

Kahoot!, YouTube, and Blackboard to enhance English for specific purposes motivation: insights from a Saudi university

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Abstract

In an era increasingly defined by digital innovation, the traditional classroom struggles to meet the motivational needs of today's students. This study investigates the impact of integrating educational technology tools on student motivation and engagement in English for specific purposes (ESP) classrooms at a Saudi university. Guided by self-determination theory (SDT), the research focuses on three widely used platforms –Kahoot!, YouTube, and Blackboard– and examines how each contributes to fulfilling learners' psychological needs for autonomy, competence, and relatedness. Employing a qualitative-method design, the researchers developed a semi-structured observational checklist and conducted interviews with students to assess their engagement and perceptions of technology-enhanced learning. Findings reveal a strong positive response: students expressed increased enthusiasm, sustained attention, and higher participation in activities that included gamified quizzes, multimedia content, and online feedback mechanisms. The study introduces the ESP tech-motivation matrix (ETMM), a practical framework that maps specific technologies to motivational outcomes, offering educators actionable insights for fostering student-centered, digitally supported learning environments. The study recommends broader institutional adoption of educational technology and targeted teacher training, especially for educators with limited digital experience, to bridge the gap between traditional instruction and contemporary learner needs.

Keywords: English for specific purposes (ESP); English language teaching (ELT) classrooms; information and communication technology (ICT); signal detection theory (SDT); King Abdulaziz University (KAU); learning management system (LMS); virtual classroom.

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Beneficios de Kahoot!, YouTube y Blackboard para mejorar la motivación en el aprendizaje del inglés con fines específicos: perspectivas de una universidad saudí

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Extracto

En una era cada vez más marcada por la innovación digital, el aula tradicional se enfrenta al reto de satisfacer las necesidades motivacionales del alumnado actual. Este estudio investiga el impacto de la integración de herramientas de tecnología educativa en la motivación y participación del alumnado en clases de inglés para fines específicos (*English for specific purposes* [ESP]) en una universidad saudí. Guiada por la teoría de la autodeterminación (TAD), la investigación se centra en tres plataformas de uso común –Kahoot!, YouTube y Blackboard– y examina cómo cada una contribuye a satisfacer las necesidades psicológicas del alumnado en cuanto a autonomía, competencia y conexión. Mediante un diseño de metodología cualitativa, los investigadores desarrollaron una lista de verificación observacional semiestructurada y realizaron entrevistas con el alumnado para evaluar su participación y sus percepciones sobre el aprendizaje potenciado por la tecnología. Los resultados revelan una respuesta muy positiva: el alumnado manifestó mayor entusiasmo, atención sostenida y una mayor participación en actividades que incluían cuestionarios gamificados, contenido multimedia y mecanismos de retroalimentación en línea. El estudio presenta la matriz de motivación tecnológica para el aprendizaje en el ámbito del inglés (*ESP tech-motivation matrix* [ETMM]), un marco práctico que relaciona tecnologías específicas con resultados motivacionales, ofreciendo a los educadores información útil para fomentar entornos de aprendizaje centrados en el estudiante y con apoyo digital. El estudio recomienda una mayor adopción institucional de la tecnología educativa y una formación docente específica, especialmente para educadores con experiencia digital limitada, para cerrar la brecha entre la instrucción tradicional y las necesidades del alumnado actual.

Palabras clave: *English for specific purposes* (ESP); *English language teaching* (ELT) classrooms; tecnologías de la información y la comunicación (TIC); teoría de la autodeterminación (TAD); King Abdulaziz University (KAU); *learning management system* (LMS); clases virtuales.

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Nota: los autores del artículo declaran que todos los procedimientos llevados a cabo para la elaboración de este trabajo de investigación se han realizado de conformidad con las leyes y directrices institucionales pertinentes. Asimismo, los autores del artículo han obtenido el consentimiento informado (libre y voluntario) por parte de todas las personas intervinientes en este estudio de investigación. Finalmente, los autores del artículo declaran que no tienen conflicto de intereses. Por otra parte, esta investigación no recibió ninguna subvención específica de agencias de financiación de los sectores público, comercial o sin ánimo de lucro.

1. Introduction

In the evolving landscape of education, the integration of technology into the learning process has become a focal point for enhancing student engagement and motivation. This is particularly relevant in the context of ESP students, who often require tailored educational approaches to meet their unique learning objectives. In recent years, there has been a growing interest in leveraging technology in educational settings to guarantee attractive learning experiences. Traditional teaching methods may not always capture the attention and interest of students, particularly in ESP classrooms where specialized language skills are taught. Therefore, integrating educational technology into ESP instruction can offer a promising solution to address this challenge. With the rapid advancements in technology, harnessing its potential to enhance student motivation has become a topic of significant interest and exploration.

In the realm of foreign language learning, technology serves as a motivational catalyst. Engagement and motivation are critical in language acquisition, and the sophisticated array of digital tools available today can be leveraged both inside and outside the classroom to bolster student motivation. The use of web tools, digital games, mobile apps, and communication tools has been extensively studied, revealing a positive correlation between technology use and motivation in language learning contexts (Panagiotidis *et al.*, 2023). Traditional teaching methods often struggle to captivate and sustain students' interest in learning a new language, resulting in disengagement and limited progress. However, emerging technologies such as interactive projectors, mobile applications, online platforms, and digital media have transformed the landscape of language learning, offering exciting opportunities to enhance motivation and engagement.

The concept of intrinsic motivation, as introduced by Deci and Ryan (1985), posits that individuals are driven by a sense of personal fulfillment and enjoyment derived from an activity itself, rather than external rewards or pressures. When it comes to language learning, intrinsic motivation plays a pivotal role, as it cultivates a genuine interest and passion for the language, thereby driving students to persistently seek opportunities for improvement. Technology in education has the potential to tap into this intrinsic motivation by providing a dynamic and interactive learning environment.

Technology is transforming the way students learn languages, making the process more engaging and effective. A study by Ling (2023) found that artificial intelligence (AI)-powered language instruction significantly improved English learning achievement, boosted motiva-

tion, and enhanced self-regulated learning among English as a foreign language (EFL) students. The personalized learning experiences and instant feedback provided by AI tools played a crucial role in keeping students motivated.

Additionally, research by Lai and Zheng (2017) explored how mobile-assisted language learning (MALL) promotes self-directed learning and autonomy. Their findings showed that students who used mobile apps and digital platforms for language learning developed stronger motivation and took greater control over their learning journey.

