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Demographics and Technology Integration in Teaching English on the Relationship Between Teachers' Technology Self-Efficacy and Performance

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Abstract The importance of using technology to teach English during pandemic has grown as a result of its many advantages for maintaining educational continuity. This study determined the effects of demographics and teachers' technology integration in teaching English in the relationship between teachers' technology self-efficacy and performance among the tertiary teachers of a public Higher Education Institution (HEI) in the 2nd district of Misamis Oriental during the school year 2022-2023. A total of 91 teachers were randomly chosen as participants of this study. The descriptive-correlational analysis research method was employed. It used univariate and bivariate statistics to measure the levels of and the relationships between variables. Hence, the study also used regression analysis to assess the significance of mediation effect and analysis for moderating effect. Using a questionnaire, the participants' profile were determined. Majority of teachers are young, female, and employed full-time, have master's degrees, the sample includes many educators with only one to three years of experience. Teachers show a high level of technology self-efficacy and positively correlates with planning, instruction, assessment, and teaching performance. It also reveals a significant relationship between technology self-efficacy and integration. Additionally, technology integration was a significant predictor of teaching performance. However, despite the significant relationship between technology self-efficacy, technology integration, and teaching performance, the study did not find evidence to support technology integration as a mediating factor. Thus, sex at birth moderates the relationship between technology self-efficacy and teaching performance. The findings of the study recommends to provide professional development programs in enhancing teachers' self-efficacy using technology, incorporate technology integration as an essential component of English courses, as well as, adopt gender-inclusive approaches in supporting and empowering female teachers.

Keywords: *self-efficacy, teacher's performance, technology integration, mediation analysis, moderation analysis*

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1. Introduction

For educators who seek to engage students in student-centered learning in the 21st century classroom, transforming technology into a blended learning experience has become a must. While a good and highly engaged student-centered learning experience can be created without technology, technology can enhance the language learning experience. Technology permits instructors to modify classroom activities, increasing the language-learning process. The significance of technology as a tool for teachers to promote language learning for their students continues to rise. It has assisted and enhanced language proficiency. It is determined that the majority of Filipino students in tertiary education are likely to use technology in the classroom for good outcomes. It has also provided the chance to internalize the concept of digitalization and integrated learning in developing language skills.

However, the pandemic has had a major impact on this education technology transition. The COVID-19 pandemic forced teachers, whether they were techno-pedagogically prepared or not, into a distant learning and hybrid learning environment [1]. It has significantly disrupted education systems worldwide, and English language teaching is no exception. Although most colleges and universities throughout the world incorporate some sort of online education into their curricula, it may prove difficult in the Philippine setting. It has drastically hastened educational technology integration for language learning, as instructors across the nation hurry to go online as quickly as possible.

Teaching English during pandemic with the aid of technology has become increasingly important as it offers a range of benefits that can help ensure continuity in education. Technology integration in teaching English is essential to providing students with an engaging and

effective learning experience. It offers a range of benefits that enhance the learning process, including facilitating access to authentic materials, providing opportunities for personalized learning, fostering collaboration, and preparing students for the future. By embracing technology in their teaching practices, English teachers can help students develop their language skills and equip them with the necessary skills for success in today's world.

While technology can offer many benefits to English language teaching, it can also present several challenges. English teachers in both international and Philippine settings may face various challenges when integrating technology into their teaching practices. Teachers' limited pedagogical familiarity with technology integration, virtual experiences, and online instruction made the abrupt pivot and rapid transition to remote modes of teaching [2].

Since language learners now interpret and encode information based on their perceptions and experiences as we move to distance learning, technology plays an important role. This also supports the theory of experiential learning [3] which asserts that we construct and refine our ideas based on the experiences that we have in the real world using such tools. It is the act of creating new knowledge through the analysis and interpretation of previously gained experience. SAMR Model Approach is anchored on this idea as it supports learners learn best when teachers provide opportunities for contact with technology. On the basis of the SAMR model, this study demonstrates Teachers' Technology Integration as a mediating variable in teaching English language proficiency.

Furthermore, teachers' attitudes toward technology and its application in the classroom are an additional important variable that affects the integration of technology. Bandura [4] established the theoretical foundation for self-efficacy, which is rooted in social cognitive theory. It posited that teachers' self-efficacy has to do with how they think they can do well at a certain task. It also has to do with how they use and integrate technology in the classroom. Through technology-supported instruction, teachers can then use their self-efficacy to make their lessons more effective [5]. When applied in this manner, the Teacher's Technology Self-Efficacy based on TPACK model has the potential to assist in closing the gap.

