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UTILIZING TECHNOLOGY FOR STUDENT-CENTERED LANGUAGE LEARNING: ENHANCING EFL EDUCATION IN A DIGITAL ERA

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Abstract

This study examines the impact of technology and learners' perceptions on the efficacy of digital tools in promoting autonomy and collaboration in English as a Foreign Language (EFL), focusing on student-centered learning and adaptive technologies in traditional and online classroom settings. The research highlights the potential of technology to enhance dynamic and engaging language learning experiences. Descriptive statistical analysis reveals generally positive attitudes, with high mean ratings (ranging from 4.03 to 4.41) and a consistent mode of 5, indicating widespread recognition of the value of digital tools in improving student engagement and collaboration. The findings highlight the necessity of addressing challenges, including the disparity in technology access and familiarity, despite the overall favorable attitude. This research contributes to the broader discourse on modernizing EFL education and supports the development of more effective, inclusive, and adaptive teaching practices.

Keywords: Digital Learning, EFL, Student-Centered Language Learning, Technology.

INTRODUCTION

The integration of technology into teaching and learning methods has resulted in a major shift in the context of education in recent years. EFL education is one domain where this transformation is most noticeable, as digital tools and resources have completely transformed the way that language is learned. With the advent of the digital age, learners now have unprecedented opportunities to engage in exciting and interactive learning experiences that meet their needs and preferences.

The traditional approaches to learning English, which focused on teacher-centered education, grammar exercises, and rote memorization, are gradually being replaced by more communicative and student-centered strategies. Language learning is most effective when students actively engage in real-world communicative tasks that reflect how language is used in everyday life. Additionally, studies on language learning have highlighted the value of opportunities for independent practice, context-rich learning environments, and meaningful interaction in promoting language competency.

Meanwhile, the widespread use of digital devices such as PCs, cellphones, tablets, and the internet has transformed how language learners engage with language. Immersion language learning experiences are made possible by technologies, which provide a variety of interactive programmes, multimedia resources, and communication platforms for use both within and outside of the classroom. The digital ecosystem offers a multitude of chances for language learners to interact with speakers of the target language in a variety of circumstances and engage with authentic language input, ranging from social

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media platforms and virtual reality simulations to language learning apps and online courses.

However, even with all of the potential advantages of technology-assisted language learning, the successful incorporation of digital tools into EFL instruction is still a complicated and multidimensional undertaking. The wide range of technologies at their disposal, providing equal access to resources, resolving gaps in students' digital literacy, and striking a balance between the use of technology and pedagogical principles are just a few of the many difficulties faced by learners. In addition, the swift advancement of technology demands constant contemplation and modification to guarantee that the incorporation of technology corresponds with the changing requirements and objectives the language learners. In light of this, there is an increasing demand for research on how technology improves student-centered language acquisition in EFL classrooms.

Research Questions:

1. In what ways does the use of digital tools, such as interactive online platforms or language learning applications, improve student-centered language learning in EFL classroom?
2. In EFL education, which pedagogical approaches best facilitate technology use to foster learners' autonomy and collaboration in student-centered language learning?
3. From students' perspective, what attitudes and views do EFL educators have about using technology to support student-centered language acquisition, and how do these attitudes and perceptions affect teaching methods and technological integration?

LITERATURE REVIEW

In recent years, the integration of technology in language learning has become increasingly prevalent, revolutionizing traditional educational approaches. The shift towards student-centered learning, particularly in EFL education, has gained momentum with the advent of digital tools and resources. The evolution of technology has had a profound impact on language learning methodologies, transforming traditional practices and creating new opportunities for educators and learners. This study explores the historical development and current trends in technology-enhanced language learning, with a focus on the evolution of technology, and its implications for EFL education in the digital era. The integration of technology in language learning can be traced back to the emergence of computers in the mid-20th century. Early efforts focused on the development of computer-assisted language learning (CALL) programs, which provided learners with interactive exercises and drills to practice language skills. These programs laid the groundwork for later advancements in technology-enhanced language learning.

