral/Not Positive/Not Sure)	<ul style="list-style-type: none"> ▪ 15%: Very Positive ▪ 55%: Positive ▪ 20%: Neutral ▪ 10%: Not Positive ▪ 0%: Not Sure
3	Have you used technology to access study materials (e.g., e-books, online resources)? (Very Frequently/Frequently/Neutral/Infrequently/Never)	<ul style="list-style-type: none"> ▪ 35%: Very Frequently ▪ 57%: Frequently ▪ 7%: Neutral ▪ 0%: Infrequently/Never
4	Has the way technology has been integrated into teaching helped you understand the lessons better? (A Lot/Many/Neutral/Few/Not at All)	<ul style="list-style-type: none"> ▪ 20%: A Lot ▪ 50%: Many ▪ 30%: Neutral ▪ 0%: Few/Not at All
5	Has technology helped you interact and participate more actively in learning activities? (A Lot/Many/Neutral/Few/Not at All)	<ul style="list-style-type: none"> ▪ 23%: A Lot ▪ 57%: Many ▪ 20%: Neutral ▪ 0%: Few/Not at All
6	Do you feel that integrating technology into learning has made the learning process more flexible? (A Lot/Many/Neutral/Few/Not at All)	<ul style="list-style-type: none"> ▪ 30%: A Lot ▪ 60%: Many ▪ 0%: Neutral/Few/Not at All
7	In your opinion, has technology helped you develop better self-study and time management skills? (A Lot/Many/Neutral/Few/Not at All)	<ul style="list-style-type: none"> ▪ 25%: A Lot ▪ 55%: Many ▪ 20%: Neutral ▪ 0%: Few/Not at All
8	Do you feel that using technology has helped you access a more diverse range of learning content (e.g., videos, audio, interactive applications)? (A Lot/Many/Neutral/Few/Not at All)	<ul style="list-style-type: none"> ▪ 32%: A Lot ▪ 56%: Many ▪ 12%: Neutral ▪ 0%: Few/Not at All
9	Do you feel that using technology in your studies has improved your technology skills? (A Lot/Many/Neutral/Few/Not at All)	<ul style="list-style-type: none"> ▪ 35%: A Lot ▪ 55%: Many ▪ 0%: Neutral/Few/Not at All
10	In your opinion, can integrating technology into the learning process help you develop skills for working and interacting in a technological environment in the future? (Very Likely/Likely/Neutral/Unlikely/Not Sure)	<ul style="list-style-type: none"> ▪ 30%: Very Likely ▪ 60%: Likely ▪ 0%: Neutral/Unlikely/Not Likely/Not Sure
11	Have you encountered any challenges or difficulties when using technology in your studies? (Please describe)	<ul style="list-style-type: none"> ▪ Lack of connected computers. ▪ Limited internet connectivity ▪ Lack of IT skills

3. Results

Based on the data you provided, we can observe the students' feedback regarding the integration of technology into the learning process in the Primary Education at Tan Trao University. Here is a brief analysis of the results:

- Experience with technology usage: 100% of the students have experienced using technology in their learning process. This indicates that the majority of students have been exposed to technology in their studies.
- Positive impact of technology integration: 70% of students evaluated the positive impact of integrating technology into the learning process. Among them, 15% found the impact to be very positive, and 55% found it to be positive.
- Use of technology for accessing learning materials: The majority of students (92%) have used technology to access learning materials. Specifically, 35% use it very frequently, and 57% use it frequently.
- Understanding lessons through technology integration: 70% of students positively assessed how technology integration into teaching helps them understand the lessons. Among them, 20% stated that it helps them understand the lessons very much.
- Interaction and active participation: The majority of students (80%) reported that technology integration has helped them interact and participate more actively in learning activities.
- Flexibility in the learning process: 90% of students have perceived flexibility in the learning process through technology integration. Among them, 30% felt a high level of flexibility, and 60% felt a moderate level of flexibility.
- Developing self-learning and time management skills: Students are proactive and flexible in their learning anytime, anywhere.
- Diversified access to learning content: 88% of students felt that technology integration has allowed them to access a more diverse range of learning content. Specifically, 32% felt a high level of diversity, and 56% felt a moderate level of diversity.
- Improving technology skills: The majority of students (90%) indicated that using technology has improved their technology skills. Among them, 35% stated significant improvement, and 55% stated moderate improvement.
- b. Discussion

- Advantages:
- Increased interaction and proactive learning: Technology allows the creation of interactive online learning environments, encouraging active student participation. Online forums, comments, and discussion groups facilitate interaction among students and instructors, promoting idea exchange and information sharing.
- Diversification of learning content: Technology enables the delivery of learning content in various forms such as text, videos, audio, interactive applications, and multimedia images. This enriches the learning experience, catering to diverse learning styles.
- Enhanced self-learning and time management skills: Technology empowers students to manage their study time through online access to materials, lecture reviews, and personalized quizzes. This fosters the development of self-learning and effective time management.
- Improved academic performance: Technology provides tools for learning support, such as online teaching and learning software, assessment and testing applications. This enables students to easily monitor their learning progress, identify weaknesses, and enhance their academic performance.
- Encouragement of flexible learning: Technology removes constraints of time and space in learning. Students can access learning content remotely, allowing them to study anytime and anywhere, particularly beneficial for those with limited study time.
- Development of technology skills: Integrating technology in learning helps students develop skills for working with online tools, applications, and software. These skills are essential for the future as technology plays a crucial role in various fields.
- Exploration of new learning methods: Technology opens opportunities for applying innovative learning methods, such as experiential virtual reality-based learning, gamified learning, or online collaborative learning.

4. Limitations

- Varied technology literacy among students leads to differing usage abilities.
- Limited infrastructure and unstable internet connections.
- Low information security risks.

Solutions for integrating technology into the learning process for Primary Education students at Tan Trao University

1. Technology skill enhancement for students and faculty.
2. Development of a compatible online learning platform suitable for students and the university's infrastructure.
3. Improvement of infrastructure and development of appropriate e-learning materials.
4. Enhancement of security measures and data management.

5. Conclusion

The integration of information technology in education has transformed the way lecturers teach and students learn, providing an online platform for teaching and learning, diversifying content in lectures, enhancing student interaction and engagement, and personalizing learning activities. Integrating technology into the learning process for Primary Education students at Tan Trao University has

brought about numerous positive impacts and the potential for improving the learning experience, enhancing academic performance, and developing skills for students. However, it is crucial to address and overcome challenges and limitations to ensure fairness and effectiveness in the integration of technology.

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