

Can quantity of technology use and Efl teachers' teaching experience determine student engagement in language education? A quantitative replication and extension study

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Abstract - The present quantitative research was intended to be written to replicate and extend a previous qualitative study by Yoldaş (2026) to make its results reliable and systematic through multiple linear regression analysis. Previous study focused on EFL teachers' own technology use and its impact on their students' engagement. Using JAMOVİ software, previous results were transformed into numerical data with this study. A multiple linear regression analysis was administered to explore whether technology use frequency and teachers' teaching experience had an effect on student engagement. Subsequent to data analysis, it was found that both variables had negative impact on student engagement in language education, proving that instead of focusing on teachers' technology use frequency, quality of education should be taken into consideration to improve education. Even though pilot study limited the reliability and generalizability of the outcome due to its nature, the study gave insightful outcome for contemporary language teaching with statistical data.

Keywords: technology use in language education; multiple linear regression; student engagement; teaching experience; digital pedagogy; educational technology adoption

1. Introduction

With the spread use of technology in almost every aspect of daily lives of people, it becomes impossible not to integrate it into language teaching as well. Behind this impossibility, there are indispensable benefits of using technology such as its positively impact on student engagement. The concept of student engagement is seen behaviourally, emotionally and cognitively on students' attitudes (Fredericks et al., 2016). Although these changes have generally happened positively, sometimes findings can point the opposite when they are context specific. Therefore, there are still need for research on technological use in the class.

Technological tools are not sufficient to pursue learning even though they are seen as a 'wow' factor to alloy students for a moment. Therefore, the utilization of technology within classes as entertaining tools to boost student joy and motivation cannot be accepted solely unless these tools are converted into pedagogical tools. When they are not integrated purposefully, they may cause cognitive load and may change classroom dynamics negatively (Trust, 2018). Additionally, excessive use of these tools may distract students keeping learning monotonous which makes frequency important for EFL teachers' use (Sweller et al., 2019).

The integration of technology in language education has transformed the way students learn foreign languages by promoting autonomous learning, increasing access to learning



resources, and facilitating interactive learning experiences. Technology-based learning environments enable students to take greater responsibility for their learning process through self-regulation, independent practice, and the use of various digital tools that support language development. The use of technology encourages learners to become more self-directed and motivated in managing their learning activities and language improvement processes (Akay et al., 2019).

Technology also plays a significant role in enhancing students' engagement in English language classrooms. Digital platforms, interactive applications, and multimedia resources provide opportunities for active participation, collaboration, and communication among learners. The integration of technological tools in speaking classes, for instance, creates a more student-centred environment that encourages learners to express their ideas and participate actively in classroom interactions, thereby improving their engagement and speaking performance (Lokollo & Mali, 2024).

Student engagement through technology can be conceptualized as a multidimensional construct that encompasses behavioural, emotional, and cognitive dimensions. Technology-supported instruction enables teachers to create meaningful learning experiences by incorporating interactive activities, immediate feedback, and collaborative tasks. Teachers perceive technological integration as an effective strategy for fostering students' participation, motivation, and deeper involvement in foreign language learning activities (Ljalikova et al., 2025).

The use of digital technology in foreign language learning has also been associated with improved language proficiency and learning outcomes. Technological tools provide authentic materials, facilitate communication with diverse language communities, and support individualized learning experiences. The flexibility and accessibility of digital technologies make language learning more engaging and adaptable to students' varying learning preferences and needs (Bećirović et al., 2021).

Furthermore, educational technology tools have demonstrated positive effects on student engagement in EFL contexts. The implementation of digital platforms, online quizzes, and interactive applications increases students' attention, participation, and enthusiasm during learning activities. Technology-mediated instruction creates opportunities for learners to engage more deeply with instructional content and enhances their overall learning experiences (Teng & Wang, 2021).

The importance of technology became even more evident in post-pandemic educational settings, where digital learning environments emerged as essential components of language instruction. Students' engagement in post-pandemic teaching contexts is significantly influenced by the effective use of technology, as digital tools facilitate communication, collaboration, and continuous learning opportunities beyond traditional classroom settings. Appropriate technological integration contributes positively to maintaining and improving students' engagement in EFL learning environments (Metaria & Cahyono, 2024).

Nevertheless, the relationship between technology use and language learning outcomes is not always linear. Excessive reliance on technology does not automatically guarantee better learning experiences or improved teacher-student interaction. The effectiveness of technology integration largely depends on how digital tools are utilized pedagogically and how teachers manage classroom interactions. High levels of technology use may not necessarily result in higher interaction quality if pedagogical considerations and meaningful communication opportunities are neglected (Li et al., 2019).

