ART & TECHNOLOGY PUBLISHING PTE. LTD.

Contemporary Education Frontiers

2023 Volume 1, Issue 1

The Integration of Educational Technology and Its Impact on Teacher Teaching Performance

Song Zhijiang [1,2]

1 School of Graduate Studies,Adamson University,1000 Metro Manila,Philippines

2 School of Design and Art, Shaoyang University,Shaoyang,422000,China

Abstract

The increasing use of modern educational technology in modern teaching has had a huge impact on educational models and methods. The integration of modern educational technology and traditional educational technology has increased the capacity of learning materials, expanded students' horizons, and provided them with the choice of independent learning, which is the progress of educational technology. Research has shown that the application of educational technology by teachers has a significant positive impact on teacher performance, and there is a mediating effect between teacher ability and teacher satisfaction. Therefore, teachers should continuously improve their educational technology and professional teaching abilities to meet the needs of education and teaching reform in the new era. The final theoretical system has been formed through the analysis and research of existing research results in the academic community, providing theoretical reference value for subsequent research. At the same time, these theoretical research achievements also benefit groups such as students, teachers, managers, and researchers.

Keywords

Educational Technology
Integration
Teacher performance

1. Introduction

1.1. Research background

Various forms of digital teaching platforms have emerged one after another, and a large number of books and electronic resources have been opened up. The teaching mode has been "forced" to change rapidly. The use of modern educational technology in online education has become a necessary way to replace traditional teaching models. Educational technology not only provides access to modern teaching media and other resources, but also facilitates teachers to carry out teaching activities in an efficient and effective manner. It also helps to develop learner centered teaching activities and achieve the best results in the teaching process. The quality of teaching has a huge impact on schools, such as quality management, overall

operation, and student enrollment, which will bring a series of operations to the performance of schools and individual teachers. The following hypothesis is proposed: the integration and application of teacher educational technology has a positive impact on teacher performance.

1.2 The significance of the research

This study aims to reveal the relationship between educational technology and teacher performance. This article adopts a combination of quantitative and qualitative descriptive and exploratory research methods, attempting to quantitatively describe the impact level of educational technology integration and teacher performance through significant differences in variables, in order to propose strategies for improving educational technology and improving performance. This study provides theoretical support for deepening the richness of research achievements in the field of education and promoting the development of theoretical research on educational teaching methods.

2.Theoretical framework

2.1 Literature review

Regarding the integration of educational technology and teaching, you can input “Educational Technology” on CNKI and find 108680 articles. Most papers focus on the combination of educational technology and the classroom, as well as the advantages of educational technology integration and the development trend of educational technology integration.

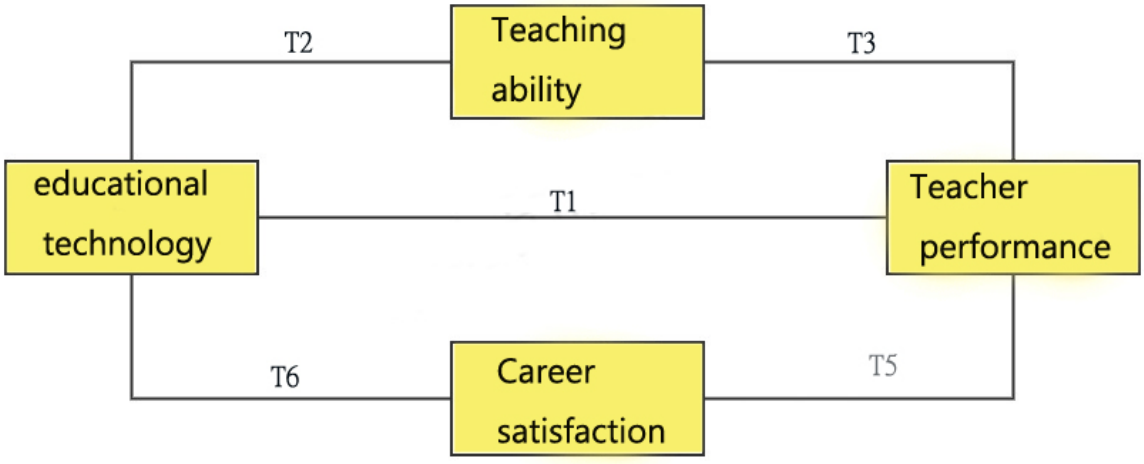
Liu Yanhua (2021) considers the advantages and disadvantages of applying modern educational technology to teaching in terms of technical operation and philosophy. The increasing use of modern educational technology in modern teaching has had a significant impact on educational models and methods. A brief analysis of the advantages and disadvantages of diversified teaching modes is conducted in order to enhance the strengths and avoid weaknesses, so as to better apply modern educational technology to teaching, enhance learning effectiveness, and improve teaching quality.

