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Technology-Enhanced ESP Instruction: Improving Law Students' Speaking Skills through Digital Resources

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Abstract: This experimental study aimed to examine the effect of digital resources on improving ESP learners' speaking skills. Using purposive sampling, 52 students were selected as participants. Quantitative data were collected through pretests and posttests and analyzed using a paired-samples t-test, which revealed a significant improvement from the pretest mean score (M = 57.11) to the posttest mean score (M = 67.26), t(51) = –22.67, p < .00. The statistical results revealed a significant difference between pre-test and post-test scores, indicating that the use of digital resources as pre-class material effectively enhanced students' speaking abilities. Qualitative findings from semi-structured interviews further indicated that students perceived the digital resources as supportive, motivating, and helpful in reducing speaking anxiety. These findings suggest that integrating technology through digital resources can foster a more supportive and interactive learning environment, ultimately promoting greater speaking proficiency among ESP learners.

Keywords: speaking proficiency, digital resources, ESP, technology integration

INTRODUCTION

In today's globalized era, speaking proficiency is an essential skill for university students, playing a crucial role in both academic achievement and career development. However, for many ESP learners in Indonesia, achieving adequate speaking proficiency remains a significant challenge due to ineffective teaching methods that fail to provide sufficient support. Meanwhile, technological advancements have introduced new opportunities for enhancing language instruction through digital resources. According to the 2024 EF English Proficiency Index, Indonesia ranks 80 out of 116 countries and 12 in Asia, indicating that the nation's English proficiency remains in the low category. This issue is particularly pressing as speaking has become one of the most in-demand language skills in today's global competition. Global companies now seek employees who are confident and capable of communicating across cultures in a second or foreign language (Jackson, 2015). In response to these evolving needs, college-level English education has increasingly adopted interdisciplinary approaches that emphasize both written and oral communication skills across various social and professional contexts (Su et al., 2022). Therefore, educational institutions and lecturers must ensure that students are well prepared with adequate English skills to remain competitive in the global workforce.

Among the four language skills, speaking plays a central role in English language learning. Dincer (2017) emphasizes that speaking English has become a priority for many learners due to its importance in daily communication. Mastery of speaking allows students to express ideas, share information, and build social relationships. However, achieving fluency

and accuracy remains a significant challenge, particularly for students from non-English-related majors. As Masuram and Sripada (2020) stated, non-native English speakers often face difficulties with prosodic features such as pronunciation, intonation, and stress patterns. These challenges highlight the need for more effective instructional strategies to support students in developing their speaking proficiency.

The incorporation of technology in language teaching appears to offer a promising solution to this challenge. Moreover, the integration of technology in language instruction holds significant promise. Students exhibit greater enthusiasm for acquiring knowledge when exposed to a diverse range of technological tools. Implementing modern technology in language classrooms enhances students' engagement and motivation (Mulyadi, 2021). Additionally, students positively perceive their self-directed learning, encompassing increases in knowledge, skills, competencies, and motivation (Howard & Rohs, 2021). Furthermore, continuous learning is intricately intertwined with the fundamental aspects of learning preparation, including learning resources. Learning resources encompass any tools or materials students might utilize to acquire knowledge, while learning experiences are tailored to align with specific objectives. The objective is to ensure that the learning process is conducted efficiently and organized to attain specific objectives and competencies. Employing relevant instructional materials that align with modern developments can support learners in accomplishing specific objectives and competencies.

Furthermore, minor English material meets students' needs. The materials tend to be more general than specified for law students, and most lecturers still use conventional teaching materials methods, like explaining using a whiteboard and handouts. Therefore, it needs to integrate technology and specified material digitally in speaking Teaching. Utilizing such electronic modules can significantly enhance students' information technology skills, particularly relevant to today's youth (Lin et al., 2017). Employing relevant instructional materials that align with modern developments can support learners in accomplishing specific objectives and competencies. Therefore, in current period of time, traditional classroom strategies are falling as leaners are keen on technology rather than paper-based learning. It requires the need of alternative way of teaching and learning with the help of technology in form of various digital tools. In the digitalized era, a variety of digital tools, platforms and applications have appeared to help learn languages. English for Specific Purpose aims at teaching English focusing on specific fields like business, medicine, law, and engineering.