Recent studies have consistently demonstrated the growing significance of technology and artificial intelligence in enhancing engagement in English as a Foreign Language (EFL) education. However, the findings reveal that technological integration is not inherently beneficial and depends largely on pedagogical design, digital literacy, and contextual implementation. The

literature generally agrees that technology can positively influence learners' behavioural, cognitive, and emotional engagement, but there remain important gaps regarding its sustainability and equitable implementation across different educational settings.

Artificial intelligence has emerged as a transformative tool in second language education by facilitating personalized learning experiences, immediate feedback, and adaptive instructional strategies. AI-assisted learning environments have been found to promote behavioural participation, cognitive involvement, and emotional connections with language learning. Nevertheless, the effectiveness of AI integration is contingent upon teachers' and learners' readiness to use such technologies effectively. The study also indicates that excessive dependence on AI may diminish learners' autonomy and critical thinking if pedagogical scaffolding is not adequately provided (Zhou & Hou, 2024).

The relationship between technology use and student engagement is also mediated by teachers' pedagogical beliefs. Teachers who perceive technology as a meaningful instructional tool tend to design more interactive and student-centred learning experiences, thereby increasing learners' engagement. Conversely, educators with limited confidence in technology often employ digital tools merely as supplementary instruments rather than transformative pedagogical resources. This finding suggests that technological effectiveness is shaped not only by the availability of digital tools but also by teachers' pedagogical orientations (Ma'rifah et al., 2021).

Research conducted during emergency remote teaching demonstrates that technology can sustain students' engagement under challenging circumstances by facilitating communication and providing access to instructional resources. However, studies also report disparities in technological access, internet connectivity, and students' digital competencies, which can limit the effectiveness of online learning environments. Consequently, technology cannot be regarded as a universal solution to engagement problems because contextual and infrastructural constraints significantly influence learning experiences (Hanifah et al., 2022).

The successful implementation of technology-based language learning further depends on digital literacy competencies. Students and teachers who possess higher levels of digital literacy are generally better equipped to navigate technological resources, participate actively in digital learning environments, and benefit from technology-enhanced instruction. However, the assumption that all learners are digitally competent is problematic, as digital literacy levels vary substantially across educational contexts and socioeconomic backgrounds (Alakrash & Razak, 2021).

Teachers' pedagogical orientations in online classrooms also significantly affect students' motivation and engagement. Technology integration that emphasizes interaction, collaboration, and learner autonomy tends to foster greater participation and motivation. In contrast, teacher-centred approaches that merely transfer traditional instructional methods into online platforms may fail to create meaningful engagement despite extensive technological use. This finding suggests that pedagogy, rather than technology itself, remains the primary determinant of student engagement (Souza, 2021).

Immersive technologies such as artificial intelligence, augmented reality, virtual reality, and mobile applications have shown considerable potential for increasing learners' motivation and engagement through interactive and authentic learning experiences. These technologies enable learners to practice language skills in simulated environments that resemble real-world communication contexts. Nevertheless, the implementation of immersive technologies often requires substantial financial investment, technical support, and teacher training, which may limit their accessibility and sustainability in many educational institutions (Zhang & Miao, 2025).

Studies investigating ICT incorporation in foreign language learning indicate that digital technologies encourage active participation, collaboration, and self-regulated learning behaviours. ICT-based instruction creates opportunities for learners to interact with diverse learning resources and communicate beyond classroom boundaries. However, the effectiveness

of ICT integration is moderated by instructional quality and learners' motivation, indicating that technological incorporation alone does not automatically guarantee meaningful engagement (Purnawati et al., 2024).

Contrary to the assumption that online learning environments inevitably reduce engagement, evidence suggests that students' engagement in EFL online classrooms can remain positive when learning activities are appropriately designed and supported. Nevertheless, some students continue to experience feelings of isolation, reduced motivation, and limited interaction opportunities. These findings demonstrate that engagement in online learning environments is multidimensional and influenced by psychological, social, and technological factors simultaneously (Alzahrani, 2023).

The measurement of engagement in foreign language classrooms further reveals that higher levels of behavioural, emotional, cognitive, and social engagement are associated with improved language achievement. However, the complexity of engagement measurement poses methodological challenges because engagement is dynamic and context-dependent. Most existing studies rely heavily on self-reported data, which may not fully capture the multifaceted nature of learners' engagement and its long-term effects on language development (Guo et al., 2022).

Research on communicative language teaching indicates that students generally perceive interactive and communication-oriented instructional approaches as effective in enhancing language proficiency and classroom participation. Technology can facilitate communicative language teaching by providing authentic communication opportunities and interactive platforms. However, positive perceptions of communicative approaches do not necessarily translate into improved learning outcomes unless students are actively engaged in meaningful language use and practice (Nhan, 2024).