Another conceptual basis of this study is the Theory of Performance [6]. This lens emphasizes the importance of teachers' performance characteristics to describe how effective teachers are. Also, it tends to see good teaching as an individual task, so it looks for ways to make it easier to find and place good teachers in schools with a lot of minorities and poor students. This framework can be used to explain performance as well as performance improvements.

The term teachers' performance refers to the accomplishment of a specified task or assignment in accordance with a set of established criteria, such as accuracy, precision, thoroughness, rapidity, and efficiency.

Granting that teachers' performance must conform to the specifications of delivery of knowledge transfer across time and technology, teachers who carefully plan their instruction, employ effective instructional strategies, and utilize appropriate assessment techniques are better equipped to meet the diverse needs of their students. Grant, et.al [7] explore these process in teaching as Planning, Instruction and Assessment. These are the integral components of the teaching process that work together to ensure effective learning outcomes.

In teaching English then, it is necessary to provide students with learning opportunities that will assist them in reaching their full communicative potential. Teachers must be proficient enough in the language to effectively instruct students in becoming analytical and critical communicators using English. In a nutshell, the teaching English language could be associated by factors such as teachers' technology integration, self-efficacy, performance as well as demographic profile.

2. Methodology

This study employed a descriptive-correlational analysis as a design of study. It used univariate (e.g., percentage distribution, mean and standard deviation) and bivariate (e.g., correlation) statistics to measure the levels of and the relationships between variables. The participants of the study were 91 full-time and part-time English teachers of a public Higher Education Institution (HEI) in the 2nd district of the province of Misamis Oriental, during the School Year 2022-2023.

A modified research questionnaire was employed as the main tool for gathering the data in this study. There are ten (10) questions for each category in teachers' technology self-efficacy and has a total of 40 items. The questions are grouped below according to each category in the TPACK model: Technology Knowledge, Technological Content Knowledge, Technological Pedagogical Knowledge, and Technological Pedagogical Content Knowledge. There are ten (10) questions for each level of technology integration in this questionnaire, which has a total of 40 items. The questions are grouped below according to each category in the SAMR model: Substitution, Augmentation, Modification, and Redefinition. There are fifteen (15) questions in total in teachers' performance. The items for teachers' technology integration and teachers' performance used in this study is conceptualized and classified according to Planning, Instruction, and Assessment [7].

Furthermore, The instrument used in this study went through content validity and reliability. An expert in the field served as the validator of the instrument, two (2) Doctor of Philosophy in Education and two (2) Education Technology specialists. To indicate the internal consistency of scale items for each construct, thirty (30) teachers from the HEI of the 1st District, who were not part of the study were asked to fill out a preliminary version of the modified questionnaire. Cronbach's alpha was used to check for inconsistencies in rating survey questions before the results were released.

Hence, to translate the impact of the independent variable to the dependent variable, the mediating and moderating effect was applied. To conduct a mediation analysis, this study conducted multiple regression to estimate the indirect effect of the independent variable on the dependent variable through the mediator. In the context of this study, the teacher's technology integration based on the SAMR model, the teacher's technology self-efficacy based on the TPACK model, and the teacher's performance were examined and tested in terms of association by means of a multivariate

regression analysis. In addition, demographic factors such as Age, Sex at Birth, Highest Educational Attainment and Years of service are the conceptual model as the moderating factors between Teachers' Technology Self-Efficacy and Teachers' Performance.

3. Results and Discussion

This section presents the analysis, results, and discussion of the data gathered by the researcher. The manner of interpretation and presentation is arranged according to the order of the problem in this study.

3.1. Respondents' Demographic Profile

Results revealed in the demographic profile analysis the distribution of teachers' age shows a relatively even spread, with a higher concentration of younger teachers falling within the 20-34 age range. The number of teachers gradually decreases as age increases, suggesting a potential need for recruitment or retention efforts to maintain a balanced workforce across different age groups.

Among the sample, most teachers are female, accounting for 72.5%. The data indicated a sex at birth disparity in the teaching profession, with a significantly higher proportion of female teachers than male teachers. This finding was similar with the broader global trend where teaching is predominantly seen as a female-dominated profession. Additionally, the underrepresentation of male teachers in the profession can have implications for the diversity and inclusivity of education. Research suggests that having a diverse teaching staff with both male and female role models can provide students with a broader range of perspectives, experiences, and mentorship opportunities, leading to enhanced learning outcomes and increased engagement for all students . Efforts should be made to encourage more men to enter the teaching profession and promote gender balance in schools.