Studies have highlighted the efficacy of incorporating technology to enhance language learning outcomes. Interactive multimedia, mobile applications, and online platforms offer diverse opportunities for students to engage with language content in dynamic and personalized ways (Sung, Chang, & Liu, 2016). Virtual reality (VR) and augmented reality

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(AR) applications have also emerged as promising tools for creating immersive language learning environments (Lee & Hsieh, 2018).

Stockwell (2010) investigated the efficacy of mobile phones for vocabulary activities in language learning. Assessing the platform's impact, the study involved learners in mobile-assisted vocabulary tasks, comparing outcomes with other platforms. Utilizing quantitative methods, pre-tests, and post-tests measured vocabulary acquisition and retention. Findings highlighted mobile phones' potential for enhancing vocabulary learning, contributing to the field of mobile-assisted language learning. This research sheds light on mobile technology's role in language learning, offering insights into effective vocabulary activity design for mobile platforms. Futhermore, Warschauer and Healey's (1998) article provides an extensive overview of the role of computers in language learning. Emphasizing the evolution of technology, it explores its integration into language teaching and learning practices. The authors discuss the potential benefits and challenges of utilizing computers in language education, highlighting the importance of pedagogical considerations and learner engagement. Drawing on empirical research and theoretical insights, the article offers valuable perspectives on the use of computers as tools for language acquisition and communication.

Meskill and Anthony (2010) explored foreign language learning with digital technology, examining its integration and impact. The study delves into various digital tools and resources utilized in language learning contexts. It investigates pedagogical strategies, learner experiences, and outcomes associated with technology integration. Through a comprehensive review, the authors provide insights into effective practices and challenges in using digital technology for language learning. Their work contributes to understanding the evolving landscape of language education in the digital age, emphasizing the significance of digital tools in facilitating foreign language acquisition and instruction.

Student-centered approaches prioritize learners' autonomy, collaboration, and active participation in the learning process (Benson, 2001). By shifting the focus from teacher-led instruction to student-driven exploration, students are empowered to construct their own understanding of language concepts and develop communicative proficiency (Thanasoulas, 2000). However, challenges such as access inequalities, digital literacy disparities, and the risk of superficial engagement with technology remain pertinent concerns (Hubbard, 2017).

METHODOLOGY

Research Design:

This study adopted a mixed-methods approach but primarily leaning toward a quantitative research approach to investigate the utilization of technology for student-centered language learning in EFL education. The research design incorporates both quantitative and descriptive data analysis methods to provide a comprehensive understanding of the phenomenon.

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Participants:

The participants in this study consisted of EFL learners from diverse linguistic and cultural backgrounds. The study involves the learners from multiple educational institutes who actively use the technology in their learning. This diverse sample aims to capture varied perspective on technology users within the academic context.

Data Collection:

Quantitative data was collected through surveys to assess participants' attitudes towards technology integration, perceived learning outcomes, and levels of engagement in student-centered language learning activities.

Data Analysis:

Quantitative data was analyzed using descriptive statistics and inferential techniques to identify patterns, correlations, and differences among participant groups. Additionally, quantitative descriptive statistics was analyzed to uncover recurring themes, insights, and interpretations relevant to the research questions.

FINDINGS AND DISCUSSION

A. Analysis of Data Collected

RQ1 - In what ways does the use of digital tools, such as interactive online platforms or language learning applications, improve student-centered language learning in EFL classroom?