Similarly, digital communication activities have been found to enhance learners' willingness to communicate and increase their engagement by creating collaborative and less anxiety-provoking learning environments. Nevertheless, these activities may not benefit all learners equally because individual differences in technological competence, communication apprehension, and learning preferences significantly influence students' participation levels. Therefore, the effectiveness of digital communication activities should be understood within broader pedagogical and contextual considerations rather than being attributed solely to technological innovation (Han et al., 2024).

Overall, the literature suggests that technology and artificial intelligence possess considerable potential to improve student engagement in language education. However, their effectiveness is mediated by pedagogical beliefs, digital literacy, accessibility, contextual factors, and instructional design. The existing body of research also reveals a tendency to focus predominantly on the positive impacts of technology while providing limited attention to its potential drawbacks, contextual limitations, and long-term pedagogical implications. Future studies should therefore adopt more comprehensive and longitudinal approaches to examine how technological integration influences engagement across diverse educational settings and learner populations (Zhou & Hou, 2024; Ma'rifah et al., 2021; Zhang & Miao, 2025).

Notwithstanding there is a bulk of research on technology integration into classes in language education and its impact on student engagement, the present study aimed to replicate and extend qualitative data with quantitative methodology based on a pilot study published by Yoldaş (2026). While the original study was designed qualitatively to gain deeper analysis about the topic, it was lack of numerical data to establish a more objective point in the literature. Even so, the study informed the literature about EFL teachers' perspectives on their own technology use on their students in the context of Türkiye by stating that these tools were mostly influential in affecting students affective and behavioural statements. Nonetheless, the previous research deprived of statistical outcome to be able to come up with more objective and predictive results.

Therefore, the present study aimed to replicate the previous study by extending its power with numerical base through Multiple Linear Regression analysis. Furthermore, EFL teachers' demographical data was also analysed and compared with their selections in the survey in order to create a relationship for the literature. Two research questions were created in light of the course of the study:

RQ1: To what extent do EFL teachers' features change the course of student engagement in language teaching?

RQ2: To what extent does EFL teachers' own technology use affect student engagement?

Hypotheses

Hypothesis1: Novice EFL teachers are better at increasing student engagement.

Hypothesis2: The frequent technology integration into language classes increases student engagement.

2. Method

The present research was designed to replicate a previous study by Yoldaş (2026) with its key elements and main features, extending through a quantitative research design to provide numerical data (Plonsky, 2017). Therefore, this research was examined by using descriptive statistics (Field, 2018) based on a predictive model (Hair, 2019) to inform the literature with pedagogical implications contrary to previous study which was analysed accordingly to thematic analysis based on open-ended question sections (Braun & Clarke, 2019). All the data was analysed by using The Jamovi Project (2024) as it provides free and open access for descriptive and predictive data analyses (Fox & Weisberg, 2023; R Core Team, 2024). Given that the present research was intended to replicate and extend the research published by Yoldaş (2026), existing sample and data were used to generate numerical data. Using an online questionnaire created with Google Forms, the previous study collected the data thanks to Turkish EFL teachers (n=21). Since the data was collected through snowball sampling, there was not predetermined homogeneity in terms of gender, age and teaching experiences of the participants.

Table 1. Methodological Comparison of Two Research

Components	The Previous Research	The Present Research
Research Design	Qualitative	Quantitative
Variables	There was no variable	Technology use frequency, EFL teachers' teaching experience years, and perceived engagement scores of students
Findings	Categorical findings	Likert-derived data
Data Analysis	Thematic Analysis	Multiple Linear Regression
Software	Online Survey	JAMOVI

3. Results and Discussion

3.1 Results

3.1.1 Multiple Linear Regression Analysis

In order to analyse the impact of two unique and independent variables such as *EFL teachers' technology use* and *EFL teachers' teaching experience years* on the continuous and dependent variable, which was *perceived student engagement scores*. With the aim of measuring EFL teachers' perceptions on student engagement through teachers' use of technology in language classes with 21 participants Table 2, a multiple linear regression analysis model was administered. In light of

the analysis, the variance score of engagement of students was found as 20.1% (R^2 0.201, Adjusted R^2 = 0.106), ensuring the moderate level of explanatories of the research, which may be caused by the small sample size of the study.

According to the results obtained from 21 participants through open-ended questioned survey, it was demonstrated that there was a marginally negative impact of technology on student engagement (B = -0.398, p = 0.062), and the confidence interval was about (-0.8182, 0.0218). Teaching experience range of EFL teachers was not a significant determinant factor for student engagement in the class (B = 0.104, p = 0.235). Regression Table 2. was observed as stable since collinearity statistics showed that there is no multicollinearity problem among predictors (VIF = 1.17).