Although previous studies such as from Sosas (2021), Surani et al. (2025), Yulando and Chi (2019), Bower (2019) have recognized the potential of digital resources in language learning and documented the importance of speaking skills in ESP instruction, there remains a lack of empirical evidence on how digital resources specifically affect speaking proficiency among ESP law students in Indonesia. Existing research often examines technology use in general EFL classrooms or focuses on individual skills without investigating how digital materials function as pre-class resources to support speaking performance. Moreover, few studies address how digital tools can reduce speaking anxiety, build confidence, and provide authentic exposure to Legal English. Therefore, the present study addresses this gap by examining the effectiveness of digital resources in enhancing law students' speaking

proficiency and exploring their perceptions of how these resources contribute to supportive and interactive ESP learning environments.

Based on the descriptions above, this study tries to demonstrate the implementation of the digital resources to improve students' speaking skills with two research questions as follow:

1. Is there any significant difference between ESP learners' speaking proficiency before and after exposure to digital resources as pre-class materials?
2. How do digital resources contribute to creating a more supportive and interactive learning environment for ESP learners?

RESEARCH METHOD

The study employed a one-group pretest–posttest mixed method experimental design to assess the effectiveness of the intervention on participants' performance over time. This design allows researchers to measure changes that occur as a result of the treatment by comparing outcomes collected before and after the intervention within the same group (Creswell, 2018). The pretest was administered to establish a baseline of participants' knowledge, attitudes, or skills relevant to the study objectives. Subsequently, the intervention was implemented under controlled conditions to minimize external influences. A post-test was then conducted using the same or equivalent instruments to measure any improvements or changes resulting from the intervention.

Participants

The study involved 52 participants, who were law students from a university in Banten, Indonesia. The sample was selected through purposive sampling, resulting in a final group of 15 male and 37 female students. The participants took English for law course as compulsory subject.

Data Collection and Instruments

To ensure accurate data collection, information is gathered using various techniques across two distinct phases, incorporating both quantitative and qualitative methods. The first phase focuses on collecting primary quantitative data, which includes summarizing of speaking performances, which was obtained from pre-test and post-test scores related to a presentation task scheduled during data collection. This task involved individual student participation in delivering a presentation on "Legal Professional Introduction." Students were given five minutes for preparation and allowed to conduct a ten-minute spontaneous presentation. The presentations were recorded and scored by considering the test scoring categories for speaking from the speaking assessment from Joe et al. (2015).

In the subsequent phase, qualitative data were gathered through semi-structured interviews to dig into comprehensive information about the effects of digital resources in enhancing students speaking. These interviews took place at the end of the experiment and focused on students' experiences in utilizing the digital resources to improve their speaking skills.

The validity of the speaking test instrument was established through expert judgment, in which two experts evaluated its content and construct validity. Meanwhile, the validity of the interview instrument was examined through expert judgment and a pilot study. Two experts reviewed its content and construct validity, and a pilot study was conducted to assess face validity, including item clarity, interview flow, and duration.

Analysis of Data

The speaking performance series activities utilized language assessment principles from (Joe et al., 2015). The scoring criteria for speaking can be tailored based on performance expectations, so the researcher created a rubric to align with learners' conditions and research needs. Such an adjustment aimed to enhance and adapt the speaking score to achieve a maximum of 100. Furthermore, the tests were evaluated by considering various factors, including fluency (the flow of spoken language), pronunciation (identification of errors), grammar (control of grammatical structures), vocabulary (variety and appropriateness of legal terms), and comprehension (accomplishing the objectives of the task). The data was evaluated by the researcher through administering examinations to assess the pupils' speaking abilities. The quantitative data was tabulated and analyzed using the IBM SPSS 26 edition statistical software.

Following the transcription of the interview data into interview transcripts, the researchers conducted the data coding procedure as part of the qualitative data analysis. The researchers focused primarily on interview extracts relevant to the qualitative study's issues during the data coding technique. Upon the initial reading, certain sections of the transcript were highlighted, with equal consideration given to each data piece. However, during the process of coding, certain codes exhibited a repetitive pattern, while others were infrequently observed. Only the codes that recurrently appeared were deemed essential in the subsequent construction of themes. Subsequently, the researchers meticulously analyzed and verified the themes to ensure their precise reflection of the intended concept. To uphold the ethical obligation of maintaining anonymity, the researchers designated the individuals involved as 'Respondents' with assigned numbers ranging from 1 to 5 (e.g., Respondent 1) when presenting excerpts from the transcript in the findings.