Column1		Column2		Column3		Column4		Column5	
Mean	4.3125	Mean	4.15625	Mean	4.125	Mean	4.21875	Mean	4.09375
Standard Error	0.130426564	Standard Error	0.180218142	Standard Error	0.178196611	Standard Error	0.140091956	Standard Error	0.151333954
Median	4	Median	4	Median	4	Median	4	Median	4
Mode	5	Mode	5	Mode	5	Mode	4	Mode	5
Standard Deviation	0.737804065	Standard Deviation	1.019467761	Standard Deviation	1.008032258	Standard Deviation	0.792479775	Standard Devia	0.856074123
Sample Variance	0.544354839	Sample Variance	1.039314516	Sample Variance	1.016129032	Sample Variance	0.628024194	Sample Varian	0.732862903
Kurtosis	-0.895291613	Kurtosis	1.666802646	Kurtosis	1.690953163	Kurtosis	0.452068398	Kurtosis	-0.592339036
Skewness	-0.582308569	Skewness	-1.30628631	Skewness	-1.27232008	Skewness	-0.837325348	Skewness	-0.516416479
Range	2	Range	4	Range	4	Range	3	Range	3
Minimum	3	Minimum	1	Minimum	1	Minimum	2	Minimum	2
Maximum	5	Maximum	5	Maximum	5	Maximum	5	Maximum	5
Sum	138	Sum	133	Sum	132	Sum	135	Sum	131
Count	32	Count	32	Count	32	Count	32	Count	32
Largest(1)	5	Largest(1)	5	Largest(1)	5	Largest(1)	5	Largest(1)	5
Smallest(1)	3	Smallest(1)	1	Smallest(1)	1	Smallest(1)	2	Smallest(1)	2
Confidence Level(95	0.266006732	Confidence Level(95	0.367557323	Confidence Level(95	0.363434385	Confidence Level(95.	0.285719427	Confidence Le	0.308647635

The data shows that most learners have a positive view of digital tool usage, with an average score slightly above 4. The mean values range from 4.09 to 4.31, with a median of 4, indicating a central tendency of positive responses. The median values are 4, with higher standard deviations in Columns 2 and 3 suggesting greater variability. The range of responses ranges from 2 to 5, indicating the diversity of opinions among learners.

The data indicates that the majority of respondents have a favorable perspective on the use of digital tools in the EFL classroom, with a greater number favoring their integration into student-centered learning. However, there is some variability in individual opinions, particularly in certain aspects. Despite this, most learners support the integration of digital tools, suggesting differing opinions about their effectiveness or implementation.

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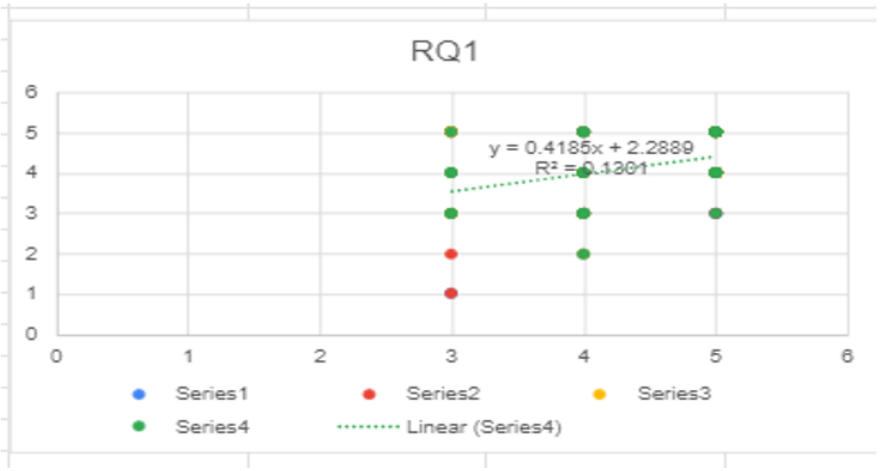
Linear Regression Analysis



This analysis reveals a positive relationship between digital tool usage and improvement in student-centered language learning in the EFL classroom. The regression equation suggests that for each additional unit of digital tool usage, the improvement in student-centered learning increases by 0.4185 units, with a baseline improvement of 2.2889 units when no digital tools are used. However, the R^2 value of 0.1301 indicates that digital tool usage explains only 13.01% of the variance in learning outcomes, implying that other factors also significantly influence student-centered language learning.

