

The Effectiveness of Technological Education in Preparing Students of the Faculty of Education from Their Point of View: Irbid National University as a Model

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Abstract. This study aimed to explore the effectiveness of technological education in preparing students of the Faculty of Education from their own perspectives, using Irbid National University as a model. The qualitative approach was adopted due to its appropriateness to the objectives and nature of the study, and interviews were conducted with ten students from the Faculty of Education at Irbid National University. Through the analysis of the interviews, a set of main and sub-traits was identified. The study revealed that the methods of technological education employed in preparing education students were reflected in three main traits: The current reality of technological preparation, the challenges and difficulties facing technological preparation, and students' proposals from their point of view. These main traits included a total of eleven sub-traits. The study indicates that the educational technology methods used in preparing students of the Faculty of Education can be summarized in several traits that could be enhanced through the involvement of concerned parties. The proposed recommendations could be considered in efforts to activate and advance the educational process.

1. INTRODUCTION

Recently, the world has witnessed the emergence of modern innovations across various fields, including education, and their integration within the learning process. This aims to achieve more efficient and effective education. Given the challenges imposed by the era of technology, information, and digital openness affecting all societies including school communities represented by students it has become essential to prepare education students with technological readiness to enhance the efficiency and quality of education, as well as save time and effort, which will ultimately improve the educational process through multiple technologies.

Jacobsen, Clifford, and Friesen (2002) confirmed that school classrooms are advancing technologically and differ from what they were previously, as technology has been integrated with education to facilitate the exchange of digital information, enabling access to computing devices and digital connectivity for all students. Abu Qutta (2024) emphasized that the employment of educational technology in the learning process has become an inevitable necessity, especially given the diverse needs required to adopt information and communication technologies by educational institutions. Graziano, Foulger, Schmidt-Crawford, and Slykhuys (2017) indicated that teachers' application of educational technology and their use of certain educational websites and electronic programs will help develop their ability to practice effective technological teaching by providing interactive simulations that make complex concepts easier and more engaging (Kalyani, 2024).

Technological education is a process through which knowledge, experiences, and information are delivered using modern technological means (Ben Meshish, Jelani & Bakrawi, 2019). This is supported by Admirala, Vogtep, Kraneburg, Kosterp, Smita, Weijersed, and Luckhorst (2017), who stressed the importance of integrating technology into education and teaching by increasing training on the use of technological models and programs within the university curriculum. Additionally, the preparation of future teachers must be suitable for the ongoing technological educational events to enhance the interaction efficiency between teachers and students (Al-Shafie & Shehrazad, 2021). This can be achieved by including in education college programs the necessary skills and competencies according to modern technological standards (Al-Hamar & Hassan, 2023), so that students become self-directed through their educational experiences, with autonomy and control over their learning methods (Monserate, 2018).

Therefore, this study arises from the importance of preparing education students to teach a new type of knowledge that absorbs the vast quantity of educational technology, information, and communication technology.

1.1. Objective of the Study

This study aimed to identify the effectiveness of technological education in preparing students of the Faculty of Education from their own perspective, using Irbid National University as a model.

1.2. Previous Studies

Several studies and research efforts have addressed topics related to this study. Among them is the study by Abu Mutlaq and Khalifa (2025), which aimed to investigate the level of digital skills among students at Al-Aqsa University. The researchers employed a descriptive-analytical methodology, with a sample consisting of 54 students from the Department of Educational Sciences (Early Childhood Education). The study tools included an observation checklist to assess digital skills across six domains. Results showed that the overall score of the instrument yielded a relative weight of 42.33, indicating a moderate level of digital skills. The domain of professional participation received the highest relative weight (44.33), compared to the expected average of 75%.

Another relevant study is that of Abu Quta (2024), which focused on the application of information and communication

technology (ICT) in pre-university education institutions through a case study of South Korea. The aim was to explore South Korea's efforts and adoption of ICT at pre-university levels and to develop proposals for implementing ICT in Egypt's pre-university education system. The study used a descriptive-interpretive approach and a case study methodology, relying on governmental data, official reports, academic studies, and other literature. The findings were categorized into three main areas: theoretical results, findings related to South Korea, and findings related to Egypt. Based on these results, the study proposed mechanisms and recommendations for enhancing ICT integration in Egypt's pre-university education system, along with identifying potential challenges.

Rajab's study (2022) explored the conceptual framework of digital transformation and mechanisms to enhance it in university education. It adopted the descriptive-analytical approach, focusing primarily on analyzing literature related to the topic. One of the key findings was that effective digital transformation requires the formulation of robust strategies, adequate institutional readiness, infrastructure development, and overcoming challenges, such as the gap between theoretical frameworks and practical implementation in digital and electronic education.