Experimental Process

Before conducting the experiment, digital learning materials were prepared and compiled into an e-module titled "*English for Law".* The e-module contains reading texts, legal conversations, legal terms and vocabulary, as well as embedded links to online authentic learning resources. These resources are accessible anytime, anywhere, and can be revisited as needed.

The experimental process was conducted over 12 weeks with 52 law students from regular classes. They were taught using the e-module, which focused on developing speaking skills in a legal context. A pre-test was administered at the beginning of the experiment. Students were also able to explore the e-module content and its online exercises outside the classroom. At the end of the experiment, a post-test was conducted, followed by interviews.

RESULTS AND DISCUSSION

ESP Learners' Speaking Proficiency Before and After Exposure to Digital Resources

The descriptive T-test results for the pre-test and post-test scores are displayed in Table 1. Evidently, the posttest score of 67,260 exhibited a substantial increase compared to the pretest score. (57,110). Additionally, these results demonstrated that the speaking proficiency of law students differs between prior to and after their utilization of the digital resources. The findings

suggest that interactive digital resources are effective in promoting language acquisition. Students demonstrated improved performance in post-tests compared to pre-tests, and statistical analysis confirmed a relationship between the variables examined. These results highlight the significant advantages of using interactive digital resources to enhance students' speaking abilities digital resources efficiently deliver all learning materials in line with educational objectives, ensuring that the effectiveness of digital learning remains intact. Furthermore, the digitization of learning materials allows for the creation of dynamic lessons and grants access to a wealth of resources, which can be utilized flexibly at any time and place, optimizing the use of space, time, and financial resources. This is corroborated by Yulando and Chi (2019), who found that students could access learning materials on mobile devices or computers, offering them the liberty to learn at their convenience, thereby improving their performance efficiently. As proposed by Bower (2019) technology enhances the learning experience by mediating the process. Similarly, Lin et al. (2017) observed that integrating technological tools into teaching practices positively affects learning outcomes.

Table 1.
Paired Samples t-Test Results for ESP Learners' Speaking Proficiency Before and After Exposure to Digital Resources

Speaking Test	N	Mean	SD	correlation	T-test t	df	Sig.
Pretest	52	57,110	4,6891	,692	-22,675	72	0,000
Posttest	52	67,260	5,0305				

Furthermore, the analysis unveiled a noteworthy correlation between the two sets of scores, as evidenced by a correlation coefficient of 0.692 and a significance level of zero. This indicates that the digital resources substantially impact and contributes to the encouragement of speaking among students who experience speaking challenges. In other words, students can benefit from using the digital resources to enhance their speaking abilities.

Table 2.
Comparison of Pretest and Posttest Mean Scores

Speaking Skills		N	Mean	Std. Deviation	t	df	sig	Effect size
Pronunciation	pretest - posttest	52	-1,0385	1,2980	-5,769	51	,000	.0993
Vocabulary	pretest - posttest	52	-4,1346	1,5722	-18,964	51	,000	.3449
Fluency	pretest - posttest	52	-3,1731	1,5175	-15,078	51	,000	.2471
Grammar	pretest - posttest	52	-1,1346	1,2529	-6,530	51	,000	.0868

The analysis of students' speaking exposed to various digital resources on speaking skills shows significant improvements across all four assessed skill areas: pronunciation, vocabulary, fluency, and grammar.at table 2. For pronunciation, a mean difference of -1.0385 (SD = 1.2980)