RQ 2- In EFL education, which pedagogical approaches best facilitate technology use to foster learner autonomy and collaboration in student-centered language learning?

Column1		*Column2*		*Column3*		*Column4*		*Column5*	
Mean	4.125	Mean	4.28125	Mean	4.25	Mean	4.375	Mean	4.21875
Standard Error	0.153913989	Standard Error	0.150499002	Standard Error	0.155542754	Standard Error	0.153913989	Standard Error	0.140091956
Median	4	Median	4.5	Median	4	Median	5	Median	4
Mode	5	Mode	5	Mode	5	Mode	5	Mode	4
Standard Deviation	0.870669005	Standard Deviation	0.851350919	Standard Deviation	0.87988269	Standard Deviatior	0.870669005	Standard Deviation	0.792479775
Sample Variance	0.758064516	Sample Variance	0.724798387	Sample Variance	0.774193548	Sample Variance	0.758064516	Sample Variance	0.628024194
Kurtosis	-0.641088962	Kurtosis	0.031959724	Kurtosis	0.826221264	Kurtosis	0.278734331	Kurtosis	0.452068398
Skewness	-0.566939926	Skewness	-0.929554306	Skewness	-1.136515141	Skewness	-1.153429505	Skewness	-0.837325348
Range	3	Range	3	Range	3	Range	3	Range	3
Minimum	2	Minimum	2	Minimum	2	Minimum	2	Minimum	2
Maximum	5	Maximum	5	Maximum	5	Maximum	5	Maximum	5
Sum	132	Sum	137	Sum	136	Sum	140	Sum	135
Count	32	Count	32	Count	32	Count	32	Count	32
Largest(1)	5	Largest(1)	5	Largest(1)	5	Largest(1)	5	Largest(1)	5
Smallest(1)	2	Smallest(1)	2	Smallest(1)	2	Smallest(1)	2	Smallest(1)	2
Confidence Level(95.0	0.313909651	Confidence Level(95.	0.306944738	Confidence Level(95.	0.317231539	Confidence Level(	0.313909651	Confidence Level(95.0	0.285719427

The data shows that learners generally have positive views on the role of technology in student-centered language learning. The majority of learners favor using technology for promoting autonomy and collaboration, with higher ratings. However, there is some variation in individual perceptions of technology's role in fostering these aspects. The data is moderately skewn, with moderate variance suggesting varying levels of comfort or familiarity with technology integration. The range of responses is from 2 to 5, with a moderate confidence interval, indicating strong support for technology integration.

In brief, EFL learners strongly support technology in promoting learner autonomy and collaboration in student-centered language learning. They prefer technology-enhanced learning approaches like blended learning, collaborative tools, flipped classrooms, and

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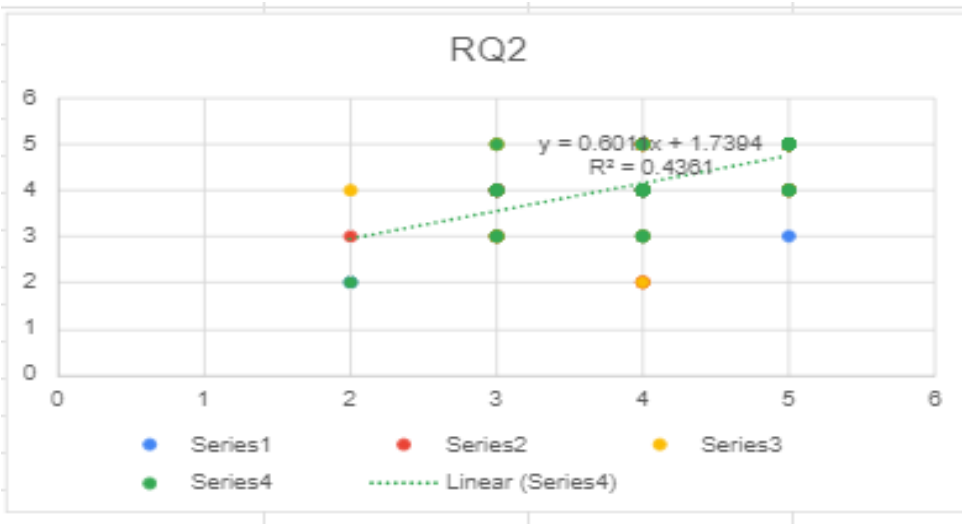
personalized learning. The data shows that many learners agree on the positive impact of technology on student independence and collaborative learning. However, differing levels of access and comfort influence classroom implementation.