These studies reinforce the idea that integrating AI, gamification, and mobile technology into language education can create dynamic and motivating learning environments, helping students stay engaged and committed to achieving their language goals. These findings align with the principles of SDT, which posits that intrinsic motivation is driven by the fulfillment of three basic psychological needs: autonomy, competence, and relatedness (Deci and Ryan, 1985).

KAU, as a leading institution in Saudi Arabia, recognizes the potential of technology in promoting English language learning among its students. The university has implemented various technological initiatives, such as the integration of online learning platforms, the provision of language learning software, and the establishment of multimedia language labs. This is added to equipping classrooms with the necessary ICT tools such as projectors, smart boards, and audio speakers. These initiatives aim to create an immersive and stimulating learning environment that motivates students to actively engage in the language learning process. This study aims to investigate the role of harnessing technology in motivating ESP students at KAU. We will delve into how the utilization of technology serves as an intrinsic motivation for students to engage in the English language learning process. Specifically, the study examines the following research questions (RQ):

RQ1. How does the integration of educational technology influence student engagement in the ESP classroom?

RQ2. What are students' perceptions of the impact of educational technology on their motivation to learn ESP?

RQ3. How do the principles of SDT manifest in students' experiences with educational technology in the classroom?

The study is particularly relevant in the context of Saudi Arabia's Vision 2030, which emphasizes the importance of integrating technology into education to foster innovation and prepare students for the demands of the global economy. The findings of this study will contribute to the growing body of literature on the role of technology in language learning, particularly in ESP contexts, and provide valuable insights for educators and policymakers in Saudi Arabia and beyond.

2. Motivation in language learning

Motivation is a multifaceted and complex construct that has garnered extensive attention in the field of language learning. Researchers have identified various factors that shape an individual's motivation, including personal traits, the learning environment, and the nature of the tasks themselves. Factors such as age, gender, personality type, and preferred learning style play crucial roles in influencing motivation levels (Tapola and Niemivirta, 2008). Additionally, the learning environment can either foster or hinder motivation. A supportive and encouraging atmosphere is conducive to boosting learners' motivation, while a negative or stressful environment can dampen enthusiasm. Access to resources like native speakers and authentic materials also significantly impacts motivation (Cayubit, 2021).

In recent years, the exploration of motivation has expanded to include the role of technology as a facilitator of engagement and learning. The integration of technology has been shown to enhance motivation by transforming traditional learning experiences into more interactive and engaging ones. Recent studies, such as those by Dörnyei and Ushioda (2021), have further emphasized the role of technology in fostering self-regulated learning, which is crucial for maintaining long-term motivation in language acquisition. According to Dörnyei (2020), motivation is the driving force behind students' willingness to engage in learning activities and persist in the face of challenges. In the context of ESP, where students often have specific career-related goals, motivation is even more critical. Students who are motivated to learn English for their future careers are more likely to engage in self-directed learning and seek out opportunities to practice their language skills outside the classroom. This aligns with the findings of Ushioda (2017), who emphasized the importance of aligning language learning goals with students' personal and professional aspirations to sustain motivation over time.

3. The role of technology in motivation

The past few years have witnessed a growing focus on the potential of technology to enhance student motivation across various learning contexts. Numerous studies have provided evidence that technology can effectively boost learner motivation. For instance, research by Panagiotidis *et al.* (2023) established a positive correlation between the use of technology in foreign language learning and increased student motivation. Their findings indicated that interactive digital tools create immersive learning experiences that traditional methods often lack, thereby enhancing student engagement.

The motivational impact of ICT has been extensively researched. A study conducted in public sector universities in Rawalpindi City evaluated students' perceptions of the motivational features of ICT. The results indicated that ICT not only positively influenced student motivation but also helped address learning challenges, thereby further motivating students

to engage in learning tasks (Hashmi *et al.*, 2019). This evidence supports the notion that integrating ICT in ESP courses at KAU could lead to heightened student motivation and improved academic performance.

Technology can motivate learners in several ways. It can create engaging and interactive learning experiences through games, simulations, and other interactive activities. This is particularly beneficial for learners who find traditional instructional methods tedious or repetitive (Conradi, 2014). Moreover, technology provides learners with more control over their learning processes, allowing them to learn at their own pace and in their preferred manner. This flexibility is especially advantageous for learners who require additional time to master concepts or prefer independent learning (Housand and Housand, 2012).

Additionally, technology facilitates connections among learners and native speakers, fostering a sense of community and exposing students to authentic language usage. Such interactions can significantly enhance motivation by creating a more engaging and relevant learning environment. As technology continues to evolve, it is crucial for educators and policymakers to remain proactive in adopting these advancements to ensure that all students benefit from technology-enhanced learning environments. This involves not only integrating innovative tools but also providing ongoing professional development for teachers to effectively utilize these technologies (Chuang, 2014). By doing so, educators can create dynamic and engaging learning environments that better prepare students for the demands of the global economy.

4. Technology in ESP

The effectiveness of technology in motivating ESP students has also been well-documented. A study by Vasbieva and Saienko (2018) found that students who utilized technology in their ESP classes exhibited higher levels of motivation and engagement. The researchers noted that technology not only improved motivation but also helped students develop a greater sense of autonomy and self-direction in their learning processes.

Extensive research supports the idea that, when employed effectively, technology can significantly enhance student motivation. In ESP contexts, which often require a high level of engagement and specialized knowledge, technology can serve as a powerful tool to stimulate interest and encourage active learning. For instance, research on the motivational impact of technology on gifted students indicates that when technology is used in ways that align with real-world applications, it can greatly increase motivation. This is achieved through fostering skills such as autonomy, challenge, collaboration, curiosity, and recognition (Housand and Housand, 2012). These factors are equally applicable to ESP students at KAU, where technology can be harnessed to create authentic learning experiences that resonate with their professional aspirations.

Mobile technology, in particular, has been found to be effective in raising the motivational levels of students. The use of mobile applications facilitates access to learning materials and promotes learner autonomy and peer learning. For example, Kappalumakkel (2020) reported that innovative mobile application usage in ESP classes at Dhofar University resulted in a visible increase in student motivation. This approach could be adapted at King Abdulaziz University to address the challenge of low student motivation in ESP courses.

Technology can motivate ESP students by providing authentic materials, creating collaborative opportunities, and offering timely feedback. Access to a wide range of authentic materials—such as news articles, videos, and podcasts—makes learning more relevant and engaging (Housand and Housand, 2012). Online forums and collaborative tools enable students to work together on projects and assignments, fostering a sense of purpose and allowing them to learn from each other. Moreover, technology can be used to provide students with feedback on their work, which helps them track their progress and identify areas for improvement.

