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Research Article

The Impact of Teacher Training on the Use of Digital Technologies in English Language Teaching and Learning

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Abstract:
The purpose of this study is to investigate the ways in which programs for teacher preparation have an impact on the manner in which digital technologies are incorporated into English language learning and instruction. A total of one hundred fifty English language instructors from a variety of educational settings participated in the study using a mixed-methods approach. The results of surveys were used to collect quantitative data, while interviews and classroom observations were used to collect qualitative data. As a result of the findings, comprehensive programs for teacher preparation improve teachers' digital skills, as well as their confidence and the regularity with which they use technologies in the classroom. Furthermore, the studies emphasize that there are significant elements that influence the efficient application of digital technologies. These aspects include the availability of resources, the support of institutions, and the attitudes of teachers toward technology. The findings emphasize the significance of continuous professional development and provide clear recommendations for legislators and educational institutions about how to successfully establish programs that are suitable for the digital era in order to accomplish the goal of good teacher preparation.
Keywords: Teacher training, digital technologies, English language teaching, professional development, educational technology

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1. Introduction

The development of digital technologies, particularly in the English language, has changed education by providing fresh chances for improved learning and interaction.

Still, effective integration of these tools depends on teachers' confidence and skill (Tondeur et al., 2020; Anderson & Putman, 2020). Many teachers lack sufficient training despite the promise, which limits their capacity to properly use these technologies (Crompton et al., 2021; Kulaksız & Karaca, 2023). Programs for teacher preparation are essential for arming teachers with the required abilities to properly include digital tools (Wu, Zhang & Lee, 2023; Zhao & Lai, 2023). The relationship between digital technology use in English language classrooms and teacher preparation is investigated in this paper.

Statement of the Problem

Lack of training makes many teachers find it difficult to include digital technologies into their lessons of languages. We should know how teacher preparation affects technology use and pinpoint the most successful elements of such initiatives.

Objective and Scope of the Study

This study aims to:

1. Investigate the impact of teacher training on the use of digital technologies in English language classrooms.
2. Assess how training affects teachers' confidence and competence.
3. Identify key factors for successful technology integration.
4. Evaluate teachers' perceptions of training effectiveness.

Contribution of the Study

This study offers practical recommendations for improving teacher training programs, focusing on the key elements that enhance educators' ability to integrate digital technologies. It also provides valuable insights for policymakers and institutions, highlighting strategies to create supportive environments for technology adoption.

2. Literature Review

2.1 English Language Teaching and Digital Technologies

Studies show how well digital technologies increase student participation and language acquisition (Zhao & Lai, 2023; Golonka et al., 2014). Though most research concentrates on short-term results, there are gaps in knowledge on the long-term consequences of these technologies on language competency (Wu, Zhang & Lee, 2023). This study tackles this by investigating the continuous effects of technology use in language instruction.

2.2 Teacher Training and Technology Integration

Teacher training is crucial for effective technology use in classrooms (Czerkawski & Berti, 2020; Sims & Fletcher-Wood, 2021). Yet, existing research lacks critical analysis of which training components are most effective, and how training can be tailored to different educational contexts (Christensen & Trevisan, 2023). This study examines key components of training programs and their role in successful technology integration.

2.3 Factors Influencing Successful Technology Integration

Institutional support, resources, and teacher attitudes are essential for successful technology integration (Alberola-Mulet et al., 2021; Akram et al., 2022). However, there is limited research on how these factors interact. This study investigates their combined effect on technology adoption in various school environments.

2.4 Challenges in Technology Integration

Challenges like time constraints and technical issues persist, but few studies address the institutional changes needed to overcome these barriers (Shadiev & Yang, 2020; Crompton et al., 2021). This study explores the reforms necessary to facilitate sustainable technology integration in English language teaching.

By addressing these gaps, this study contributes to a more comprehensive understanding of effective technology integration and offers practical recommendations for teacher training and institutional support.

2.5 Research Gap

Despite extensive research on digital technologies in language teaching, several gaps remain:
1. Long-term effects: Few studies explore the long-term impact of technology on language proficiency.
2. Training components: There's limited analysis of which training elements are most effective across different educational contexts.
3. Interplay of factors: Research lacks insights into how institutional support, resources, and teacher attitudes interact in various environments.
4. Institutional changes: Few studies address the changes needed to tackle persistent challenges like time constraints and technical issues.

This study aims to fill these gaps by analyzing teacher training, technology integration, and necessary institutional changes in English language teaching.

3. Research Methodology

3.1 Study Design

Combining quantitative and qualitative data collection, this mixed-methods study investigated how teacher training affected digital technology integration in English language instruction. This method made it possible to examine numerical trends as well as teacher personal observations in great detail.