Table 2. Model Fit Measures

Model	R	R^2	Adjusted R^2	N
1	0.448	0.201	0.106	20

The model fit measures indicate that the multiple linear regression model has a moderate relationship between the independent variables and the dependent variable. The correlation coefficient (R = 0.448) suggests a moderate positive association between the combined predictors—technology use frequency and teaching experience—and students' perceived engagement scores. However, the magnitude of the relationship is not particularly strong, indicating that the predictors explain only a limited portion of the variability in student engagement.

The coefficient of determination (R^2 = 0.201) shows that approximately 20.1% of the variance in students' perceived engagement can be explained by the regression model. Conversely, about 79.9% of the variation in perceived engagement remains unexplained by technology use frequency and teaching experience. This finding suggests that students' engagement is influenced by numerous other factors not included in the model, such as students' intrinsic motivation, teachers' pedagogical competence, classroom interaction, learning environment, digital literacy, socioeconomic conditions, and instructional strategies.

More importantly, the Adjusted R^2 value (0.106) is substantially lower than the R^2 value (0.201). The reduction from 20.1% to 10.6% indicates that the explanatory power of the model decreases after adjusting for the number of predictors and sample size. This discrepancy suggests that some of the variance explained by the model may be attributable to random sampling variation rather than genuine predictive relationships. In practical terms, the model only explains approximately 10.6% of the variability in students' perceived engagement after accounting for model complexity, which can be considered relatively weak.

The relatively low Adjusted R^2 may also be influenced by the small sample size (N = 20). Regression models estimated from small samples often produce unstable parameter estimates and reduced statistical power, increasing the likelihood of Type II errors and limiting the generalizability of findings. With only twenty observations, the model may not adequately capture the complex relationships between technology use, teaching experience, and student engagement. Small samples also make the model more sensitive to outliers and individual variations, potentially inflating or deflating the observed relationships.

From a critical perspective, the model fit statistics suggest that technology use frequency and teaching experience are insufficient predictors of students' perceived engagement when considered independently. Student engagement is a multidimensional and context-dependent construct involving behavioral, emotional, cognitive, and social dimensions. Consequently, a regression model containing only two predictors cannot fully explain the complexity of engagement processes in educational settings.

The modest R^2 and low Adjusted R^2 values indicate that future studies should incorporate additional variables that are theoretically relevant to student engagement. Variables such as teachers' digital competence, pedagogical beliefs, quality of technology integration, students' motivation, self-efficacy, learning autonomy, classroom climate, and institutional support may provide a more comprehensive explanation of engagement outcomes. Furthermore, future research should consider larger sample sizes and more sophisticated analytical approaches, such as mediation, moderation, or structural equation modelling, to capture the multidimensional relationships among technology use, teaching experience, and student engagement.

Overall, the model fit measures demonstrate that although the predictors exhibit a moderate collective relationship with students' perceived engagement ($R = 0.448$), their explanatory capacity remains limited ($R^2 = 0.201$; Adjusted $R^2 = 0.106$). Therefore, the current model should be interpreted cautiously and regarded as an initial exploratory model rather than a comprehensive explanatory framework of student engagement in technology-enhanced language learning environments.

3.1.2 Descriptive Features of the Participants

Regarding the first research question, *"To what extent do EFL teachers' features change the course of student engagement in language teaching?"*, demographical data of the study was uncovered. The sample of the pilot study was consisted of 21 EFL teachers, representing young and female dominated outcome since it was created through snowball sampling method (Ting el atl., 2025). Thus, the sample was not homogenous. Based on table3., the number of female EFL teachers who participated the previous study ($n=17$, 81.0%) outnumbered male EFL teachers ($n=4$, 19.0%). Moreover, these participants were in their early-to-mid career period since higher number of them belongs to 20-29 age section ($n=13$, 61.9%) on the survey, and it was followed by ages between 30-39 ($n=7$, 33.3%), and lastly EFL teachers in their 50's or above came ($n=1$, 4.8%). Subsequent to gender and age of EFL teachers in the study, their teaching experience years were asked for the detailed analysis. In this section, EFL teachers' distribution was almost homogenous. For example, EFL teachers with 0-6 months of experience ($n=5$, 23.8%) and with 3-5 years of experience ($n=5$, 23.8%), and with 6-10 years of experience ($n=5$, 23.8%) were same in terms of the number of teachers and their experience ranges. Nevertheless, EFL teachers with 1-2 years of experience ($n=3$, 14.3%), and with more than 10 years ($n=3$, 14.3) were in the same row according to table3. Nonetheless, hypothesis1 could not be supported with the results since there was no relevance of teachers' teaching experience on student engagement.