Linear Regression Analysis



The analysis shows a positive relationship between the implementation of pedagogical approaches that integrate technology and the facilitation of learner autonomy and collaboration in EFL education. The equation suggests that for each additional unit of technology integration, learner autonomy and collaboration increase by 0.6011 units, with a baseline of 1.7394 units when no technology is used. The R^2 value of 0.4361 indicates that 43.61% of the variance in learner outcomes can be explained by these pedagogical approaches, suggesting a moderate impact. However, other factors also influence student outcomes.

RQ 3- From Students' perspective, what attitudes and views do EFL educators have about using technology to support student-centered language acquisition, and how do these attitudes and perceptions affect teaching methods and technological integration?

Column1		*Column2*		*Column3*		*Column4*		*Column5*	
Mean	4.03125	Mean	4.21875	Mean	4.25	Mean	4.15625	Mean	4.40625
Standard Error	0.170887006	Standard Error	0.147111811	Standard Error	0.161894031	Standard Error	0.16257365	Standard Error	0.125878966
Median	4	Median	4	Median	4	Median	4	Median	4.5
Mode	4	Mode	5	Mode	5	Mode	5	Mode	5
Standard Deviation	0.966682888	Standard Deviation	0.832190076	Standard Deviation	0.91581094	Standard Deviation	0.91965544	Standard Deviat	0.712078964
Sample Variance	0.934475806	Sample Variance	0.692540323	Sample Variance	0.838709677	Sample Variance	0.845766129	Sample Varianc	0.507056452
Kurtosis	1.923060916	Kurtosis	-0.006740361	Kurtosis	3.706590492	Kurtosis	-0.931474746	Kurtosis	2.748108647
Skewness	-1.20810382	Skewness	-0.80144886	Skewness	-1.612694294	Skewness	-0.593319583	Skewness	-1.363018133
Range	4	Range	3	Range	4	Range	3	Range	3
Minimum	1	Minimum	2	Minimum	1	Minimum	2	Minimum	2
Maximum	5	Maximum	5	Maximum	5	Maximum	5	Maximum	5
Sum	129	Sum	135	Sum	136	Sum	133	Sum	141
Count	32	Count	32	Count	32	Count	32	Count	32
Largest(1)	5	Largest(1)	5	Largest(1)	5	Largest(1)	5	Largest(1)	5
Smallest(1)	1	Smallest(1)	2	Smallest(1)	1	Smallest(1)	2	Smallest(1)	2
Confidence Level(9	0.348526347	Confidence Level(9	0.300036518	Confidence Level(95.0	0.330185054	Confidence Level(95	0.331571144	Confidence Leve	0.256731844