3.2 Sampling Strategy

Purposive sampling was used to select 150 English language teachers from diverse teaching environments (public, private, primary, secondary, tertiary). The sample ensured balanced representation across demographic and professional characteristics to increase generalizability within the study context.

Table 1 lists the participants' demographic features.

Table 1: Demographic Features of Participants

Characteristic	Category	Frequency	Percentage
Gender	Male	62	41.3%
	Female	88	58.7%
Age	20-30	35	23.3%
	31-40	58	38.7%
	41-50	42	28.0%
	51+	15	10.0%
Teaching Experience	0-5 years	28	18.7%
	6-10 years	45	30.0%
	11-15 years	39	26.0%

	16+ years	38	25.3%
Educational Level	Primary	48	32.0%
	Secondary	62	41.3%
	Tertiary	40	26.7%
Institution Type	Public	89	59.3%
	Private	61	40.7%

3.3 Data Collection Tools

3.3.1 Survey

A structured survey, including Likert-scale and open-ended questions, measured teachers' technology use, attitudes, and the influence of training. A pilot test with 20 teachers helped refine the questions for clarity and reliability.

3.3.2 Interviews

Semi-structured interviews with 30 teachers explored their experiences with technology and perceptions of training programs. Interview questions were piloted to ensure alignment with the research objectives.

3.3.3 Classroom Observations

Observations of 20 teachers were conducted to assess real-time technology use in classrooms, guided by standardized checklists to ensure consistent data collection.

3.4 Data Interpretive Analysis

3.4.1: Quantitative Research

Survey data were analysed using descriptive and inferential statistics (t-tests, correlation) via SPSS with a significance level of $p < 0.05$.

3.4.2 Methodical Study

Supported by NVivo, topical analysis revealed important themes from observations and interviews, therefore offering a broad knowledge of the elements affecting technology integration.
This technique guarantees a comprehensive, dependable means of investigating how teacher preparation influences the usage of digital technologies in English language schools.

4. Results

4.1 Impact of Teacher Training on Technology Use

The frequency of digital technology use in English language classrooms ($r = 0.68$, $p = 0.001$) showed a notable positive link when survey data were analysed. Teachers that claimed more thorough training showed more frequency and diversity of technology integration in their classroom environments.

Figure 1 shows how frequency of digital technology use in the classroom relates to the number of training hours one absorbs.

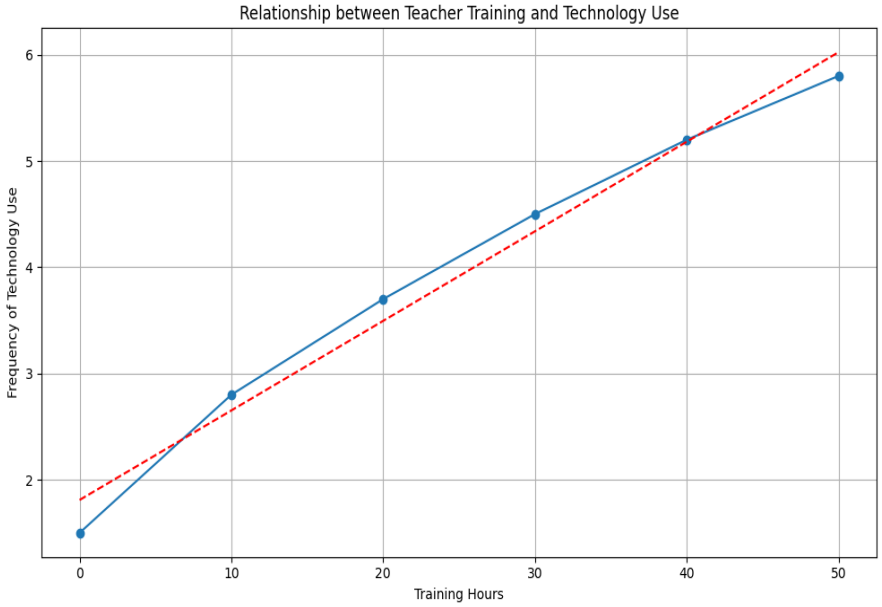

Figure 1: Relationship between Teacher Training and Technology Use

The qualitative results of the interviews confirmed these conclusions since many teachers mentioned how training courses improved their capacity to properly combine digital tools. One participant said, for instance, "I was reluctant to integrate technology in my teaching before the training. However, after going to the seminars, I feel a lot more confident in using several digital tools to include my pupils and improve their language acquisition process."