Table 3. Demographical features of participant teachers

Variable	Category	n	%
Gender	Female	17	81.0
Gender	Male	4	19.0
Age	20-29	13	61.9
Age	30-39	7	33.3
Age	50+	1	4.8
Teaching Experience	0-6 months	5	23.8
Teaching Experience	1-2 years	3	14.3
Teaching Experience	3-5 years	5	23.8
Teaching Experience	6-10 years	5	23.8
Teaching Experience	10+ years	3	14.3

3.1.3 Perceived Engagement Score of Students

According to analysed data based on the second research question *"To what extent does EFL teachers' own technology use affect student engagement?"*, technology use frequency ensured with a

negative result ($B=-0.398$, $SE=0.199$, $t=-2.00$, $p=0.062$), which was contradictory to hypothesis2. Therefore, it was obvious that technology use frequency cannot prove student engagement. Since this statistical result is higher than classical alpha level ($\alpha=0.05$), the result was not significant and meaningful, which can be called as marginally significant. However, teaching experience years of EFL teachers did not determinant in predicting student engagement in the class according to table 4.

Table 4. Model Coefficients – Perceived Engagement Score of Students

Predictor	Estimate (B)	SE	95% CI Lower	95% CI Upper	t	p
Intercept	3.374	0.4278	2.4712	4.2763	7.89	<.001
Technology Use Frequency	-0.398	0.1991	-0.8182	0.0218	-2.00	.062
Teaching Experience	0.104	0.0847	-0.0744	0.2829	1.23	.235

Table 4. Collinearity Statistics

Predictor	VIF	Tolerance
Technology Use Frequency	1.17	0.857
Teaching Experience	1.17	0.857

The multiple linear regression analysis was conducted to determine the extent to which technology use frequency and teaching experience predict students' perceived engagement scores. The regression coefficients indicate that neither predictor significantly explained variations in students' perceived engagement, suggesting that the relationship between these variables is more complex than initially assumed.

The intercept value ($B = 3.374$, $p < .001$) indicates that when both technology use frequency and teaching experience are held constant at zero, the predicted perceived engagement score is 3.374. This value suggests that students generally reported a moderately high level of engagement independent of the two predictors included in the model. The significant intercept further implies that there may be other influential variables, such as instructional quality, teacher-student interaction, learning motivation, classroom climate, and pedagogical strategies, that contribute more substantially to students' engagement.

Technology use frequency produced a negative regression coefficient ($B = -0.398$, $SE = 0.1991$, $t = -2.00$, $p = .062$). Although the relationship did not reach the conventional significance level of $p < .05$, the coefficient is noteworthy because it approaches statistical significance and exhibits a negative direction. Specifically, for every one-unit increase in technology use frequency, the perceived engagement score was predicted to decrease by approximately 0.398 points, assuming all other variables remained constant. The 95% confidence interval (-0.8182 to 0.0218) includes zero, thereby preventing the rejection of the null hypothesis. Nevertheless, the upper confidence limit is very close to zero, indicating a possible trend that warrants further investigation.

The negative coefficient challenges the common assumption that more frequent technology use necessarily improves student engagement. Instead, the findings suggest that excessive or inappropriate technology integration may reduce students' engagement. Overreliance on digital tools can potentially lead to cognitive overload, technological fatigue, passive learning behaviours, distractions, and reduced interpersonal interactions. This finding supports arguments in educational technology literature that technology itself does not guarantee meaningful engagement and that the pedagogical quality of technology integration is more important than the frequency of its use. Consequently, the result implies that technology should be implemented strategically and purposefully rather than merely increasing its frequency in classroom instruction.

Teaching experience demonstrated a positive but statistically insignificant relationship with students' perceived engagement ($B = 0.104$, $SE = 0.0847$, $t = 1.23$, $p = .235$). The coefficient indicates that each additional unit of teaching experience was associated with a predicted increase of only 0.104 points in students' engagement scores. The confidence interval (-0.0744 to 0.2829) also crosses zero, indicating substantial uncertainty regarding the true effect of teaching experience. Therefore, teaching experience alone cannot be considered a significant predictor of students' perceived engagement.

The non-significant effect of teaching experience suggests that years of service do not automatically translate into higher student engagement. Experienced teachers may possess stronger classroom management skills and pedagogical knowledge, but these advantages do not necessarily guarantee the implementation of engaging teaching practices. Conversely, less experienced teachers may be more innovative, technologically adaptive, and willing to adopt student-centred pedagogies that foster engagement. Therefore, the quality of instructional practices, continuous professional development, and teachers' pedagogical adaptability may be more influential than teaching tenure itself.

The collinearity statistics demonstrate that multicollinearity was not a concern in the regression model. Both predictors had Variance Inflation Factor (VIF) values of 1.17 and tolerance values of 0.857. Since VIF values are substantially below the commonly accepted threshold of 5 and tolerance values are well above the minimum criterion of 0.20, the predictors exhibited minimal shared variance. This indicates that technology use frequency and teaching experience independently contributed to the model estimation and that the regression coefficients were stable and interpretable.