and a t-value of -5.769 (df = 51) with a p-value of 0.000 indicate a significant improvement, suggesting that the e-module helped students articulate words more accurately. Vocabulary demonstrated the largest mean difference at -4.1346 (SD = 1.5722), with a t-value of -18.964 (df = 51) and a p-value of 0.000, highlighting the module's strong impact on expanding students' vocabulary, likely enhancing both word knowledge and confidence in usage. Fluency also showed substantial enhancement, with a mean difference of -3.1731 (SD = 1.5175), a t-value of -15.078 (df = 51), and a p-value of 0.000, suggesting the module effectively helped students speak more smoothly and confidently. Grammar improvements, marked by a mean difference of -1.1346 (SD = 1.2529), a t-value of -6.530 (df = 51), and a p-value of 0.000, reflect meaningful gains in grammatical accuracy. While pronunciation and grammar gained smaller improvements compared to vocabulary and fluency, all changes were statistically significant, demonstrating that the digital resources positively impacted each skill area. The finding shows that ESP students can achieve noticeable improvement with the digital resources. Overall, the digital resources were effective in enhancing vocabulary and fluency among ESP students but did not significantly impact pronunciation or grammar. These results suggest that while the digital resources support specific aspects of speaking skill development, additional interventions may be needed to address pronunciation and grammar for students

Adopting digital resources as a technological integration serves as an educational tool that simplifies the teacher's task of imparting knowledge, thereby fulfilling the learning objectives. It also engages students' cognitive and emotional engagement, sparking their curiosity and addressing their concerns throughout the learning journey. The use of such digital resources signifies the media's supportive role in the learning process by offering diverse pedagogical strategies to enhance teaching efficacy. Electronic modules are as alternative instructional materials, aiding in the comprehension of subject matter. Moreover, as digital learning tools, these modules provide a substantial approach to learning speaking skills. Students can access videos or audio for speaking practice via embedded links in the electronic modules on their mobile phones outside the classroom. In the instructional process, the content within the interactive electronic modules is presented in multimodal forms, featuring non-verbal symbolic elements like images, animations, and other multimedia components. In this regard, multimodal instruction employs various channels of information and communication to convey educational content, harmonizing the instructional setting, material, and entities to meet educational aims effectively (Yao, 2021).

The Use of Digital Resources in the Development of a Supportive and Interactive Learning Environment for ESP Learners

This section presents the results related to second research question, which examines the use of digital resources in the development of a supportive and interactive learning environment for ESP learners. It highlights participants' responses and observed patterns regarding how digital tools were utilized to enhance interaction, engagement, and learning support within the ESP context.

Thematic analysis of semi-structured interviews revealed that the law students perceived the digital resources as providing a new and beneficial learning experience for speaking. The interview responses indicate that law students derive advantages from employing the digital resources to improve their oral communication abilities. Respondent 1 described in the initial excerpt how the module assisted her in developing her speaking abilities. This finding is

consistent with Sosas (2021) and Surani et al. (2025) who reported that technology facilitates more effective student expression by improving fluency, accuracy, rapport, and confidence while lowering anxiety.

> "With the digital resources, I can practice my speaking abilities/skills more often, these digital resources helps me to be more fluent and not anxious About the results/responses that I get. I will continue to do my best". (Respondent1)

Respondent 1's response also indicates that the digital resources serve as a language tool that facilitates her progress in acquiring fluent speaking skills through frequent self-practice and the conquering of her speaking anxiety. By utilizing an interactive digital resource, students gain new experiences in learning to speak. Most respondents claimed that digital materials within the electronic module guide them toward interactive activities, supporting their speaking skills both in class and outside class. As stated by Surani and Septiyani (2023), digital resources as learning materials are essential in boosting self-efficacy and simplifying the learning process. Students' self-efficacy is fueled by their intrinsic motivation, which is a key factor in achieving success in EFL classrooms. Also, the presence of an interactive digital resource serves as an external factor influencing student motivation. Technology, including the Internet, significantly shapes students' self-efficacy, knowledge, competencies, and motivation (Howard & Rohs, 2021).

> "The digital resources helped me do legal assignments whose vocabulary was very foreign to me because I am used to speaking Indonesian every day. During the presentation, my pronunciation may still not be correct, but the digital resources help a little" (Respondent 2)

> "I found it helpful with these digital resources because I was not confident when it came to explaining things to use English, and since I learned vocabulary and practiced pronunciation, I felt better than yesterday, for example when I got a speaking assignment where my friends and I had to talk using English" (Respondent 3)

In the excerpts, both Respondent 2 and Respondent 3 demonstrate their ability to utilize the digital resources as a learning resource to develop their pronunciation and acquire new legal terminology to complete speaking assignments. Moreover, technology, in general, and the Internet, in particular, play pivotal roles in foreign language learning and teaching (Ali et al., 2014; Ginaya et al., 2020). Technological integration can transform both teacher and student roles, enhancing motivation and promoting more efficient language learning. As Dashtestani and Stojković (2015) recommended, incorporating various technologies in the classroom can boost student engagement and foster interest in language acquisition. In line with this, Wei and Zhou (2018) discovered that technology positively impacts students' self-regulated learning.