The largest group of teachers holds master's units, representing 35.2%. Additionally, most teachers are employed full-time, comprising 69.2% of the total sample. The results indicated a significant proportion of teachers working full-time, suggesting a stable and consistent presence in educational institutions. Full-time employment allows teachers to engage in comprehensive planning, curriculum development, and student support, leading to a more immersive teaching experience [8]. However, the presence of part-time teachers should be noticed. The high percentage of part-time teachers implies a need for flexibility in the teaching workforce. Part-time positions can provide opportunities for individuals with specific circumstances, such as those pursuing additional studies or managing other commitments alongside teaching [9]. It allows schools to tap into specialized expertise or address temporary staffing needs.

Regarding teaching experience, the largest group consists of teachers with 1-3 years of experience, representing 35.2% of the total sample. The implications of the distribution of teaching experience were twofold. Firstly, providing appropriate support and professional development opportunities for novice teachers with 1-3 years of experience is essential. Early career support and mentoring programs can help novice teachers navigate the profession's challenges, build resilience, and improve job satisfaction and retention rates [9]. Secondly, schools should recognize and leverage the expertise of teachers with 16 years and above of experience. These experienced educators can serve as instructional leaders and mentors, sharing their knowledge and best practices with their colleagues, thereby contributing to the overall quality.

3.2. Level of Teachers' Technology Self-Efficacy in Teaching English Courses Based on the TPACK Model

When examining teachers' technology self-efficacy in teaching English courses based on the TPACK model, statistics revealed that teachers exhibit very high technology self-efficacy in various aspects. The indicators with the highest mean scores included the use of electronics-based technologies (Mean=3.52, SD=0.62), essential software programs (Mean=3.58, SD=0.68), and mobile learning tools with internet support (Mean=3.53, SD=0.60). These results indicated a very high level of proficiency and confidence among teachers in utilizing these technological tools in their English courses.

Table 1. Consolidated Findings of the Level of Teachers' Technology Self-Efficacy in Teaching English Courses Based on the TPACK Model

Teachers' Technology Self-Efficacy (TSE)	Mean	Sd	Interpretation
Technology Knowledge	3.26	.56	Very High
Technological Content Knowledge (TCK)	3.40	.56	Very High
Technological Pedagogical Knowledge (TPK)	3.44	.54	Very High
Technological Pedagogical Content Knowledge (TPACK)	3.44	.55	Very High
Total Measure	3.39	.53	Very High

Note: 3.26-4.00 Strongly Agree (Very High)
1.76-2.50 Disagree (Moderate)

The consolidated findings shown in Table 1 demonstrated that teachers had a very high level of self-efficacy in various dimensions of technology integration in English language teaching based on the TPACK model. These findings have significant implications for English language teaching, as it suggested that teachers feel confident in their ability to integrate technology into their instructional practices effectively. When teachers possessed high levels of self-efficacy in utilizing technology, they are more likely to incorporate it seamlessly and purposefully into their lessons, resulting in enhanced student engagement, motivation, and learning outcomes [10].

Teachers' strong self-efficacy in technology knowledge mean their ability to effectively use various technological tools and software, addressing potential challenges and troubleshooting issues that may arise during instructional activities. This competence enables them to create a conducive learning environment that supports students' technological literacy development [11].

The high self-efficacy in technological content knowledge suggested that teachers feel confident in

selecting and utilizing technologies that facilitate language learning and enhance students' understanding of content knowledge. By leveraging appropriate technological tools, teachers can provide interactive and engaging learning experiences that cater to diverse learning needs [11,12].

Furthermore, teachers' high self-efficacy in technological pedagogical knowledge only probed their ability to effectively integrate technology into pedagogical practices, such as choosing appropriate teaching techniques, strategies, and assessment methods. This integration allows for more dynamic and interactive instruction, improving learning outcomes and student engagement [13].

The strong self-efficacy in technological pedagogical content knowledge highlighted teachers' competence in integrating technology, content knowledge, and pedagogical knowledge to design practical lessons and assessments. This integration promotes meaningful learning experiences and enables teachers to assess and provide personalized and timely feedback [13,14].

Thus, the consolidated findings demonstrated that teachers have a very high level of self-efficacy in various dimensions of technology integration in English language teaching based on the TPACK model. These results showed that teachers feel confident in utilizing technology effectively to support instruction, enhance content knowledge, employ pedagogical strategies, and create a technology-rich learning environment. The findings underscored the importance of fostering teachers' technological competencies through professional development initiatives to harness the full potential of technology in English language teaching settings.