From a critical perspective, the findings imply that students' engagement cannot be adequately explained solely by the frequency of technology use and teaching experience. Student engagement is a multidimensional construct influenced by numerous cognitive, emotional, behavioural, and contextual factors. The near-significant negative effect of technology use frequency further suggests that future research should move beyond measuring the quantity of technology use and instead examine the quality, purpose, and pedagogical appropriateness of technological integration. Similarly, future studies should investigate mediating and moderating variables, such as teachers' digital competence, pedagogical beliefs, instructional strategies, and students' intrinsic motivation, to develop a more comprehensive understanding of the determinants of student engagement in technology-enhanced language learning environments.

3.2 Discussion

Considering the main intent behind this replication and extension study, the data of a previous study by Yoldaş (2026) was used and transformed into numerical base to interpret. With using multiple linear regression model, the present study established a strong connection among variables in the context of Türkiye. Even though the previous study was a pilot study, which had a small sample size in its nature, moderately significant findings were gathered.

Among findings, the most significant one was about the paradox between qualitative and quantitative research designs. While the previous study found that technological devices (e.g., smart board, computer, speakers) and technological affordances (e.g., online quizzes, online games, teaching videos) promoted student engagement behaviourally, affectively, and cognitively, the present study came up with a moderately significant impact of these devices on student engagement. Aligning with this finding, it was demonstrated that the increased technology integration into language classes did not mean the rise on student engagement. Although the present study reached this outcome, other research conducted about this topic was found that there was a positive relationship between the use of technology and student engagement in the class.

For example, Lu et al., (2024) administered research among 119 undergraduate students of teacher education program in Canada to understand whether their use of Moodle affect their

engagement or not through six main engagement variables such as login frequency, material access, quiz attempts, assignment submissions, collaboration, gradebook viewing. Throughout the process, authors understood that student engagement was developed in a long term rather than an instant change. Therefore, this kind of technological affordances can be used to increase student engagement and their self-regulated learning skills directly, ensuring the importance of using technology in language education.

The paradox between two study can be deepened through the answers to open-ended questions of the previous study, highlighting the importance of the mixed method research design in the literature. Although EFL teachers confirm the importance of using technological devices in the classes in terms of student engagement, they also forewarn about their potential disadvantages about its frequent integration. For instance, a participant EFL teacher stated that: *"If I use these tools too much, they started to get bored or distracted as these tools become ordinary tools, not like rewards."*

Based on this kind of answer, the quantitative part of the study was aligned with the qualitative part. Moreover, this outcome was promoted by the results of another empirical research conducted by Saqr et al. (2023). While technology integration can be a good drive for student engagement, it could not be seen the indicator of main engagement source as there could be a threshold effect. It was found that the efficacy was diminished due to repetitive use of same technological tools in time as it became monotonous for students' learning process.

Additionally, supporting one of the answers of EFL teachers from open-ended questions which was *"I get worried from time to time about the amount of screen exposure young children have. That's why I try to make use of technology in a balanced and purposeful way."* A study by Lepp et al. (2022) associated excessive use of technological tools and being exposed to excessive screen time with concentration problems and decline in engagement. Thus, findings from the present study and previous studies supported the idea of using technological devices giving some breaks to keep students engaged in in long term.

4. Conclusion

4.1 Conclusion

The present replication and extension of the research by Yoldaş (2026) enables statistical data to provide implications to the literature about the impact of frequency using technology in language classes from the context of Türkiye. Through multiple linear regression model using JAMOVİ, two significant outcome was achieved to contribute contemporary pedagogy. Rather than a significant outcome to be able to speak certainly, a moderately significant outcome was reached, highlighting that the frequency of using technology should not be often to escape from monotony in learning. Since the overreliance on digital tools may lead to reduction in student engagement and increase digital fatigue and distraction as EFL teachers stated in open-ended questions, the outcome of the present study did not suggest frequent use of these tools in language education (Haleem et al., 2022).

Considering the small sample size and the constrained context of the previous study, there is a need for further research about the topic. In addition to frequency, demographical data of EFL teachers were also examined whether their years of teaching experience influenced student engagement. However, the results did not show any influence. Both experienced and novice EFL teachers encourage student engagement during language teaching even though the present quantitative study had some limitations such as the small sample size due to the nature of the pilot study (Bond et al., 2023). Shortly, the present study was needed to justify former data by adding numerical variables and strengthen implications for the literature since the topic was highly relevant to contemporary pedagogy.