Li Desheng (2019) proposed to improve the construction and planning of campus networks in the application of modern educational technology in teaching, which can bring convenient and efficient learning and teaching environments to college teachers and students. It brings new cognitive thinking to students. The experience that modern advanced educational technology brings to teachers and students is infinite.

Guo Jing (2019) proposed in his research paper on teacher professional development and personal growth. Only when teachers have a sense of professional happiness can they consider educational work as their pursuit of life value, and can they actively and actively engage in educational work, creatively utilize their talents, and strive to improve teaching technology.

2.2 Theoretical framework

This study mainly focuses on the integration and application of educational technology, as well as the ethical and moral principles that should be followed when applying educational technology. The application of educational technology will face a series of contradictions between humans and machines, as well as between humans. How to correctly handle these relationships is a problem that needs to be addressed in this study. Regardless, the integration of educational technology will inevitably improve teachers’ teaching abilities, thereby promoting more efficient teaching, which is very beneficial for the long-term planning and development of the entire school. The better development of schools has a positive impact on the performance of teachers.



Research framework

3. Research methods

This chapter introduces the research method, research location, survey subjects and sampling, research instruments, data collection procedures, and data analysis of this study.

3.1 Research methods:

Descriptive research is a type of research method that studies the type of problem, design, and data analysis applied to a selected topic. It is a research method used to describe and document, as well as analyze and explain the past and current situation of the topic. This research method does not carry the subjective emotions of the researcher and respects the facts to study, so that the research results can be more authentic and meaningful. This is the reason why I chose this research design.

3.2 Sampling technology

Purposive sampling, also known as purposive sampling. Extract a portion of the sample units from all the samples to be studied. The basic requirement is to ensure that the sampled units have sufficient representativeness for all samples. There are generally three methods for purposive sampling. The first type is simple random sampling, the second type is systematic sampling, and the third type is stratified sampling.

3.3 Data analysis

The data collected during the interview will be encoded and analyzed, and all collected data will be organized. The SPPS version will be used for quantitative analysis of data.

4. Discussion

Teachers' level of technical integration in teaching.

Based on the overall results, technical operations and concepts are moderately integrated in the integration of technology in teaching. This inference is based on the overall average score of 3.27 and further confirmed by the average scores of five different indicators, all of which are interpreted as moderately integrated.

Respondents assessed that teachers have moderately integrated ethical norms into their technology, and the overall average score of 3.44 confirmed this.

As can be gleaned from the table results show that there is a moderate significant effect of technology integration in teaching on the performance of teachers, with a Pearson r value of 0.679. This suggests that integrating technology in teaching can improve the teaching performance of teachers. Further training and development is needed to enhance the technological-pedagogical skills and proficiency of teachers in this area.

Table 1 Technology Operations and Concepts

Technology Operations and Concepts	Mean	SD	Interpretation
1. Use plans to configure software/computer/technology systems and related peripherals in laboratory, classroom cluster, and other appropriate instructional arrangements.	3.24	.88	Moderately Integrated
2 .Work with technology support personnel to maximize the use of technology resources by administrators, teachers, and students to improve student learning.	3.26	.87	Moderately Integrated
3. Suggest policies and procedures concerning staging, scheduling, and security for managing computers/technology in a variety of school/laboratory/classroom settings.	3.28	.86	Moderately Integrated
4. Multimedia incorporation: Many topics can easily be discussed with the help of various multimedia platforms and the content. This also helps students understand concepts better.	3.28	.86	Moderately Integrated
5. student makes use of computer-enabled video teaching-learning resources over mobile applications or web browsers to access content and learn at their own pace.	3.32.	.84	Moderately Integrated
Overall	3.27	.80	Moderately Integrated