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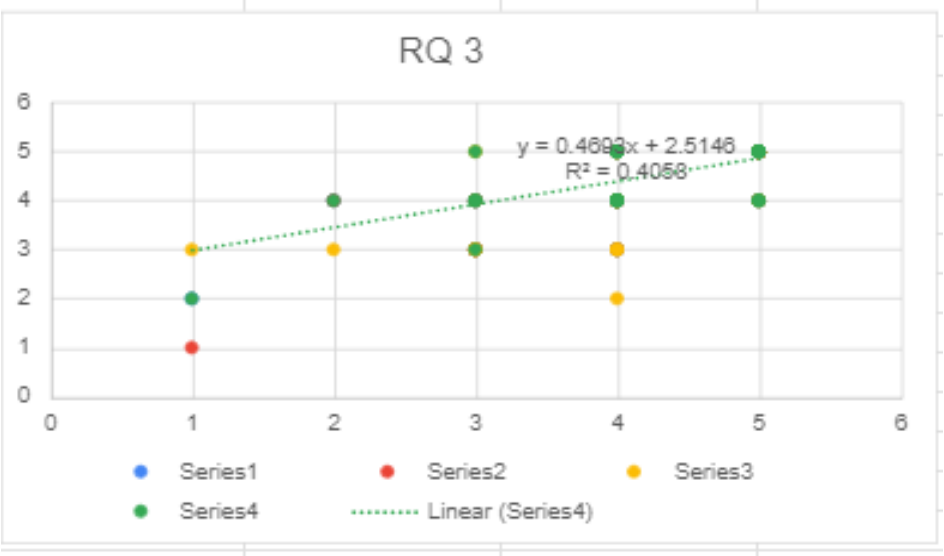
The statistic shows that learners generally have a positive attitude towards technology in supporting student-centered learning. The mean is around 4, and the standard errors are small, indicating low variability and high consistency. The responses are mostly positive, with more learners favoring technology use. However, some learners have mixed or negative views. The standard deviations are moderate, ranging from 0.71 to 0.96, indicating moderate consistency. The range of responses ranges from 2 to 5, with some strongly positive views. The data reflects generally positive attitudes towards technology in student-centered language acquisition.

Linear Regression Analysis



The analysis reveals a positive relationship between factors influencing EFL educators' attitudes and their views on using technology. The regression equation $y = 0.4693x+2.5146$ indicates that for each unit increase in influencing factors, educators' attitudes towards technology increase by 0.4693 units, with a baseline attitude of 2.5146 when no influencing factors are present. The R^2 value of 0.4058 shows that about 40.58% of the variance in educators' attitudes can be explained by these influencing factors. This suggests a moderate explanatory power of the model, but also highlights that other factors likely contribute to educators' attitudes and views.

DISCUSSION

The findings indicate that respondents generally have positive attitudes toward the use of digital tools in EFL classrooms, with high mean ratings suggesting widespread recognition of their value in promoting learner autonomy and collaboration.

The positive findings suggest that digital tools are perceived as effective in supporting student-centered language learning. This highlights their potential to foster active learning environments where learners take greater control of their learning processes. The strong alignment between high mean ratings and collaborative pedagogical strategies suggests that learners could benefit from integrating technology systematically into their learning

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practices. However, the variability in responses indicates that not all learners may equally benefit from or appreciate these technologies, possibly due to differences in digital literacy, access to devices, or prior exposure to technology-enhanced learning.

The negative skewness, indicating a tendency toward higher ratings, suggests that most learners view digital tools favorably. However, the presence of variability implies that contextual factors, such as institutional support, teacher training, or cultural attitudes toward technology, may influence learners' perceptions.

While the findings offer valuable insights, several limitations suggest avenues for future research. First, the reliance on descriptive statistics and self-reported data may not fully capture the complexities of learners' experiences. To address this, future research could adopt an Explanatory Sequential Mixed-Methods, such as interviews or classroom observations to provide a more holistic view of how digital tools influence learning outcomes. Additionally, further research could explore how different types of tools (e.g., communication platforms, content creation apps, language-learning software) contribute to these outcomes. Lastly, it is essential to investigate contextual factors including institutional support, teacher training, and cultural attitudes toward technology, to develop a deeper comprehension of the influence of digital tools on EFL learning in varied environments.

Overall, the research highlights the positive role of digital tools in EFL education, particularly in fostering learner autonomy and collaboration. However, the observed variability in responses points to the need for targeted strategies to address disparities in access and usage.

Ethical Considerations:

This study adheres to ethical guidelines concerning informed consent, confidentiality, and voluntary participation. Participants were provided with detailed information about the study's purpose, procedures, and their rights as research subjects. Confidentiality of data was maintained through anonymization and secure storage protocols.

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