Similarly, the study by Mohamed (2022) aimed to provide a future vision for developing academic institutions' teacher preparation programs in light of the requirements of digital transformation to ensure effective development. The study presented essential concepts for cultivating a required digital development culture and identified some obstacles to applying digital transformation standards in teacher preparation programs within faculties of education. It also proposed a procedural model based on the requirements of the digital age to enhance such programs.

In contrast, the study conducted by Al-Shafee and Ismail (2019) focused on identifying the obstacles to using educational technology in training students at faculties of education in Sudanese universities. The study aimed to assess the impact of technology integration on modern teaching methods, the enhancement of professional competencies, and the alignment with technological advancements in teacher training programs. A descriptive-analytical method was used, supported by a questionnaire distributed to a randomly selected sample of 150 faculty members from various colleges of education in Sudan. Statistical analysis revealed that university professors had positive attitudes toward employing educational technology to improve performance. However, the student trainees lacked the necessary skills and did not make a systematic effort to utilize educational technology.

The study by Instfjord and Monthe (2016) aimed to integrate digital knowledge into curriculum documents for pre-service teacher training programs in Norway and to raise awareness among teacher educators about the areas of knowledge that should be incorporated into their educational programs. The researchers used a descriptive-analytical approach by developing an analytical framework based on scholarly work to assess the extent of digital competence in three domains: technological proficiency, pedagogical alignment, and social awareness. Through qualitative content analysis, the results indicated a limited presence of technology integration in curriculum documents and a lack of mandatory courses related to technology, suggesting that digital knowledge was not considered a core element in teacher training materials.

Finally, the study by Lemon and Garvis (2016) investigated the self-efficacy levels of pre-service teachers in teaching technology. A quantitative approach was employed using a structured questionnaire administered to pre-service primary school teachers in the Australian states of Victoria and Queensland. The goal was to assess their current technological competence and its relevance to future needs. The results revealed significant variation in the self-confidence and competence of pre-service teachers across different educational tasks. There was also noticeable disparity in technological proficiency among the pre-service teachers in the two states, with many not feeling adequately skilled in various areas of technology use.

1.3. Research Framework

This study sheds light on the current technological programs in preparing students at the Faculty of Educational Sciences at Irbid National University and presents proposals for their technological preparation. It also reviews course curricula in the faculties of educational sciences at some universities, moving away from traditional and unappealing teaching methods from the students' point of view. It was found that there is a deficiency in equipping students with educational technology skills in universities. Therefore, there is a pressing need to reconsider the student preparation programs in faculties of education. Through field observation and reviewing the curricula of the Faculty of Educational Sciences at several universities—which may contain simple and modest courses while lacking effective technological or digital courses—and with the emergence of the digital-native student who is passionate about modern digital technological tools, the need has arisen to focus on the preparation programs of students at faculties of education, particularly at Irbid National University.

It is hoped that this study will contribute to the existing theoretical literature in the fields of student preparation at the Faculty of Educational Sciences at Irbid National University and educational technology. It may also broaden the perspectives of university officials in Jordan regarding modern technological methods in preparing education faculty students, thus enhancing the integration of modern technology in the teaching and learning processes.

2. METHODOLOGY

This study employed a qualitative methodology through interviews with ten students from various disciplines within the Faculty of Educational Sciences at Irbid National University. These students were distributed across the college as follows: (3) Classroom Teacher, (3) Psychological and Educational Counseling, (3) Vocational Education, and (1) Special Education. An interview question guide was developed, and the participants were in their third or fourth academic year.

The study's main research question was:

"What is the effectiveness of technological education in preparing students at the Faculty of Educational Sciences from their perspective, using Irbid National University as a model?"

This main question was broken down into the following sub-questions:

Q1: In your opinion, to what extent do the offered courses at the Faculty of Educational Sciences qualify teachers for the digital age in light of international standards and frameworks?

Q2: What are the main challenges or obstacles students face in keeping up with educational technology at Irbid National University?

Q3: What are the key advantages, in your opinion, of technological preparation for students in the Faculty of Educational Sciences at Irbid National University?

Q4: How would you assess the current state of technological preparation for students at Irbid National University?

Q5: From your perspective, what technological infrastructure and capabilities should the university provide to prepare students in the Faculty of Educational Sciences?

Q6: What are your suggestions for enhancing the digital preparation of students at the university?

2.1. The Results of the Study

The results related to the study question, which stated:

"What is the effectiveness of technological education in preparing students of the Faculty of Education from their perspective at Irbid National University?"