3.3. Level of Teachers' Technology Integration in Teaching English Courses Based on the SAMR Model

Table 2 presents an overview of how teachers integrate technology into their teaching of English courses, using the SAMR model to assess their practices in the planning, instruction, and assessment stages. The mean scores reflected the average level of technology integration, while the standard deviation illustrated the variability among teachers in their approaches to technology integration.

Table 2. Level of Teachers' Technology Integration in Teaching English Courses Based on the SAMR Model

Teachers' Technology Integration	Mean	Sd	Interpretation
Planning	3.32	.57	Redefinition
Instruction	3.32	.60	Redefinition
Assessment	3.26	.64	Redefinition
Total Measure	3.31	.57	Redefinition

Note: 3.26-4.00 Always (Redefinition) 1.76-2.50Rarely (Modification)
2.51-3.25 Sometimes (Augmentation) 1.00-1.75Never (Substitution)

Table 2 presents an overview of how teachers integrate technology into their teaching of English courses, using the SAMR model to assess their practices in the planning, instruction, and assessment stages. The mean scores reflected the average level of technology integration, while the standard deviation illustrated the variability among teachers in their approaches to technology integration.

The results indicated that teachers consistently integrate technology at a redefinition level across all stages. In the planning stage, teachers demonstrated a mean score of 3.32, indicating that they used technology to transform their planning practices. This result included designing engaging lesson plans, creating multimedia materials, and organizing instructional resources using digital tools and resources [15]. By leveraging technology during planning, teachers can improve the quality and efficiency of their instructional preparation.

Similarly, in the instruction stage, teachers also scored an average of 3.32, suggesting a redefinition level of technology integration. This result implied teachers use technology to redefine their instructional methods and create new student learning experiences. They employed PowerPoint presentations, interactive smart boards, multimedia resources, and collaborative platforms to engage students, foster critical thinking, and promote active learning [16]. Integrating technology at this stage allows for more interactive and student-centered instruction.

Furthermore, in the assessment stage, teachers scored an average of 3.26, indicating a redefinition level of technology integration. This finding implied that teachers employ technology to transform their assessment practices, such as using online platforms for test administration, providing feedback through digital means, and enabling students to publish their work online [17]. Technology integration in assessment enhances the evaluation process's authenticity, efficiency, and effectiveness.

Overall, the average measure of teachers' technology integration across all stages was 3.31, indicating a consistent interpretation of redefinition. This result suggested that teachers actively integrate technology throughout the teaching process to redefine traditional practices and create new opportunities for learning and engagement. This finding aligns with the goals of 21st-century education, where technology plays a crucial role in preparing students for the digital age [18].

These findings have significant implications for teacher professional development and educational policy. It is essential to provide teachers with ongoing training and support to effectively integrate technology into their planning, instruction, and assessment practices [19]. Professional development programs should focus on helping teachers develop technological pedagogical content knowledge (TPACK) and foster a growth mindset toward technology integration [20]. Additionally, educational policymakers should prioritize providing the necessary infrastructure, resources, and guidelines to support teachers in their technology integration efforts [21].

Hence, the result demonstrated that teachers consistently integrate technology across the planning, instruction, and assessment stages of teaching English courses, with an overall interpretation of redefinition. This result indicated that teachers actively use technology to transform their teaching practices and create new learning opportunities for students. By providing appropriate support and resources, educators and policymakers can continue to promote effective technology integration and enhance student learning outcomes in the digital age.

3.4. Level of Teachers' Performance in Teaching English Courses

Regarding teachers' performance in teaching English courses, they exhibit outstanding performance in planning, instruction, and assessment, indicating their strong competencies in these areas.

Table 3. Consolidated Findings of the Level of Teachers' Performance in Teaching English Courses

Indicators	Mean	Sd	Interpretation
Planning	3.36	.50	Very Good
Instruction	3.53	.51	Very Good
Assessment	3.57	.50	Very Good
Total Measure	3.42	.47	Very Good

Note: 3.26-4.00 Strongly Agree (Very Good) 1.76-2.50 Disagree (Fair) 2.51-3.25. Agree (Good) 1.00-1.75 Strongly Disagree (Poor)

Table 3 presents the consolidated findings of teachers' performance in teaching English courses. The mean scores and standard deviations were provided for the three key areas: planning, instruction, and assessment. The results indicated a very good level of performance across all areas, as indicated by the mean scores falling within the "Very Good" interpretation range

Regarding planning, the mean score was 3.36, with a standard deviation of 0.50. This result suggested that teachers excel in preparing detailed and up-to-date information about course assignments, objectives, and assessments, engaging in structured reflection, and making justifiable instructional changes based on assessments. These planning practices demonstrated high organization and dedication to delivering practical English courses.