Beyond personalization, technology plays a crucial role in fostering autonomy and confidence. Bandura's (1997) theory of self-efficacy—the belief in one's ability to succeed—highlights its critical role in motivation. Digital tools strengthen self-efficacy by offering learners a low-stakes environment for practice, instant feedback, and progress tracking. This approach is particularly valuable in ESP contexts, where students need specialized language skills for their professional fields. Research indicates that self-efficacy influences academic achievement by affecting learners' persistence, effort, and self-regulation, which in turn lead to more positive learning outcomes.

The findings from various studies highlight the significant impact of educational technology on enhancing student motivation and engagement, particularly in ESP classrooms. Research indicates that integrating technology into the classroom can lead to increased student engagement and motivation, as well as improved learning outcomes and teacher-student interactions (Francis, 2017; Malik, 2023). For instance, the use of applications like Telegram in ESP classrooms has been shown to significantly boost student interaction and motivation, making language learning more enjoyable and effective (Pudyastuti *et al.*, 2023). Similarly, strategic use of technology in teaching legal English has been found to enhance students' academic performance and motivation (Minh, 2024).

Technology-enhanced task-based language teaching (TBLT) has been shown to significantly influence self-directed language learning (SDLL) among ESP learners. This approach helps students improve their English mastery by encouraging consistent practice both in and out of the classroom. It also aids in planning processes, task completion, and internal attributions, although students may face challenges in applying language skills during speaking activities (Mulyadi *et al.*, 2023).

Integrating modern information technology into ESP teaching enhances students' information literacy. This includes efficient reading, information retrieval, and the ability to understand,

summarize, and create new information. Such integration significantly improves students' comprehension and expression skills (Wang, 2021). Furthermore, the use of digital technologies in ESP teaching has been found to increase student motivation and engagement. By adopting innovative digital tools, students become more interactive and collaborative, which enhances their learning experience and motivation to learn ESP. Additionally, strategic use of technology in legal English lessons has been shown to enhance students' academic performance and motivation, particularly in areas such as intrinsic motivation and self-efficacy (Minh, 2024).

The use of online platforms like Moodle for ESP teaching has become more prevalent, especially during the COVID-19 pandemic. These platforms offer tools for teaching listening, reading, and writing, and support blended education and flipped tutoring models. They also facilitate teamwork, role-play, and feedback, which are essential for communicative language teaching in ESP (Babayán, 2022). Moreover, combining dialogic teaching with technology integration in ESP learning environments significantly enhances English reading comprehension. This approach encourages active participation, critical thinking, and a deeper understanding of ESP materials, leading to improved learning outcomes (Ali *et al.*, 2024).

In summary, the integration of technology in ESP teaching offers numerous benefits, including enhanced self-directed learning, improved information literacy, increased motivation and engagement, and more efficient learning through innovative tools. These advancements contribute to a more effective and engaging learning experience for ESP students.

5. Theoretical framework

This research draws from SDT, proposed by Deci and Ryan in 1985, which posits that individuals are motivated by two core needs: the need for competence and the need for relatedness. When these needs are met, individuals are more likely to develop intrinsic motivation to learn. The need for competence refers to having a sense of ability and effectiveness, motivating individuals to acquire new skills and take on challenges. The need for relatedness emphasizes the importance of feeling connected to others, inspiring individuals to learn as a means to build relationships.

Technology can help fulfill both the need for competence and the need for relatedness. It provides opportunities for students to practice their skills and receive feedback, thereby enhancing their sense of capability. Online communities enabled by technology allow students to interact with one another and with native speakers, fostering a sense of relatedness. By tapping into these two critical needs through technology integration, educators can unlock students' intrinsic motivation to learn and grow.

The links between SDT and this study are particularly relevant, as the integration of technology in ESP contexts can meet students' needs for autonomy, competence, and related-

ness. For instance, technology enables learners to take control of their learning processes, as mobile applications allow them to study at their own pace, fostering independence (Housand and Housand, 2012). The interactive nature of technology also provides immediate feedback, allowing students to gauge their understanding and improve their skills. Research has demonstrated that when students perceive themselves as capable, their motivation increases (Kappalumakkel, 2020). Furthermore, technology fosters connections among learners and instructors, encouraging interaction and a sense of belonging, which is vital for motivation (Conradi, 2014).

While existing studies illustrate the benefits of technology, it is crucial to acknowledge the complexities involved. Vasbieva and Saienko (2018) noted that the effectiveness of technology in enhancing motivation varies based on students' prior exposure to digital tools and their individual learning preferences. This finding underscores the importance of considering learners' backgrounds when integrating technology into ESP curricula.

Moreover, the motivational impact of technology can sometimes be overshadowed by challenges. Cayubit (2021) revealed that while students appreciated the engagement technology offered, they also expressed concerns about distractions, such as social media and online gaming. This suggests that simply introducing technology is insufficient; educators must implement strategies to maintain focus and ensure that technology serves its intended purpose. Lai and Zheng (2017) has highlighted the importance of digital literacy in ensuring that students can effectively navigate and utilize technology for learning purposes.

In summary, the literature indicates a strong connection between technology, motivation, and learning outcomes in ESP contexts. The theoretical framework of SDT provides a valuable lens for analyzing these relationships. As this study aims to explore the motivational effects of educational technology on ESP learners at KAU, insights gained from previous research will guide the investigation, ensuring a comprehensive understanding of the complexities involved in this dynamic educational landscape. By critically evaluating existing literature, this study seeks to contribute to ongoing discourse around technology integration in language education, particularly in enhancing student motivation and engagement.

While SDT has often been employed in quantitative research through standardized instruments measuring autonomy, competence, and relatedness, this study adopts a qualitative approach to SDT. The psychological needs defined by SDT served as thematic lenses during the analysis of interview transcripts and classroom observations. Rather than numerically measuring these constructs, we interpreted participants' lived experiences and perceptions through the SDT framework to explore how educational technologies support or hinder these motivational dimensions. This interpretive application of SDT ensured alignment with the study's qualitative research design and avoided any reliance on psychometric scales or quantitative data.

6. Methodology

This section outlines the methodology employed in the study, detailing the data collection and analysis methods utilized to investigate the role of educational technology in motivating ESP learners at KAU. The methodology is designed to ensure a comprehensive understanding of students' interactions with technology and its impact on their motivation.

6.1. Population and sample

The population for this study consisted of male ESP students at KAU, selected for their proficiency in using educational technology. The sample comprised twenty students, purposefully selected to provide a diverse range of perspectives within the population. This purposive sampling method aimed to ensure that participants possessed relevant experience with educational technologies and could provide meaningful insights into the research focus. To ensure ethical considerations, all interviewees' names were anonymized, and pseudonyms were used throughout the study.