To answer this question, interviews were conducted with participants from the Faculty of Education at Irbid National University. Based on the responses to the interview questions, the answers were categorized into major traits and a number of sub-traits. The results of the data analysis were as follows:

First: Major Traits and Sub-traits

Major Trait 1: The Current State of Technological Preparation of Students.

All ten participants (100%) indicated aspects of the current state of technological preparation for students at Irbid National University, which were categorized into the following sub-traits:

Sub-trait 1: Offered University Courses.

Nine participants (90%) indicated that the courses offered at the college are insufficient for preparing students technologically, as only a limited number of technology-related courses are available.

"Most of the courses offered at the college are educational in nature, with only one or two related to technology."

Sub-trait 2: Digital Competencies of Students.

Eight participants (80%) noted a lack of focus on equipping students with digital teaching competencies such as content organization and design, website development, and effective integration of technology into teaching—skills essential for entering the job market.

"We lack even basic digital competencies; digital teaching skills are almost non-existent."

Sub-trait 3: Digital Access and Connectivity.

Seven participants (70%) pointed out that although access to internet networks is available on campus, it is often unreliable. They also reported only modest mastery of digital access and communication skills taught in some optional or required courses.

"Even the internet sometimes doesn't work when we try to take pre- and post-tests at the university."

Sub-trait 4: Digital Infrastructure.

Six participants (60%) highlighted that the college's infrastructure is not adequately prepared for technological student training. The institution lacks laboratories, network systems, computer devices, and IT services necessary for developing educational software applications.

"Some useful tools like interactive whiteboards are unavailable; even the computer lab is missing."

Second Main Trait: Challenges and Obstacles in Technological Student Preparation.

Nine participants (90%) discussed key challenges they face in being prepared technologically. These were grouped into the following sub-traits:

Sub-trait 1: Lack of Practical Technological Training in Schools.

Eight participants (80%) emphasized the need for students to engage in practical, digital-based training within modern interactive school environments.

"When we go to schools for practical training, it's always in traditional classrooms—there's no training in modern, digital schools."

Sub-trait 2: Lack of Faculty Focus on International Technological Standards.

Seven participants (70%) stressed the importance of faculty staying updated with global technological programs and curricula and implementing them practically and effectively.

"One of the biggest challenges is that our training is far from the global labor market's needs and international standards."

Sub-trait 3: Lack of Financial Support for Technological Readiness

Six participants (60%) emphasized the need for increased financial support to develop student preparation programs that align with local and global market demands.

"The Faculty of Educational Sciences building needs modernization in terms of lighting, technology, and infrastructure—but all this requires significant financial support."

Main Trait three: Students' Suggestions from Their Perspective

This trait was indicated by eight participants, constituting 80%, who emphasized the necessity of considering the proposals they presented for effectively preparing them technologically. This trait was summarized into several sub-traits as follows:

Sub-trait One:

Holding Training Workshops for Students to Activate Their Technological Role.

Seven participants (70%) referred to this sub-trait, highlighting the significant role of conducting training workshops that lean more towards practical applications rather than theoretical aspects, to equip them with the necessary skills for the labor market. Some of their statements included:

"For example, if digital skills development courses were conducted within the university to help us keep pace with the labor market."

Sub-trait Two: Digital Field Training

Six participants (60%) mentioned this sub-trait, indicating the role of effective field training within digital schools employing educational technology, which facilitates the exchange of experiences within the educational process. One statement reflecting this was:

"A suggestion, for instance, is that the university allocates two weeks per subject for digital field application of the theoretical material, making everything electronic."

Sub-trait Three: Enriching the Curriculum of the College of Educational Sciences in All Specializations with a Sufficient Number of Digital Courses.

Five participants (50%) highlighted their need for more courses and modern programs designed to meet their needs and build them into technological educators. One quoted opinion was:

"It is better to increase the courses related to computers and education because we are in an era of development and

technology, and everything is computer-based."

Sub-trait Four: Linking the College of Educational Sciences with the College of Information Technology.

Four participants (40%) noted the effectiveness of exchanging expertise and information between the College of Educational Technology and the College of Educational Sciences through employing modern technologies such as artificial intelligence in the educational process. One statement was:

"Perhaps professors from Information Technology can help us keep up with modern programs and educational technology methods through collaboration between us and them."

3. CONCLUSION

Finally, based on the above results, it was found that Irbid National University - from their perspective - prepares students of the College of Education well theoretically, pedagogically, and practically. However, there is a weakness in their effective and advanced technological preparation in terms of technological skills, competencies, and knowledge.

There are also initiatives and attempts, albeit modest, to prepare students technologically and digitally at the university by teaching them basic fundamentals of traditional software and presenting them on computing devices with modest infrastructure. On the other hand, some optional programs offered by the university may cover this basic information, which the student might not study or learn, thus lacking the experience and sole knowledge that could prepare them technologically, even if modestly.