For instruction, the mean score was 3.53, with a standard deviation of 0.51. This result indicated that teachers demonstrate a strong commitment to improving student learning and retention, deliver challenging content that fosters higher-order thinking, actively engage students in the course materials, and utilize effective instructional strategies to facilitate student ownership of learning. These instructional practices highlight teachers' ability to create engaging and meaningful student learning experiences.

Regarding assessment, the mean score was 3.37, with a standard deviation of 0.50. This result suggested that teachers maintain consistent and timely communication with students, have a detailed assessment plan that includes innovative formative and summative assessments, maintain an effective system for evaluating student learning, provide specific and actionable feedback, and deliver assignments and assessments in a logical order and pace. These assessment practices demonstrated teachers' commitment to a fair and comprehensive evaluation of student progress and learning outcomes.

The total measure, which combined the three areas, was 3.42, with a standard deviation of 0.47. This result further emphasized the outstanding level of teachers' performance in teaching English courses, as evidenced by their strong performance in planning, instruction, and assessment.

The findings have significant implications for English education. Teachers' effective planning, instructional strategies, and assessment practices play crucial roles in promoting student engagement, achievement, and overall learning outcomes. Research supports the importance of these factors in enhancing students' language proficiency and critical thinking skills. For example, a study [22] emphasized the significant impact of effective instructional strategies on student learning. Furthermore, Chappuis et al. [23] review highlighted the importance of well-designed assessments in supporting student growth and informing instructional decisions.

Thus, the findings demonstrated the outstanding teachers' performance in planning, instruction, and assessment in English courses. These results reflect their commitment to effective teaching practices and student-centered learning. The implications of these findings underscored the importance of continued support and professional development for teachers in honing their skills and ensuring high-quality English education.

3.5. Relationship Between the Teachers' Technology Self-Efficacy in Teaching English Courses and Teachers' Performance

The results revealed significant positive correlations between technology self-efficacy and teachers' performance across all measures. For technology knowledge, there was a significant positive correlation with planning ($r=0.402$, $p<0.001$), instruction ($r=0.487$, $p<0.001$), assessment ($r=0.406$, $p<0.001$), and the total measure of teaching performance ($r=0.467$, $p<0.001$).

This result suggested that teachers' confidence in their technological skills and knowledge is associated with better performance in planning, instruction, and assessment in English courses. Having a positive correlation between technology self-efficacy and teacher's performance means that there is a direct relationship between these two variables in the context of technology use by teachers. Specifically, it meant that as the level of technology self-efficacy increases among teachers, their performance in utilizing technology in their teaching practices tends to improve.

Similarly, technological content knowledge showed significant positive correlations with planning ($r=0.275$, $p=0.008$), instruction ($r=0.445$, $p<0.001$), assessment ($r=0.362$, $p<0.001$), and the total measure of teaching performance ($r=0.391$, $p<0.001$). These findings indicated that teachers' knowledge of how to use technology effectively in delivering course content is associated with higher performance in all aspects of teaching.

Technological pedagogical knowledge demonstrated significant positive correlations with planning ($r=0.358$, $p=0.001$), instruction ($r=0.546$, $p<0.001$), assessment ($r=0.401$, $p<0.001$), and the total measure of teaching performance ($r=0.471$, $p<0.001$). This result suggested that teachers' understanding of integrating technology into pedagogical practices positively impacts their performance in English courses.

Table 4. Relationship between the Teachers' Technology Self-Efficacy in Teaching English Courses and Teachers' Performance

TSE	Planning		Instruction		Assessment		TP (Total Measure)	
	R (P)	Remark	R (P)	Remark	R (P)	Remark	R (P)	Remark
TK	.402*** (.000)	Sig.	.487*** (.000)	Sig.	.406*** (.000)	Sig.	.467*** (.000)	Sig.
TCK	.275*** (.008)	Sig.	.445*** (.000)	Sig.	.362*** (.000)	Sig.	.391*** (.000)	Sig.
TPK	.358*** (.001)	Sig.	.546*** (.000)	Sig.	.401*** (.000)	Sig.	.471*** (.000)	Sig.
TPACK	.376*** (.000)	Sig.	.561*** (.000)	Sig.	.388*** (.000)	Sig.	.479*** (.000)	Sig.
Total Measure	.369*** (.000)	Sig.	.533*** (.000)	Sig.	.407*** (.000)	Sig.	.472*** (.000)	Sig.