4.2 Impact on Teachers' Confidence and Competence

The study found a significant improvement in teachers' self-reported confidence and competence in using digital technologies following participation in training programs. Table 2 presents the mean scores for confidence and competence before and after training.

Table 2: Mean Scores for Confidence and Competence in Technology Use

Aspect	Before Training	After Training	Mean Difference	t-value	p-value
Confidence	2.8 (SD = 0.9)	4.2 (SD = 0.7)	1.4	12.6	<0.001
Competence	3.1 (SD = 1.0)	4.5 (SD = 0.6)	1.4	13.2	<0.001

Notes: A 5-point Likert scale (1 = Very Low, 5 = Very High) bases scores.
Following training courses, the results show statistically notable increases in both confidence and competency levels. Qualitative evidence from interviews, where teachers said they were more ready and adept in using digital technology for language education, confirmed these results.

4.3 Factors Contributing to Successful Technology Integration

The study found a number of important elements that help digital technologies be effectively applied in English language instruction. These elements are shown in Figure 2 together with their respective relevance as judged by teachers.

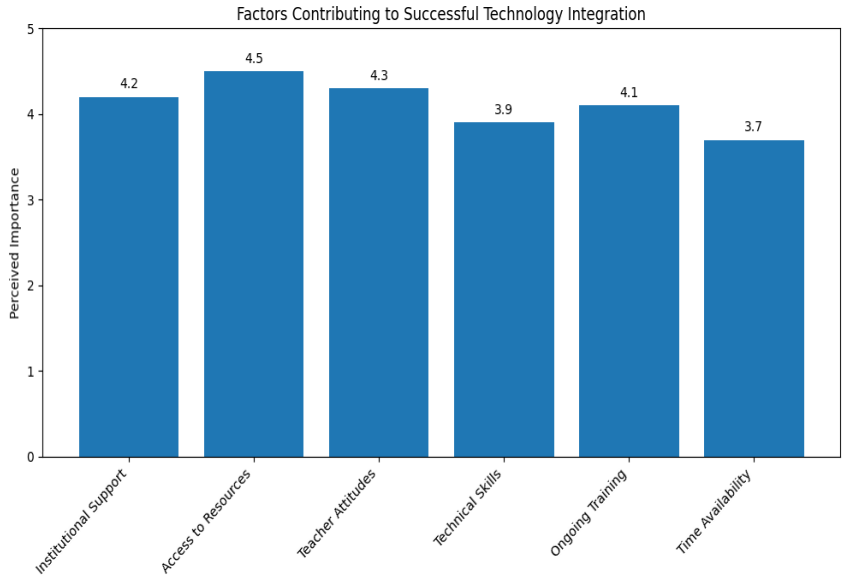

Figure 2: Factors Contributing to Successful Technology Integration

The most important elements turned out to be institutional support and resource access; closely behind are teacher opinions on technology. Interview qualitative data gave still more understanding of these elements. One instructor stressed, for example, the need of institutional support: "Having a supportive administration that supports and facilitates technology integration makes a significant impact. Using digital tools in our instruction is considerably simpler when the school supplies the required equipment and fosters an innovative culture."

4.4 Views on the Efficiency of Training Programs

Generally speaking, teachers felt the training courses helped them be ready for the technology integration. 78% of participants said the training courses were "very effective" or "very effective" in improving their capacity to use digital technology in English language instruction.
Interview qualitative data revealed various elements of training courses teachers thought to be especially useful.

These consisted in:

- Practical experience with several digital tools
- Illustrations of useful tools for language instruction environments
- Possibilities for peer teamwork and best practices sharing
- Continuous encouragement and follow-up meetings

"The most valuable part of the training was the chance to experiment with various tools and see how they might be used in actual classroom situations," one instructor said. The follow-up coaching meetings also enabled me to improve my abilities and handle obstacles I ran across with new technology."

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4.5 Challenges in Technology Integration

Despite the positive impact of teacher training, several challenges in technology integration were identified. Figure 3 illustrates the main challenges reported by teachers.

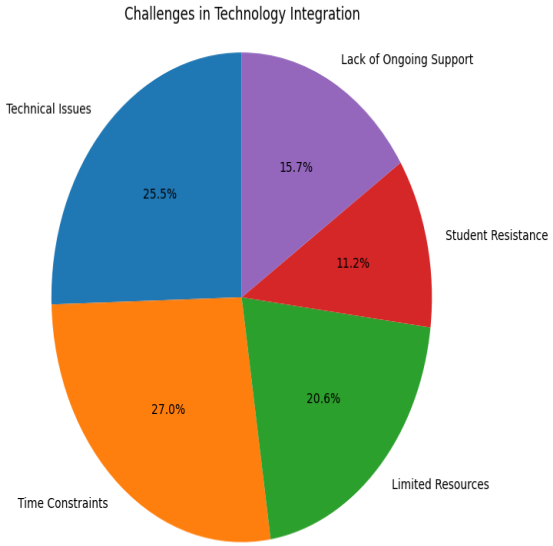

Figure 3: Challenges in Technology Integration

Technical problems and time restrictions turned out to be the most important obstacles, followed by restricted resources. These results underline the requirement of constant assistance and budget allocation to guarantee the sustainable integration of digital technology in English language instruction.