Legend: 4.0-3.51:Highly Integrated; 3.50-2.51: Moderately Integrated; 2.50-1.51: Less Integrated; 1.50-1.00:Not Integrated

Table 2 Productivity and Professional Practice

Productivity and Professional Practices	Mean	SD	Interpretation
1. Employ the best professional judgement when dealing with technology related ethics	3.39	.81	Moderately Integrated
2. Outline technology rules and reason for the rules	3.34	.79	Moderately Integrated
3. Develop a summary of effective school policies and classroom management strategies for achieving equitable access to technology resources for students and teachers.	3.41	.76	Moderately Integrated
4. There should be open-mindedness and willingness to learn from colleagues from different backgrounds and specialists	3.41	.75	Moderately Integrated
5. There is a commitment to exploring and understanding the interplay between technology and learning	3.43	.75	Moderately Integrated
Overall	3.40	.71	Moderately Integrated

Legend: 4.0-3.51: Highly Integrated ; 3.50-2.51: Moderately Integrated; 2.50-1.51: Less Integrated; 1.50-1.00: Not Integrated

Table 3 Overall Correlation

Teachers Performance	Pearson Correlation	.679**
Technology Integration in Teaching	Sig(2 tailed) N	.00 200

** Correlation significant at .01 level (2-tailed)

5. Conclusion

5.1 Summary of survey results

The Relationship between Technology Integration and Teaching Performance

According to the research results, there is a moderately significant relationship between integrated technology in teaching and teacher performance. The basis for this inference is that the generated r-value is. 679, and the p-value is equal to. 000, which is lower than the significance level of e.05 set in the study.

5.2 Conclusion

Based on the research findings, it can be concluded that integrating technology into teaching can be a challenging task, especially in monitoring the application of digital technology and resources in the

classroom. Teachers are committed to exploring and understanding the interaction between technology and learning, which can be demonstrated through their continuous efforts to improve skills and try different methods. Projects, seminars, and professional teacher development plans are needed to help teachers better understand how to fully utilize and integrate technology in teaching. The teacher's ability and learning environment are important factors for the successful integration of technology into teaching. Therefore, the support of technical experts can help improve teachers' abilities. Considering that the TPACK framework is a useful tool for teachers to integrate technology into teaching, as it emphasizes the importance of balancing content knowledge, teaching knowledge, and technical knowledge. Teachers are not very familiar with the ethical implications of using technology and making informed decisions, including issues such as privacy, security, and responsible use of digital resources.

References

[1] Cui Xiaofeng (2022)Exploring the consistency between internal and external curriculum planning plans in schools. *Primary and secondary school homeroom teachers.*

[2] Cheng Miao (2022) Monitoring the teaching quality of universities under the integrated teaching mode. *Journal of Huaiyin Institute of Technology*.

[3] Ding Jianhua (2019) linked the learning environment with the community. *Shanghai Education.*

[4] Guo Jing (2019) Research on Teacher Professional Development and Personal Growth. *Foreign* trade and economic cooperation.

[5] How to Integrate Technology (Edutopia) https://www.edutopia.org/technology-integration-guide-implementation.

[6] Integrating Technology in Teaching/PPT-SlideShare https;//www.slideshare.net/cmlmgn/integrating-technology-in-teaching

[7] Li Desheng (2019) The application of modern educational technology in teaching. *Modern Information Technology*.

[8] Liu Yingxuan (2018) "Internet plus" and modern education technology research in the big data technology environment. *A Hundred Prose Schools (New Chinese Loose-leaf).*

[9] Ma Juan, Ma Rong (2022) Development of Informatized Learning Environment: Concepts, Technologies, Forms, and Trends. *Journal of Gansu Normal University.*

[10] Mu Yarong (2022) Construction and Practice of Teaching Evaluation and Quality Management Monitoring System. *Education Informatization Forum.*

[11] Principles to Guide Use of Plagiarism Detection Software and Tools | Teaching Support (umn.edu)

[12] Zhang Mingshan (2019) Research on the Problems and Countermeasures in Teacher Performance Evaluation. *Western Quality Education.*

[13] https://baike.baidu.com/item/%E6%89%8E%E6%A0%B9%E7%90%86%E8%AE%BA/8233319?fr=aladdin.

[14] https://xuewen.cnki.net/R2014099390003582.html.