The study was conducted exclusively with male students due to institutional and cultural considerations specific to the Saudi context. At KAU, male and female students attend classes on separate campuses, and male researchers do not have access to the female section. Consequently, the nature of the data collection methods—such as classroom observations and face-to-face interviews—restricted participation to male students only. This limitation was necessary to ensure compliance with university policies and ethical research standards. However, future research is encouraged to include female participants to provide a more comprehensive and gender-balanced understanding of technology integration and learner motivation in ESP settings.

6.2. Design of the study

This qualitative study involved a purposive sample of twenty male ESP students who participated in classroom sessions conducted in a technologically enriched learning environment. The classroom was equipped with a variety of educational technologies, including an interactive projector, a smart board, individual personal computers for each student, and an integrated audio system. These tools were integrated into daily instruction to support interaction, creativity, and student-centered learning.

The study employed a qualitative data collection method to gain a rich and holistic perspective on the research questions. Using a semi-structured checklist (see appendix 1), the researcher conducted observations of students' interactions in the technology-enhanced classroom, focusing on their engagement, participation, and interactions in the learning en-

vironment. This approach allowed for a more nuanced understanding of students' experiences. It included items reflecting students' emotional engagement (e.g., pleasure in completing tasks, enthusiasm, curiosity, satisfaction with achievement), affective state (e.g., low stress, persistence, focus), and behavioral indicators (e.g., regular attendance, active participation, note-taking, and willingness to revise work). Unlike a fixed rating scale, it combined predetermined categories (e.g., engagement, curiosity, persistence) with open space for descriptive notes. This flexible format enabled the observer to capture both the frequency and contextual nuances of motivated behaviors as they emerged during the lessons. The instrument served as a qualitative observation guide to help identify patterns of motivated behavior among participants during the intervention.

In addition to classroom observations, interviews were conducted with the twenty selected participants. The interview questions (see appendix 2) were designed to explore students' experiences and attitudes toward the use of technology in their learning. The questions were informed by the theoretical framework of SDT and relevant literature on technology in education. These interviews allowed participants the flexibility to share detailed insights about their experiences with autonomy, competence, and relatedness in the context of using technology in their learning process.

6.3. Data collection

Data collection occurred over three months in a well-equipped classroom featuring educational technology, including interactive projectors, smart boards, personal computers, and specific software (Kahoot! for quizzes, YouTube for videos, Blackboard for assignments). The researcher conducted informal, observational sessions during lessons, taking detailed field notes on students' interactions with the technology and their level of engagement. These observations were open-ended and exploratory, allowing the researcher to capture a wide range of behaviors and experiences.

Following the observation period, semi-structured interviews were conducted with each of the twenty participants to gather qualitative data on their personal experiences and reflections on the use of technology in their learning. The semi-structured format provided flexibility, allowing participants to express their thoughts freely while ensuring that the main themes of motivation and technology were addressed.

6.4. Data analysis

The interview responses were transcribed verbatim and analyzed using thematic analysis, a widely-used method in qualitative research to identify and interpret patterns within the data (Braun and Clarke, 2006). The analysis proceeded through the following steps:

- **Familiarization.** The researcher read through the transcripts multiple times to understand the content and identify initial patterns.
- **Initial coding.** Key phrases and concepts related to motivation, engagement, and technology were coded.
- **Theme development.** The codes were grouped into broader themes that reflected commonalities in students' experiences, aligned with the constructs of SDT.
- **Reviewing themes.** The emerging themes were reviewed and refined to ensure they accurately represented the data and were connected to the theoretical framework.

To ensure the credibility of the findings, the study used member checking, where participants were asked to verify the accuracy of the themes and interpretations that emerged from the analysis. This study's purely qualitative design allows for an in-depth exploration of how educational technology impacts motivation in the ESP classroom. By focusing on detailed observations and rich interview data, the study aims to provide a nuanced understanding of students' lived experiences with technology in their learning environment. The research design is firmly anchored in established theoretical frameworks and previous studies, ensuring the validity and reliability of the findings while maintaining a purely qualitative approach.

7. Results

7.1. Results of the observation

One key technological feature in both general and ESP classrooms is the use of projectors and other digital devices. The projector provides a versatile medium for displaying visual materials and detailed images clearly. Teachers often use multimedia projectors to support instruction through pictures, audio clips, videos, and PowerPoint slides (Amin *et al.*, 2018). The projector and its displayed content stimulated student curiosity and significantly altered the classroom atmosphere. It helps students concentrate more in class and understand certain concepts that cannot be explained verbally. Dual coding helps students process information more quickly and recall it more easily.

Most participants responded positively to the use of multimedia tools in the ESP classroom. They were happy to participate in the classroom activities, interacted with the videos, and their eyes remained focused on the screen. The teacher played a story video, paused it, and asked students to predict what would happen next. The story was about a mouse that was starving and found a small hole in a sack of wheat just the size of his thin body. He got in and started eating. Everybody started thinking about the next scenario, and all were discussing what might happen to the starving mouse. Student A predicted that the mouse would

keep eating until it became too fat to escape and died inside. Student B believed it would eat excessively, become thirsty, and eventually die. Student C suggested that a cat might help the mouse escape only to eat it afterward.

The teacher introduced another prewriting activity featuring an image of a man trapped in a deep hole with no apparent way out. The students remained engaged in writing even after the class concluded, often unaware of the time or how much remained. The students worked in groups to unravel all the secrets about the story and finally started writing it, each according to his own understanding. The students remained engaged in writing even after the class concluded, often unaware of the time or how much remained. Their deep engagement prevented them from being distracted by visitors or attendance-takers.

In a third class, the teacher presented a video about writing a research introduction. This was part of the requirements, and students were supposed to write the introduction of their research papers in class. The video guided them through the steps of writing the introduction, covering the general background, the importance of the topic, foundational knowledge, the statement of the problem, and finally, the research questions. The teacher paused the video whenever there was confusion or inquiry. The students posed numerous questions to the teacher as they sought to adapt the instructions to their individual topics.

Over a month of multimedia-enhanced instruction, students' interest and engagement noticeably increased. They were taken on «virtual field trips» to different parts of the world, restaurants, factories, mines, forests, rivers, football fields, and hospital surgery rooms. Absenteeism was significantly reduced. Students consistently arrived on time, and their sense of achievement notably increased.