Note: r (p) means r-value (p-value) ***Correlation is significant at 0.001
Sig. means significant (the correlation is significant)

Furthermore, technological pedagogical content knowledge exhibited significant positive correlations with planning (r=0.376, p<0.001), instruction (r=0.561, p< 0.001), assessment (r=0.388, p< 0.001), and the total measure of teaching performance (r=0.479, p< 0.001). These results implied that teachers' ability to apply technology to specific content areas and pedagogical approaches is associated with higher performance in teaching English.

Overall, the total measure of technology self-efficacy showed significant positive correlations with planning (r=0.369, p<0.001), instruction (r=0.533, p<0.001), assessment (r=0.407, p<0.001), and total measure of teaching performance (r=0.472, p<0.001). This result implied that teachers' confidence in using technology in English courses was strongly related to their overall teaching performance.

The significant positive correlations between technology self-efficacy and teaching performance suggested that teachers with higher confidence and competence in using technology are more likely to perform better in planning, instruction, and assessment in English courses. These findings were similar with previous research that highlights the positive impact of technology self-efficacy on teaching effectiveness [15,19].

Thus, the results proved the positive relationship between teachers' technology self-efficacy and their performance in English courses. Enhancing teachers' technology self-efficacy through targeted professional development and support can contribute to improved teaching practices and student outcomes in English education.

3.5.1. Simple Linear Regression of Explaining Teachers' Technology Integration by Technology Self-Efficacy

Table 5 presents the simple regression results of the teachers' technology self-efficacy to explain teachers' technology integration in teaching English courses based on the SAMR model.

The simple linear regression analysis results indicated a significant relationship between teachers' technology integration and their technology self-efficacy. The regression model showed that technology self-efficacy significantly predicted technology integration (β=0.714, t=9.631, p<0.001). The slope coefficient was 0.778 which meant that for every one-unit increase in technology self-efficacy, there is a corresponding 0.778-unit increase in the technology integration of the teachers. This finding illustrated that as teachers' self-efficacy in using technology increases, their technology integration in teaching English courses also increases.

Table 5. Simple Linear Regression of Explaining Teachers' Technology Integration by Technology Self-Efficacy

Predictor	Unstandardized Coefficients		*β*	t-value	p-value	Remarks
	B	S. E.				
(Constant)	.668	.277	--	2.415	.018	*Significant*
Technology Self-Efficacy	.778	.081	.714	9.631***	.000	*Significant*
Fitted Regression Model $\hat{Y}=0.668+.778X$						

Note: R^2 = .510 ANOVA for Regression: F=92.759, p<.01 ***p<.001

The R^2 value of 0.510 suggested that 51% of the variance in technology integration can be explained by technology self-efficacy. This result indicated a moderate-to-strong relationship between these variables. The ANOVA for regression was significant (F=92.759, p<0.01), further supporting the overall significance of the regression model.

These findings were aligned with previous research that has emphasized the importance of teachers' self-efficacy in technology integration [19]. Teachers with higher confidence and belief in their ability to use technology are more likely to incorporate it effectively into their instructional practices.

The significant relationship between technology self-efficacy and technology integration implied that enhancing teachers' self-efficacy can positively impact their integration of technology in teaching English courses. Professional development programs and interventions should promote teachers' confidence and competence in using technology, providing them with the necessary support and resources to integrate technology effectively.

By recognizing the significance of technology self-efficacy and its positive influence on technology integration, educational institutions can design targeted strategies to empower teachers in leveraging technology to enhance English language instruction and student learning outcomes. Individuals with higher levels of technology self-efficacy are more likely to adopt and accept new technologies. Their confidence in their abilities allows them to overcome barriers and uncertainties associated with technology, making them more open to exploring and

embracing technological tools and innovations. For example, research [24] found that teachers with higher levels of technology self-efficacy were more likely to integrate technology into their instructional practices, highlighting the positive influence of technology self-efficacy on technology adoption and acceptance. It holds great significance in empowering individuals to embrace and utilize technology in various domains.

3.5.2. Simple Linear Regression of Explaining Teachers' Performance by Technology Integration

The simple linear regression analysis results revealed a significant relationship between teachers' technology integration and their performance in English courses. The regression model indicated that technology integration significantly predicts teachers' performance ($\beta=0.391$, $t=4.002$, $p<0.001$). The slope coefficient is 0.317 which indicated that for every one-unit increase in technology integration, there is a corresponding 0.317-unit increase in the performance of the teachers. This result implied that as teachers' technology integration in English courses increases, their overall performance improves.