4.2 Limitations and Further Suggestions

Despite some limitations, the present study had a potential to contribute to the teaching literature as it pointed one of the most popular topics of 21st century. These limitations were listed in the below to be aware of constrains of the study: (a) Small sample size because of the nature of the pilot study, (b) geographically specific since it was created within Türkiye, (c) as the previous study was analysed through EFL teachers' own perceptions, their bias towards the study could lead subjectivity. Considering all limitations, future studies may reach more EFL teachers to collect data. Then, data can be analysed with the mixed method research design to provide reliable results thanks to triangulation (Fetters & Molina-Azorin, 2020).

References

- Akay, C., Haidari, S. M., & Yelken, T. Y. (2019). Technology-enhanced Self-directed Language Learning Behaviors of EFL Student Teachers. *Contemporary Educational Technology*. <https://doi.org/10.30935/cet.590003>
- Alakrash, H. M., & Razak, N. A. (2021). Technology-Based Language Learning: Investigation of Digital Technology and Digital Literacy. *Sustainability*. <https://doi.org/10.3390/su132112304>
- Alzahrani, F. (2023). Is It True They Negatively Engage? Mixed Method Research of Student Engagement in EFL Online Classrooms. *Journal of Language and Education*. <https://doi.org/10.17323/jle.2023.13736>
- Bećirović, S., Brdarević-Čeljo, A., & Delić, H. (2021). The use of digital technology in foreign language learning. *SN Social Sciences*, 1. <https://doi.org/10.1007/s43545-021-00254-y>
- Bond, C., Lancaster, G. A., Campbell, M., Chan, C., Eddy, S., Hopewell, S., Mellor, K., Thabane, L., & Eldridge, S. (2023). Pilot and feasibility studies: Extending the conceptual framework. *Pilot and Feasibility Studies*, 9, 24. <https://doi.org/10.1186/s40814-023-01233-1>
- Braun, V., & Clarke, V. (2019). Reflecting on Reflexive Thematic Analysis. *Qualitative Research in Sport, Exercise and Health*, 11, 589-597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Fetters, M. D., & Molina-Azorin, J. F. (2020). Utilizing a mixed methods approach for conducting interventional evaluations. *Journal of Mixed Methods Research*, 14(2), 131-144. <https://doi.org/10.1177/1558689820912856>
- Field, A.P. (2018) *Discovering Statistics Using IBM SPSS Statistics*. 5th Edition, Sage, Newbury Park.
- Fox, J., & Weisberg, S. (2023). *car: Companion to Applied Regression*. [R package]. Retrieved from <https://cran.r-project.org/package=car>.
- Fredricks, J. A., Filsecker, M., & Lawson, M. A. (2016). Student engagement, context, and adjustment: Addressing definitional, measurement, and methodological issues. *Learning and Instruction*, 43, 1-4. <https://doi.org/10.1016/j.learninstruc.2016.02.002>
- Guo, Y., Xu, J., & Chen, C. (2022). Measurement of engagement in the foreign language classroom and its effect on language achievement: the case of Chinese college EFL students. *International Review of Applied Linguistics in Language Teaching*, 0. <https://doi.org/10.1515/iral-2021-0118>
- Hair, J. F., Babin, B. J., Anderson, R. E., & Black, W. C. (2019). *Multivariate Data Analysis* (8th ed.). Cengage Learning. <https://www.cengage.uk/c/multivariate-data-analysis-8e-hair-babin-anderson-black/9781473756540/?searchIsbn=9781473756540>
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275-285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Han, R., Alibakhshi, G., Lu, L., & Labbafi, A. (2024). Digital communication activities and EFL learners' willingness to communicate and engagement: Exploring the intermediate language learners' perceptions. *Heliyon*, 10. <https://doi.org/10.1016/j.heliyon.2024.e25213>
- Hanifah, R., Setyaningsih, E., & Sumardi, S. (2022). Efl Students' Engagement During Emergency Remote Teaching: Does Technology Matter? *Journal of Languages and Language Teaching*. <https://doi.org/10.33394/jollt.v10i1.4188>
- Lepp M, Luik P and Tark TM (2022) How Can Web Lessons Be Taught to Reduce Screen Fatigue, Motivational, and Concentration Problems in Different Disciplines?. *Front. Sociol.* 7:871770. doi: 10.3389/fsoc.2022.871770