5. Discussion

The results of this study provide an insightful analysis of how teacher preparation affects the way English language instruction integrates digital technologies. The frequency and variety of technology use in the classroom were found to have a notable positive link with training level. This is consistent with earlier studies underlining the need for teacher preparation in promoting technology use (Sims & Fletcher-Wood, 2021; Tondeur et al., 2020). The growing confidence and competency of instructors after training supports even more the theory that professional development is very important in improving digital literacy (Çınar & Alcı, 2022).

5.1 Enhanced confidence and competency

The major result of this study is the significant increase in teachers' self-reported confidence and competency in applying digital tools following training. The notable rises in these fields highlight the need for thorough training courses emphasizing not only technical competency but also pedagogical integration of technology. Confident and competent teachers are more willing to explore new technologies and innovate in their classrooms (Hubbard, 2022). This implies that future training courses should give equal weight to developing both pedagogical flexibility and technological competency.

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5.2 Principal Elements of Technology Integration

The most important elements affecting effective technological integration, the research found, are institutional support and access to resources. Strong administrative support and simple access to technical resources helped teachers be more likely to adopt digital technologies in their classes. This result is in line with earlier studies that underline the need of a supporting infrastructure for continuous technological use (Alberola-Mulet et al., 2021). Furthermore, it was discovered that teacher attitudes about technology were very important since better rates of technology adoption matched with favorable sentiments. This suggests the necessity of training courses addressing attitude and mindset as well as promoting a good view of technology use in the education (Akram et al., 2022).

5.3 Difficulties in Integrating Technology

Teacher preparation has great results, yet some issues still exist. The most often mentioned challenges were technical problems and time restrictions, which point to a larger, general problem with the educational system. The demands of the curriculum and current workloads often make teachers struggle to find the time to include new technology into their courses (Shadiev & Yang, 2020). Furthermore impeding good technological use are technical problems such obsolete hardware or unstable internet access. Dealing with these issues calls for not only greater training, but also institutional reforms inside educational institutions to provide better technical support and free time for teachers to design technologically advanced curricula (Crompton et al., 2021).

5.4 Consequences for Practice

The findings of this study imply various pragmatic consequences for enhancing institutional support for technology integration and teacher preparation programs. Professional growth should first be continual, giving educators constant chances to learn and change with new technologies. Long-term technological integration calls for more than one-off training courses. Second, by giving access to the required tools and developing a culture that supports using digital technologies, schools and other institutions should establish a supportive atmosphere. At last, training courses should concentrate not only on technical abilities but also on enabling teachers to acquire the confidence and pedagogical techniques needed for successful technology use in language education (Zhang & Zou, 2022).

5.5 Prospective Research Areas

Although this study offers a whole picture of how teacher preparation affects technology integration, more investigation is required to investigate long-term consequences on student outcomes. Examining how consistent technology use affects student involvement, language acquisition, and general academic achievement would help one to have important understanding of the efficiency of technology in the classroom. Future research might also look at how school leadership and national policy might help to systematically integrate technology into society (Zhao & Lai, 2023).

6. Conclusion

The important part teacher preparation plays in the effective integration of digital technology in English language instruction has this study shown. The results show that

thorough training courses greatly raise teachers' confidence, competency, and classroom frequency of technology use. These findings highlight the need of ongoing professional development emphasizing not only on technical abilities but also on pedagogical approaches for including digital technologies into language instruction.

Furthermore recognized as absolutely essential for successful technology integration were institutional support, resource availability, and good teacher dispositions. Nonetheless, ongoing difficulties including technological problems and time limits point to the need of systematic adjustments inside educational institutions to maintain technology use in teaching.

This research implies that ongoing, practice-oriented, backed by a solid institutional structure teacher training programs should be based upon. Schools have to make sure that teachers have the tools they need and a suitable surroundings where they may test and implement digital technology.

Future studies should concentrate on the long-term effects of digital technology integration on student learning outcomes and investigate the part of leadership and policy in helping technology adoption at a more general, systemic level. Through addressing these topics, educational systems may fully use digital technologies to enhance language teaching and learning in the digital age.

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