In addition to the tools already mentioned, teachers also use PowerPoint to introduce classroom concepts in a more engaging way. They incorporate graphics and video links that reinforce the ideas presented in their slides. Classroom tablets enable teachers to have differentiated instruction where students work at their pace, and teachers do one-on-one instruction. During the COVID-19 pandemic, Saudi Arabia successfully implemented innovative online learning alternatives through the Blackboard platform. Blackboard serves as an interactive online platform where teachers and students engage using prepared materials and external web links. Teachers can take attendance, administer assessments, monitor performance, and allow students to view their results immediately rather than waiting for manual grading. Through online grading, teachers, administrators, and parents can track students' strengths and areas for improvement. Teachers can post grades, conduct statistical analyses, study students' progress, and monitor attendance.

Recently, the integration of AI-based tools as pre-writing, while writing, and post-writing activities proved to have an apparent effect on students' progress in writing. Before writing, teachers can use AI for instruction to address teaching challenges, including structures, techniques, and stylistics. They can also expose students to AI versions about the topic they are going to write.

While writing, students can interact with ChatGPT and receive formative feedback that enables them to have better performance. In the post-writing stage, students can prompt ChatGPT with the common mistakes and get a version where these mistakes are treated.

Today, a classroom equipped with educational technology reflects students' technology-driven lifestyles. Furthermore, such an environment doesn't confine learning to the classroom; teachers can assign tasks that students can do after class, which increases exposure, especially in language teaching, including ESP. Teachers and students now exchange a large number of drafts and feedback through network sites.

A study in rural India found that integrating mobile technology and applications such as WhatsApp reduced absenteeism and improved punctuality among students and teachers. The study, which involved schools across 21 Indian states, found that the use of these technologies not only improved attendance but also increased the effectiveness of teaching and student performance. This aligns with the findings of Nedungadi *et al.* (2017), who reported that technology-enhanced learning environments can boost student attendance and engagement. Specifically, the study found that consistent interaction through technology –such as attendance-related text messages– was positively correlated with higher attendance rates. By offering immersive and interactive learning experiences, technology fosters a more engaging classroom environment that encourages regular attendance and active participation.

7.2. Discussion of observational findings

7.2.1. Broad insights

The integration of technology in ESP classrooms at KAU has demonstrated a profound impact on student motivation and engagement. The observational and interview data provide evidence that educational technology can create a more dynamic and effective learning environment for ESP students. The observations revealed a marked increase in student engagement and participation when technology was incorporated into the ESP classroom. The use of multimedia projectors, in particular, emerged as a powerful tool for capturing and maintaining student attention. This aligns with the findings of Amin *et al.* (2018), who noted that multimedia projectors facilitate the teaching process through diverse visual and auditory content. The importance of student engagement and motivation through technology-based techniques –as well as methods for measuring engagement– emphasized by Gordon *et al.* (2015) aligns with the findings of this study.

One of the most striking observations was the students' heightened level of focus and interaction during video presentations. For instance, when presented with an open-ended story on the classroom projector about a starving mouse which found itself suddenly in a sack of millet, when asked about what happened next, students displayed increased cu-

riosity and critical thinking. They eagerly offered predictions and engaged in discussions about potential outcomes. This active participation demonstrates the capacity of technology to stimulate higher-order thinking skills, a crucial aspect of language learning that is often challenging to achieve in traditional classroom settings. Such activity, promoted and consolidated by technology, contributes to transferring learning to real life situation which is the ultimate goal of education.

The prewriting activity featuring an image of a man trapped in a deep hole exemplified the power of visual stimuli to spark creativity and engagement. Students worked collaboratively to construct narratives, demonstrating not only improved language skills but also enhanced problem-solving abilities. Notably, their engagement levels were so high that they continued working beyond the allocated class time, oblivious to external distractions.

This observation corroborates the findings of Housand and Housand (2012), who emphasized the role of technology in fostering curiosity and collaboration among students. In addition, technology triggers students' imagination and helps them create different scenarios and challenges their thought.

The introduction of a video guide for research paper writing showcased how technology can break down complex tasks into manageable steps. Students' enthusiastic response and numerous questions indicated a high level of engagement with the material. This approach aligns with the principle of scaffolding in education, where technology serves as a supportive tool to guide students through challenging tasks. Runge *et al.* (2025) address this issue by enhancing static writing prompts using GPT-4.1 (OpenAI, 2024) to generate interactive content.

The implementation of «virtual field trips» proved to be particularly effective in contextualizing language learning. By transporting students to diverse settings such as restaurants, factories, and hospital surgery rooms, these virtual experiences provided authentic contexts for language use. This approach addresses one of the key challenges in ESP education, bridging the gap between classroom learning and real-world applications.

The observed reduction in absenteeism and improved punctuality further underscore the motivational impact of technology-enhanced learning. These behavioral changes suggest that students find the technology-integrated classes more engaging and valuable, leading to a stronger commitment to their studies.

These outcomes suggest that educators, curriculum designers, and teachers should incorporate technology and recommend the use of electronic devices and software in their curricula and teaching practices. These outcomes align with Saudi Arabia's National Transformation Program and Vision 2030 objectives; traditional classroom methods must evolve to meet these national goals.

7.2.2. ESP tech-motivation matrix

In light of our findings, we introduce the ETMM as a conceptual framework that integrates the classroom technologies studied with the components of SDT (Deci and Ryan, 1985). The ETMM is organized as a grid linking each educational tool –Kahoot!, YouTube, and Blackboard– to SDT's three basic needs (autonomy, competence, and relatedness) and to the motivational outcomes observed. For example, Kahoot!'s gamified quizzes are mapped to competence (through instant feedback and skill-building) and relatedness (through friendly competition and collaboration), reflecting the motivational power of game-based learning strategies (Ratinho and Martins, 2023). YouTube video use is mapped to autonomy (through learner-controlled pacing and choice) and competence (through content reinforcement), in line with learners' positive perceptions of multimedia platforms for autonomous language learning (Ly *et al.*, 2024). Blackboard's structured LMS environment, by contrast, supports autonomy (via on-demand access and self-paced review) and relatedness (via online discussion) while also satisfying competence needs; indeed, over 80% of our participants reported that Blackboard increased their course motivation and satisfaction (Othman *et al.*, 2024). In this way, the ETMM synthesizes our empirical observations with SDT by explicitly showing how each tool's affordances satisfy specific psychological needs and lead to the positive motivational responses we documented.

Table 1 presents a simplified version of the ETMM, mapping each digital tool to the primary SDT element it supports and the corresponding student response observed in the study.