The R^2 value of 0.153 suggested that approximately 15.3% of the variance in teachers' performance can be explained by technology integration. Although the explained variance is modest, the ANOVA for regression was significant ($F=16.019$, $p<0.01$), indicating the overall significance of the regression model.

Table 6. Simple Linear Regression of Explaining Teachers' Performance by Technology Integration

Predictor	Unstandardized Coefficients		β	t-value	p-value	Remarks
	B	S. E.				
(Constant)	2.377	.265	--	8.970	.000	*Significant*
Technology Integration	.317	.079	.391	4.002***	.000	*Significant*
Fitted Regression Model $\hat{Y}=2.377+.317X$						

Note: R^2 = .153 ANOVA for Regression: F=16.019, p<.01 ***p<.001

When teachers effectively integrated technology into their instructional practices, it can enhance their ability to engage students, facilitate active learning, and promote higher-order thinking skills.

The significant relationship between technology integration and teachers' performance implied the importance of incorporating technology into English language instruction. Educational institutions and teacher training programs should provide support and professional development opportunities that equip teachers with the knowledge and skills to integrate technology effectively. These ideas include training on digital tools, designing technology-enhanced activities, and leveraging online resources to create engaging and interactive learning experiences. By recognizing the role of technology integration in enhancing teachers' performance, schools can invest in creating a technology-rich environment, providing access to relevant resources and technologies, and fostering a culture of innovation and continuous professional growth.

Ongoing support and mentoring can help teachers overcome challenges and build confidence in utilizing technology to maximize student learning outcomes. Overall, the significant relationship between technology integration and teachers' performance underscored the need for educators to embrace technology as a valuable tool in their teaching practices to create impactful and engaging learning environments for students.

3.5.3. Mediation Analysis of Technology Integration on the Relationship between the Self-Efficacy and Teaching Performance of Teachers

Table 7 shows the test of the mediating effect of technology integration in teaching English on the relationship between teachers' self-efficacy and their teaching performance.

The study examined whether technology integration mediates the relationship between teachers' self-efficacy and their teaching performance. The results revealed that technology integration does not act as a mediating factor in this relationship. The indirect effect of technology self-efficacy (TSE) on teaching performance (TP) through technology integration (TI) was not statistically significant ($\beta=0.077$, $p=0.412$). It presented that TI was not important because in TSE alone was responsible in the increase of TP.

Table 7. Mediation Analysis Results of Testing the Mediating Effect of Technology Integration on the Relationship between the Self-Efficacy and Teaching Performance of Teachers

Type	Effect	β	z-value	p-value	Remarks
Indirect	TSE → TI → TP	.077	.821	.412	*Not significant*
Component	TSE → TI	.714	9.739***	<.001	*Significant*
	TI → TP	.108	.823	.410	*Not significant*
Direct	TSE → TP	.395	3.003*	.003	*Significant*
Total	TSE → TP	.473	5.086***	<.001	*Significant*

Note: TSE-Technology Self-Efficacy TI-Technology Integration TP-Teacher Performance
Test of Mediation using Sobel Test: Sobel test stat=.8119, p=.417 (not significant)

However, the direct effect of TSE on TP was significant ($\beta=0.395$, $p=0.003$), indicating that while technology integration plays a role in mediating the relationship, it does not fully account for the relationship.

Also, the increased in TP was not a result of TI but solely because of TSE. Teachers with high self-efficacy were more likely to seek out opportunities for training and development in educational technology, enabling them to enhance their instructional strategies accordingly. Furthermore, teachers' confidence and competence in using technology positively impact their performance [15]. When teachers feel confident in their technological abilities, they are more likely to explore new tools, experiment with different instructional approaches, and adapt to changing technological environments. This confidence leads to more effective technology integration, facilitating a dynamic and engaging learning environment [25].

Moreover, result showed that TI was not significant to TP. Although technology integration can be a powerful

tool in education, providing opportunities for interactive learning, personalized instruction, and access to vast amounts of information; however, it is important to acknowledge that technology integration alone does not guarantee improved teacher performance or student outcomes and may influence by various factors. These include a lack of training and support for teachers [19], an overemphasis on technology rather than pedagogy [20], insufficient resources and infrastructure [26], misalignment with curriculum and assessment practices [27] and individual teaching styles and preferences [28]. To ensure significant positive outcomes, teachers need adequate training, ongoing support, access to resources, and the ability to align technology integration with their pedagogical approaches and curriculum goals. Effective technology integration occurs when it is combined with thoughtful pedagogy, leading to improved teacher performance and enhanced student learning.