> "The digital resources help me reduce my anxiety when speaking English, whether in class or outside class. Because I studied/read the digital resources, I gained new knowledge such as new vocab, and good grammar" (Respondent 4)

Based on the excerpt, it can be inferred that respondent 4 reported a reduction in his speaking anxiety as a result of using the module, which also increased her understanding of the speaking aspects required for proficiency. Student engagement with the digital material is

significantly bolstered by their active participation in these activities, solidifying their acquired knowledge and elevating their speaking skills. Incorporating digital resources into educational methodologies nurtures creativity and cultivates constructive thinking patterns, and promotes a dynamic, efficient, and innovative learning atmosphere, thereby augmenting the students' speaking proficiencies. The digital resources allow students to enhance their understanding of legal terminology by interacting with authentic legal documents, case studies, and journalistic content. It also incorporates integrated videos and audio, enabling students to independently improve their pronunciation of legal terms. The digital resource was designed with exercises focused on legal skills such as advocacy, client interviews, negotiation, and document drafting, helping students develop their legal English(Surani et al., 2025). It is highly recommended to use real-world legal cases as learning materials, as they facilitate the practical use and expression of legal language. Consistent with Nhạc (2021) findings, practice involving real-life legal situations offers learners invaluable experience.

> "Digital resources can be used at any time, even during class, there are lots of materials with videos that make me understand how to speak English, we can also practice with friends, so it makes us more confident" (Respondent 5)

As asserted by Respondent 5, the adaptable nature of digital resources as learning aids affords a more comprehensive learning experience. In the excerpt, the respondent examined the features of the digital resources to acquire an understanding of speaking English by accessing video links in the module, both in and outside class. It can be inferred that the respondent utilized the as digital resources pre-class preparation material outside of class, which presumably boosted confidence, and alleviate their anxiety.

The findings of this study also proved that the series of speaking activities contained in the digital resources can effectively alleviate learners' anxiety and improve their confidence in speaking task performance. This aligns with Surani et al (2025) who reported that technology-supported instruction can contribute to reducing students' speaking anxiety. Moreover, Samad et al. (2020) mentioned that activities enabling students to prepare for oral tasks in advance and offering opportunities for practice can help reduce social anxiety and enhance speaking skills. Students reported that the electronic module contributed to a decrease in anxiety, boosted their confidence, and improved their speaking skills and pronunciation. This improvement was attributed to the exploration of contents and embedded links within the digital resources for self-learning and practice. Additionally, Sosas (2021) confirmed that incorporating technology into speaking instruction leads to beneficial outcomes, including increased student confidence, improved fluency and accuracy, and a reduction in anxiety and discomfort. Therefore, it is recommended that EFL teachers incorporate digital materials into their speaking instruction to enhance students' speaking skills and help reduce their anxiety.

CONCLUSION

The study examined the impact of using interactive digital resources in the classroom to improve speaking skills. The study employed mixed methods, with a one-group experimental design, gathering data from pretest-posttest results, and semi-structured interviews. The findings indicate that digital resources prove to be an effective tool for promoting speaking skills among students with different anxiety levels. Incorporating appropriate activities within the electronic modules to develop speaking skills can be a highly effective approach to

alleviating the anxiety experienced by speakers. Furthermore, incorporating contemporary technology into the teaching of speaking for law students can lead to the development of innovative and interactive approaches to acquiring speaking skills. The study's findings imply that technological tools and digital resources can significantly assist students. By incorporating these, teachers can promote modernity and decrease speaking anxiety, resulting in improved speaking accuracy and proficiency. The present investigation was restricted to speaking proficiency and employed a relatively small sample, which may limit the generalizability of the findings. Future studies should involve larger and more diverse participant groups.

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