Table 1

Tool	SDT element(s) supported	Observed student response
Kahoot!	Competence/Relatedness	Increased engagement, friendly competition, low anxiety.
YouTube	Autonomy/Competence	Greater initiative, self-paced learning, increased confidence.
Blackboard	Autonomy/Relatedness	Class connectedness, peer support, focused participation.

Source: own production.

This framework unites previously separate strands of research into a single, coherent model. Prior studies have shown that game-based tools like Kahoot! tend to boost engagement and motivation in language learning (Licorish *et al.*, 2018), and that multimedia platforms like YouTube can promote learner autonomy and control (Ly *et al.*, 2024). However, no existing framework has systematically mapped these or other ESP technologies onto the underlying psychological needs framework. The ETMM fills this gap by translating theoretical constructs into a practical pedagogical map. By doing so, it extends the literature on tech-enhanced language education and motivation –for example, by illustrating Deci and

Ryan's insights that providing choice and mastery experiences increases intrinsic motivation (Deci and Ryan, 1985)–. The matrix thus provides a concise visual lens to interpret our study's results and contributes to theory by explicitly linking tool-specific features with SDT components. This dual contribution –integrating concrete field data with a well-established motivation theory– makes the model a novel conceptual advance in the ESP education literature.

Importantly, the ETMM emerged directly from our data as much as from theory. It encapsulates both the theoretical SDT perspective and the practical insights gleaned from student feedback and observations. In our interviews, for instance, many students emphasized how Kahoot! quizzes (with instant scoring and leaderboards) made the ESP lessons more enjoyable and socially engaging –clear evidence of relatedness and competence support (Licorish *et al.*, 2018; Deci and Ryan, 1985)–. Similarly, respondents reported that YouTube's on-demand videos gave them a sense of control and boosted their confidence by reinforcing material (Ly *et al.*, 2024). Blackboard's well-organized content and immediate online submissions likewise translated into reported gains in focus and self-efficacy (Othman *et al.*, 2024). By mapping these specific examples to SDT needs, the ETMM provides a clear interpretive scheme: whenever students express heightened interest or persistence, one can trace those responses to particular need-satisfying features of the technology (e.g., feedback, choice, social connection). Thus, the ETMM acts as a bridge between our qualitative findings and SDT, reformulating our raw results in conceptual terms. In essence, it reframes the classroom technologies not just as isolated tools, but as systemic enablers of autonomy, competence, and relatedness in ESP learning.

Looking ahead, the ETMM offers concrete guidance for both practitioners and researchers. Educators can use the matrix to design or select technology-enhanced activities tailored to specific motivational needs: for example, by adding Kahoot!-style competitive games to strengthen relatedness and competence, or by assigning open-ended video projects on YouTube to promote autonomy. The framework also suggests ways to balance tool use–ensuring, for instance, that an activity aimed at boosting autonomy is complemented by another that fosters relatedness. For researchers, the matrix provides a testable conceptual scaffold: future studies can examine additional tools (e.g., language learning apps or collaborative platforms) and refine the matrix for different contexts, or measure how well interventions based on ETMM predictions perform. In sum, by grounding itself in our study's findings and in SDT theory, this model not only reframes our discussion of the results but also sets a foundation for subsequent inquiry. It transforms our insights into a reusable analytical lens and invites others to build on it to better understand and enhance student motivation in ESP courses.

7.3. Interview findings

The findings from the interviews conducted with ESP students revealed a clear and enthusiastic endorsement of the integration of technology in their learning experiences. Students shared various insights into how technology enhances motivation, engagement, and overall

learning effectiveness in the classroom. Students unanimously recognized the value of various technological tools in their education. Platforms like Kahoot!, Duolingo, and Brilliant, along with devices such as projectors, iPads, laptops, and smartboards, were frequently mentioned as essential resources that make the ESP classroom more engaging and motivating.

The interviews illustrated that technology significantly enriches the learning experience. The respondents noted that the use of multimedia, such as videos and interactive presentations, captured students' attention and facilitated lively discussions. One student remarked on how the interactive nature of these tools not only made learning enjoyable but also transformed the classroom atmosphere into a more collaborative environment. One student reflected: «The video we watched before writing task 2, which was about promoting creative thinking, helped us a lot in developing ideas, structure, and vocabulary» (student D, personal communication, January 25, 2024). Another student stated that «the video about engineers' contributions to many aspects of our life made us feel proud that we are studying engineering and helped us a lot in the next speaking task in terms of ideas, structures, and vocabulary» (student E, personal communication, January 27, 2024).

Students emphasized that technology simplifies the teaching and learning processes. The abundance of information available online, coupled with the convenience of accessing it anytime and anywhere, has made students more willing to engage with their studies. The ability to find resources such as e-books and educational videos online has replaced traditional methods, making learning more dynamic and less monotonous. The students' answers to the weekly diary emphasized the fact that using technology in the classroom breaks the monotonous environment and motivates students to interact and willingly do their tasks and submissions.

Technology also aids in organizing learning materials, making it easier for students to manage their assignments and resources. The digital nature of these tools helped reduce clutter and allowed a more streamlined approach to studying. Immediate feedback emerged as a crucial component of the learning process. Students appreciated how quizzes and interactive exercises provide instant results, allowing them to identify areas for improvement quickly. This immediate reinforcement not only boosts their sense of competence but also encourages ongoing engagement with the material.

When discussing class attendance, responses were mixed. Many students reported that the engaging, technology-enhanced lessons made classes more appealing and increased their willingness to attend. However, some students stated that technology did not significantly alter their attendance habits. As student F noted, for him, technology had little impact on attendance, whereas student G mentioned that the teacher's innovative use of technology helped reduce his absences. Only one respondent, student H, recalled a negative experience where a teacher's over-reliance on a projector and slides –without dynamic engagement– led to boredom and decreased interest. This discrepancy suggests a varied influence of technological integration on individual students' motivation levels.

The interview results provided valuable insights into students' perceptions and experiences with educational technology in their ESP classes. The overwhelming positive response to tools like Kahoot!, a game-based learning platform, highlights the potential of gamification in language education. Students also appreciated the availability of diverse technological tools, including mobile phones, tablets, and smartboards, which facilitated their learning process. Some students even mentioned using PlayStation to practice language skills with native speakers, showcasing self-directed learning beyond the classroom.

Technology has also made the learning process more accessible and enjoyable for students. Many appreciated the flexibility in accessing information and the ability to learn at their own pace. The competitive element introduced by tools like Kahoot, with incentives like bonus marks, was a strong motivator for engagement. Additionally, students noted the organizational benefits of technology, such as easy access to e-books and learning materials, which helped them focus more on learning rather than administrative tasks.