- Li, G., Sun, Z., & Jee, Y. (2019). The more technology the better? A comparison of teacher-student interaction in high and low technology use elementary EFL classrooms in China. *System*. <https://doi.org/10.1016/j.system.2019.05.003>
- Ljalikova, A., Heero, A., Anspal, T., Saar, M., Våljataga, T., Meristo, M., & Batrakova, E. (2025). Conceptualizing and enhancing student engagement through technology: Perspectives from foreign language teachers in Estonia. *Language Teaching Research*. <https://doi.org/10.1177/13621688251392992>
- Lokollo, N. C. E., & Mali, Y. C. G. (2024). Speak More, Students! Harnessing Technology for Active Students' Engagement in EFL English-Speaking Classes. *OKARA: Jurnal Bahasa dan Sastra*. <https://doi.org/10.19105/ojbs.v18i1.12653>
- Lu, C., Bulut, O., Demmans Epp, C., & Gierl, M. (2025). Impacts of engagement on academic outcomes in technology-enhanced learning. *Distance Education*, 46(2), 318-337. <https://doi.org/10.1080/01587919.2024.2373297>
- Ma'rifah, U., Masrifah, N., & Arifani, Y. (2021). Technological Use in EFL Instruction: Investigating Teachers' Pedagogical Beliefs and Students' Learning Engagement. *Lensa: Kajian Kebahasaan, Kesusastraan, dan Budaya*. <https://doi.org/10.26714/lensa.11.1.2021.17-32>
- Metaria, M., & Cahyono, B. (2024). EFL students' engagement in the post-pandemic teaching: Does technology matter?. *Journal on English as a Foreign Language*. <https://doi.org/10.23971/jevl.v14i1.6503>
- Nhan, L. K. (2024). Investigating EFL English-Majored Students' Perceptions of the Effectiveness of Communication Language Teaching. *International Journal of Innovative Science and Research Technology (IJISRT)*. <https://doi.org/10.38124/ijisrt/ijisrt24oct1638>
- Plonsky, L. (2017). Quantitative Research Methods. In *The Routledge Handbook of Instructed Second Language Acquisition* (pp. 505-521). Routledge. <https://doi.org/10.4324/9781315676968-28>
- Purnawati, P., Rafli, Z., & Setiadi, S. (2024). The Students' Engagement in Foreign Language Learning through ICT Incorporation. *Journal of English Language Teaching and Linguistics*. <https://doi.org/10.21462/jeltl.v9i1.1281>
- R Core Team (2024). *R: A Language and environment for statistical computing*. (Version 4.4) [Computer software]. Retrieved from <https://cran.r-project.org>. (R packages retrieved from CRAN snapshot 2024-08-07).
- Saqr, M., López-Pernas, S., Helske, S., & Hrastinski, S. (2023). *The longitudinal association between engagement and achievement varies by time, students' profiles, and achievement state: A full program study*. *Computers & Education*, 199, 104787. <https://doi.org/10.1016/j.compedu.2023.104787>
- Souza, R. D. (2021). Language Teachers' Pedagogical Orientations in Integrating Technology in the Online Classroom: Its Effect on Students Motivation and Engagement. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*. <https://doi.org/10.17762/turcomat.v12i10.5268>
- Sweller, J., van Merriënboer, J. J., & Paas, F. (2019). Cognitive Architecture and Instructional Design: 20 Years Later. *Educational Psychology Review*, 31, 261-292. <https://doi.org/10.1007/s10648-019-09465-5>
- Teng, Y., & Wang, X. (2021). The effect of two educational technology tools on student engagement in Chinese EFL courses. *International Journal of Educational Technology in Higher Education*, 18. <https://doi.org/10.1186/s41239-021-00263-0>
- The jamovi project (2024). *jamovi*. (Version 2.6) [Computer Software]. Retrieved from <https://www.jamovi.org>.
- Ting, H., Memon, M. A., Thurasamy, R., & Cheah, J.-H. (2025). Snowball sampling: A review and guidelines for survey research. *Asian Journal of Business Research*, 15(1), 1-?. <https://doi.org/10.14707/ajbr.250186>
- Trust, T. (2018). Why Do We Need Technology in Education? *Journal of Digital Learning in Teacher Education*, 34(2), 54-55. <https://doi.org/10.1080/21532974.2018.1442073>
- Yoldaş, B. (2026). Investigating EFL teachers' perceptions of technology use on student engagement: A pilot study in Türkiye. *Journal of Language, Literature, Social, and Cultural Studies*, 4(1), 91-107. <https://doi.org/10.58881/jllscs.v4i1.457>
- Zhang, Y., & Miao, Z. (2025). Enhancing EFL Learners' Engagement and Motivation Through Immersive Technologies: The Role of Artificial Intelligence, Augmented Reality, Virtual Reality, and Mobile Applications. *European Journal of Education*. <https://doi.org/10.1111/ejed.70128>

Zhou, C., & Hou, F. (2024). Can AI Empower L2 Education? Exploring Its Influence on the Behavioural, Cognitive and Emotional Engagement of EFL Teachers and Language Learners. *European Journal of Education*. <https://doi.org/10.1111/ejed.12750>