Therefore, in light of the rapid technological and digital development affecting most aspects of life, and the acceleration of knowledge production and openness to rapid technological knowledge encompassing the entire current generation including students, there is an urgent need to prepare students of the College of Education, the future technological and digital teachers, who bear the responsibility of preparing and equipping modern educational programs and methods with creative thinking in line with the needs of students in this advanced digital era.

3.1. Contribution of the Study

This current study may add to the existing theoretical literature beneficial for researchers in the fields of preparing students at the College of Education at Irbid National University and educational technology. It can also broaden the understanding of university administrators in Jordanian universities regarding modern technological methods in preparing education students, thereby activating the employment of modern technology in teaching and learning processes.

4. RECOMMENDATIONS

- It is necessary to offer university programs and courses that assist in the technological preparation of College of Education students theoretically and practically within global frameworks and standards.
- Activate practical digital application for College of Education students in advanced schools to keep pace with the labor market.
- Organize workshops and technological and digital courses at Irbid National University to effectively prepare its students.

REFERENCES

- Abu Qatta, M. (2024). *Applications of information and communication technology in pre-university educational institutions in the Republic of South Korea: A case study and possibility of benefiting from it in the Arab Republic of Egypt* (Master's thesis). Kafr El-Sheikh University.
- Abu Matlaq, H. K., & Khalifa, O. A. (2025). Level of digital skills among students of Al-Aqsa University. *Journal of Arts, Literature, Humanities and Social Sciences*, (116), 21–40.
- Ben Mshish, Z., Jelali, J., & Bakrawi, A.-A. (2019). *Total quality in delivering technological education in kindergarten* (Doctoral dissertation). Ahmed Draia University - Adrar.
- Al-Hammar, A., & Hasan, M. (2023). Educational technology: An approach to developing education and achieving its quality. *International Journal of E-Learning*, (3), 267–291.
- Rajab, I. M. (2022). Digital transformation in university education: Concept, objectives, and mechanisms. *Journal of Educational Sciences - Faculty of Education in Qena*, 50(50), 54–77. Retrieved from Shamaa
- Al-Shafī'i, A., & Shahrazad, M. T. (2021). International forum: Methods and techniques of using modern technology in the educational process, reality and challenges, importance of modern technology in teaching methods to achieve effectiveness of the educational process. Ahmed Draia University - Adrar.
- Al-Shafie, O., & Ismail, S. (2019). Obstacles to using educational technology in preparing education students in Sudanese universities. *Bahri University Journal for Educational Sciences*, 1(1), 103–134.
- Mohammad, A. (2022). A proposed model based on the requirements of the digital age for developing teacher preparation programs in colleges of education. *International Journal of E-Learning*, 5(3), 1–31.
- Admiraal, W., Vogt, F., Kranenburg, F., Koster, B., Smit, B., Weijers, S., & Luckhorst, D. (2017). Preparing pre-service teachers to integrate technology into K-12 instruction: Evaluation of a technology-infused approach. *Technology, Pedagogy and Education*, 26(1), 105–120. <https://doi.org/10.1080/1475939X.2016.1163283>
- Graziano, K., Foulger, T., Schmidt-Crawford, D., & Slykhuus, J. (2017). Technology integration and teacher preparation: The development of teacher educator technology competencies. In *Society for Information Technology & Teacher Education International Conference* (pp. 2463–2470). Association for the Advancement of Computing in Education (AACE).
- Instefjord, E., & Munthe, E. (2016). Preparing pre-service teachers to integrate technology: An analysis of the emphasis on digital competence in teacher education curricula. *European Journal of Teacher Education*, 39(1), 77–93. <https://doi.org/10.1080/02619768.2015.1100602>
- Jacobsen, M., Clifford, P., & Friesen, S. (2002). Preparing teachers for technology integration: Creating a culture of inquiry in the context of use. *Contemporary Issues in Technology and Teacher Education*, 2(3), 363–388.
- Kalyani, L. K. (2024). The role of technology in education: Enhancing learning outcomes and 21st-century skills. *International Journal of Scientific Research in Modern Science and Technology*, 3(4), 05–10.

- Lemon, N., & Garvis, S. (2016). Pre-service teacher self-efficacy in digital technology. *Teachers and Teaching*, 22(3), 387–408.
<https://doi.org/10.1080/13540602.2015.1058594>
- Monserate, C. A. (2018). Impact of technology on the academic performance of students and teaching effectiveness. *International Journal of Interdisciplinary Research and Innovations*, 6(1), 47–87.