These findings were consistent with prior research emphasizing the importance of self-efficacy in teachers' performance [19,29,30]. Teachers' self-efficacy beliefs regarding their technological skills and abilities positively influence their performance in utilizing technology in the classroom.

The results suggested that while technology integration does not mediate the relationship between self-efficacy and teaching performance, other factors beyond technology integration contribute to teachers' performance. Therefore, it is crucial for teacher training and professional development programs to focus on supporting teachers in developing self-efficacy beliefs related to technology use and providing training on effective technology integration strategies. When individuals believe in their competence, they are more inclined to invest time and effort into improving their technological skills [31]. This continuous improvement enables them to effectively integrate technology into their work, education, or daily activities. Moreover, enhancing teachers' overall pedagogical skills and content knowledge can further improve their performance in the classroom. Continuous professional development is vital for teachers to stay updated on educational research, instructional strategies, and best practices [32]. It helps enhance their skills and acquire new knowledge, thus improving their teaching effectiveness.

3.5.4. Moderation Analysis of Teachers' Demographic in the Relationship Between Technology Self-Efficacy and Teaching Performance of Teachers

Regarding the moderating effects, the analysis demonstrates that age, highest educational attainment, teaching status, and years of teaching experience do not moderate the relationship between technology self-efficacy and teaching performance among teachers.

Thus, the impact of technology self-efficacy on teaching performance does not significantly differ based on age, highest educational attainment, teaching status, and years of teaching experience. However, sex at birth has a moderating effect on this relationship. The results reveal that the relationship between technology self-efficacy and teaching performance differs between male and female teachers. The negative coefficient suggests that the positive impact of technology self-efficacy on teaching performance is weaker for female teachers than for male teachers.

4. Conclusion

Teachers' high technology self-efficacy positively correlates with planning, instruction, assessment, and teaching performance, showcasing their confidence in utilizing technology. As self-efficacy increases, so does technology integration in English teaching, emphasizing its crucial role in driving effective instructional practices and improving outcomes in the classroom. This study elucidates the Sociocultural Theory of Learning [33]; Experiential Leaning [3]; Social Cognitive Theory of Self-Efficacy [4]; and Theory of Performance [6] in teaching English courses.

Moreover, technology integration significantly predicts teaching performance, with teachers who effectively integrate technology into their English courses demonstrating higher overall planning, instruction, and assessment performance. Technology integration significantly predicts teaching performance, but it does not act as a mediating factor between technology self-efficacy and teaching performance. Sex at birth moderates the impact of technology self-efficacy on teaching performance, with a weaker effect for female teachers. Gender-sensitive approaches are necessary to support and enhance female teachers' self-efficacy and effective technology integration for optimal teaching performance.

Given the positive relationship between technology self-efficacy, technology integration, and teaching performance, it is crucial for professional development programs to prioritize enhancing teachers' self-efficacy in using technology. Curriculum planners may consider incorporating technology integration as an essential component of English courses by providing resources, guidelines, and instructional strategies that support teachers in integrating technology purposefully and meaningfully.

School administrators may recognize the importance of technology integration in improving teaching performance. They should provide the necessary resources, infrastructure, and support systems to facilitate the effective use of technology in the classroom. Hence, given the moderating effect of sex at birth on the relationship between technology self-efficacy and teaching performance, it is essential to adopt gender-inclusive approaches in supporting and empowering female teachers. Educational institutions and policymakers should strive to create inclusive and supportive environments that empower female teachers in technology integration.

Thus, it is important to recognize that the inclusion of mediating and moderating variables provides valuable insights but may not capture the entire complexity of the relationships under investigation. Further research exploring additional mediators and clarifying the specific moderating variables could enhance the understanding of how technology self-efficacy, technology integration, and teachers' demographic profile interact to influence teachers' performance.

Future researchers should explore other potential mediators and moderators that may influence the

relationship between technology self-efficacy, technology integration, and teaching performance. Additionally, conducting longitudinal studies and assessing student outcomes related to technology integration would provide a more comprehensive understanding of the long-term effects and benefits of integrating technology in English courses.

Hence, it is important to recognize that the inclusion of mediating and moderating variables provides valuable insights but may not capture the entire complexity of the relationships under investigation. Further research exploring additional mediators and clarifying the specific moderating variables could enhance the understanding of how technology self-efficacy, technology integration, and teachers' demographic profile interact to influence teachers' performance.

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