Findings also showed that students responded positively to inference-based activities in both speaking and writing. These activities encouraged higher-order thinking, creativity, and critical thinking, making learning more meaningful. Students also mentioned that technology-assisted lessons using videos and PowerPoint presentations made concepts clearer and more engaging. On the topic of assignment submission and feedback, respondents unanimously noted that digital methods made these processes much simpler and faster. Platforms such as Blackboard and Turnitin eliminated the tedious aspects of manual submission, while automated feedback and plagiarism-checking tools provided prompt and accurate responses. This efficiency allowed students to focus more on learning than on administrative tasks.

In summary, the interviews revealed that students view technology as a vital asset in the ESP classroom, significantly enhancing their motivation and engagement. The various tools and platforms not only make learning more enjoyable but also facilitate better organization and immediate feedback. However, it is essential for educators to strike a balance in their use of technology to avoid pitfalls that could negatively impact student engagement. This comprehensive understanding of students' experiences with technology provides valuable insights for improving the integration of educational technology in ESP education.

7.4. Discussion of interview findings

Motivation is a crucial factor in the teaching-learning process, as it drives students' engagement, performance, and overall success. According to the research hypothesis, motivation exists within the classroom environment, and the integration of educational technology plays a significant role in shaping that environment. The findings align with the SDT of motivation (Deci and Ryan, 1985), which suggests that technology enhances students' sense of competence and autonomy. The preference for gamification and competition in tools like Kahoot! supports research on the effectiveness of extrinsic motivators in education. While

some argue that intrinsic motivation is more sustainable, these findings suggest that a well-balanced mix of extrinsic rewards and engaging activities can lead to better student participation and performance.

Students' appreciation of technological tools in reducing cognitive load also reflects the importance of learning efficiency. Technology simplifies tasks such as assignment submission and feedback, allowing students to focus more on content mastery rather than bureaucratic processes. This aligns with studies on the role of digital tools in enhancing classroom management and student learning outcomes.

The issue of absenteeism is particularly concerning in Saudi Arabia, where chronic absenteeism can lead to significant learning gaps. The results indicate that educational technology has the potential to counteract this issue by making lessons more engaging. The immersive and interactive nature of technology-based learning encourages students to attend classes regularly and participate actively.

Observations of ESP classrooms confirmed that students were more engaged when technology was integrated. The dynamic classroom atmosphere, characterized by interaction, excitement, and curiosity, starkly contrasted with the traditional «chalk-and-talk» method. Students' ability to recall lessons more vividly when taught with technological tools reinforces the impact of technology on long-term memory retention. This supports research on multimedia learning theories, such as Paivio's (1986) dual coding theory, which emphasizes the benefits of combining verbal and visual information. This also goes with the experimental study conducted by (Ziv, 2024) about the effect of visual mental imagery on recall of vocabulary through forming visual and verbal memory hints (dual coding).

While our study demonstrates notable motivational benefits from Kahoot!, YouTube, and Blackboard, it is equally vital to consider potential limitations and learner variability. Some participants reported digital distractions –off-task browsing during video lessons or heightened anxiety when tracked on Kahoot! leaderboards– which can erode focus and inadvertently provoke stress rather than bolster competence (Cayubit, 2021). Others described moments when an overreliance on projection –absent interactive engagement– led to classroom boredom and disengagement, underscoring the need to preserve the instructor's presence and rapport.

Inconsistent levels of technological literacy led to frustration among some students due to unfamiliar interfaces or the need for extra support to navigate the LMS, thereby constraining their autonomy. Echoing Sweller's Cognitive Load Theory (2011) and Dörnyei and Kubanyiova's cautions about technology's double-edged effects (2014), these insights highlight that without thoughtful instructional design, scaffolding, and digital-literacy training, educational technologies can overload learners or fuel unhelpful social comparison. Therefore, effective integration demands a judicious balance: pairing engaging digital features with clear guidance, targeted training, and strategies to curb off-task behavior –ensuring that technology consistently empowers rather than impedes student motivation–.

The findings generally indicate that educational technology enhances student motivation, engagement, and learning outcomes in ESP classrooms. The discussion further supports the findings obtained by relating them to established motivation and learning theories, reinforcing the argument that integrating technology in education is essential for modern classrooms.

8. Implications

The findings of this study have several important implications for ESP instruction and the broader field of language education. The positive response to multimedia content suggests that ESP curricula should incorporate a rich variety of visual and auditory materials. This not only caters to different learning styles but also provides authentic contexts for language use. The success of interactive platforms like Kahoot! indicates that ESP courses should incorporate more game-based and competitive elements. These can serve as powerful motivators and make language learning more enjoyable.

The enthusiasm for «virtual field trips» and real-world applications underscores the importance of using authentic materials in ESP instruction. Technology can bridge the gap between classroom learning and real-world language use, providing students with valuable context for their language skills. This aligns with the communicative approach to language teaching, which emphasizes the importance of authentic, meaningful communication in the target language. The students' use of technology for self-directed learning, such as using PlayStation for language practice, suggests that ESP courses should encourage and guide students in using technology for independent language learning outside the classroom. This approach can foster learner autonomy and help students develop lifelong learning skills, which are crucial in today's rapidly evolving job market. Indeed, any approach that extends the teaching-learning process beyond the classroom and regular class hours can be considered one of the key benefits of technology. Teachers who integrate online tasks through digital platforms enable students to develop essential skills that will support their academic and professional success.

Technology in the classroom enables teachers to differentiate instruction; that is, teachers use a variety of teaching strategies to meet the diversity of students. Students are provided with different avenues so that each student learns at his own pace. For some, one example is enough to understand, others may need three or more examples. Certain computer programs can fulfill this successfully (Tomlinson, 2001).

The positive response to the video guide for research paper writing demonstrates how technology can effectively scaffold complex language tasks. ESP instructors should leverage technology to break down challenging tasks into manageable steps, providing students with the support they need to tackle complex language activities. This scaffolding approach can help build students' confidence and competence in using English for specific academic and professional purposes. The appreciation for flexible, self-paced learning enabled by technology suggests that

ESP courses should strive to offer more personalized learning experiences, allowing students to progress at their own pace. This aligns with current trends in education towards more individualized instruction and recognition of diverse learning styles and needs.

The effective use of technology by teachers in this study highlights the importance of ongoing professional development in educational technology for ESP instructors. As technology continues to evolve, it's crucial for teachers to stay updated on the latest tools and best practices for integrating technology into language instruction. These findings align with the broader literature on technology in language education. For instance, the observed increase in student engagement corroborates the work of Vasbieva and Saienko (2018), who found higher levels of motivation and engagement among ESP students using technology. The students' appreciation for accessible and flexible learning aligns with Housand and Housand's (2012) findings on how technology can foster autonomy and curiosity.

The implications of this study extend beyond the immediate context of KAU. As globalization continues to shape the job market, the demand for professionals with strong ESP skills is likely to grow. By leveraging technology effectively, ESP programs can better prepare students for the linguistically diverse global workplace. Moreover, the principles of technology integration observed in this study could potentially be applied to other areas of language education and even other disciplines.

The findings from the research underscore the critical role of aligning technology integration with the specific needs of ESP learners. ESP students often require language skills that are specifically tailored to their professional fields, such as engineering, medicine, or business. Technology can significantly enhance the learning experience by providing authentic, context-specific materials that align with students' career goals. For instance, virtual simulations and role-playing activities can be particularly beneficial for engineering students, allowing them to practice technical communication skills in realistic settings. Similarly, medical students can gain from interactive case studies that require the application of medical terminology in context (Agzamovna, 2024; Belabcir, 2024; Mulyadi *et al.*, 2023).

The integration of technology in ESP courses not only supports the development of language skills but also fosters learner autonomy and motivation. Blended learning environments, which combine online and face-to-face interactions, have been shown to enhance language skills and promote self-directed learning among ESP students (Ali *et al.*, 2024; Banditvilai, 2016). Moreover, the use of ICT in ESP classes has been identified as crucial for meeting the specific needs of students, particularly in fields like engineering, where there is a strong demand for improved English proficiency (Belabcir, 2024).

Overall, the research highlights the importance of technology-enhanced learning in ESP contexts, emphasizing the need for materials and teaching methods that are responsive to the unique requirements of different professional fields. This approach not only aids in language acquisition but also prepares students for their future careers by integrating professional skills with language learning (Agzamovna, 2024).

In conclusion, the integration of technology in ESP classrooms has the potential to transform the learning experience by enhancing motivation, engagement, and academic performance. However, the successful implementation of technology requires careful planning, teacher training, and a focus on aligning technology with the specific needs of ESP learners. By addressing these challenges, educators can create a more engaging and effective learning environment that prepares students for success in their future careers.

In addition to the implications for ESP instruction, the findings of this study also have broader implications for educational policy and practice. Policymakers should consider the importance of investing in educational technology infrastructure and teacher training to ensure that all students have access to the benefits of technology-enhanced learning. Furthermore, the study highlights the need for ongoing research into the impact of emerging technologies, such as artificial intelligence and virtual reality, on student motivation and engagement. By staying at the forefront of technological advancements, educators and policymakers can ensure that students are equipped with the skills and knowledge they need to succeed in the 21st century.

9. Conclusion and recommendations

The results of the study reflected through students' interaction and engagement show that educational technology contributes to a relaxing and motivating atmosphere. Educational technology captivated students' interest, improved their attitudes, generated their enthusiasm, and replaced teacher-dominated lessons with a learner-centered approach. Students recognized educational technology as an unavoidable asset to the teaching-learning process that revolutionized the process and dramatically changed the roles of teachers and students. Teaching, learning, assessment, and monitoring the whole process turned into technology-based, which is an extension of students' normal behavior and an increase in time of exposure to the learning material, which was traditionally exclusive to the student's schedule.

This study provides strong evidence for the positive impact of technology on student motivation and engagement in ESP classrooms at KAU. The findings suggest that a well-implemented technology-enhanced curriculum can create a more dynamic, engaging, and effective learning environment. As technology continues to evolve, it will be crucial for ESP programs to stay abreast of these developments and continuously refine their approach to technology integration.

As we move forward, it will be essential to continue researching and refining our understanding of how technology can best support language learning. This may involve exploring emerging technologies such as virtual reality, artificial intelligence, or adaptive learning systems. By staying at the forefront of technological advancements and pedagogical research, ESP programs can ensure that they continue to provide relevant, engaging, and effective instruction that meets the evolving needs of students and the global marketplace.

The study is limited by the number of participants where the researchers were unable to find teachers and students ready to break the traditional routine of teaching. The study is also limited by time, as the experimentation was interrupted by exams and Ramadan (a month in the Gregorian calendar when Muslims all over the world fast and celebrate Eid). Additionally, the sample size was relatively small, and the study was conducted in a single institution. Future research could benefit from larger-scale studies across multiple institutions to enhance the depth of understanding. Additionally, longitudinal studies could provide insights into the long-term effects of technology integration on language proficiency and motivation.

Another limitation of this study is that all participants were male students. This reflects the institutional and cultural context of KAU, where male and female students study on separate campuses and are taught by faculty of the same gender. Consequently, data collection through classroom observations and interviews was limited to the male section, as access to female participants was not possible within university regulations. Therefore, the findings represent the perspectives of male ESP learners in this context and should not be generalized to female or co-educational settings. Future research is encouraged to include female cohorts or multi-campus comparisons to provide a more comprehensive understanding of technology-enhanced motivation across genders.

The results also raise questions about the potential drawbacks or challenges of technology integration in ESP classrooms. While the overall response was positive, it's crucial to consider issues such as technology access and equity, potential distractions, and the need for balance between technology-enhanced and traditional teaching methods. Future studies could explore these aspects in more depth, providing a more comprehensive picture of the role of technology in ESP education.

The study suggests further training in the effective utilization of technology in the classroom, especially for teachers with more than ten years of experience. It also advocates for increased integration of technology in the classroom to diversify traditional learning environments. Further research is recommended to shed light on the advantages of using educational technology in the classroom. The findings of this study underscore the transformative potential of educational technology in enhancing student motivation and engagement in ESP classrooms. By leveraging the power of technology, educators can create a more dynamic, engaging, and effective learning environment that prepares students for the demands of the global economy. As technology continues to evolve, it will be essential for educators and policymakers to stay at the forefront of these developments and ensure that all students have access to the benefits of technology-enhanced learning.

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Contribución de autores al trabajo. K. K. O., S. S. M. y M. K. U. han contribuido a partes iguales en la elaboración de este estudio de investigación.

Appendix 1. Motivation checklist

Students feel motivated when they are/have...

- ... pleased while getting engaged in a task.
- ... enthusiastic and willing to finish classroom activities.
- ... curious to know more about a certain topic and keep asking.
- ... happy and satisfied with what they achieved.
- ... have lower level or no stress.
- ... have greater autonomy and goal attainment.
- ... attend classes regularly.
- ... ready to continue after the end of the class.
- ... unaware of any distractors.
- ... rarely check the time to see how much time is left.
- ... students take notes and interact with course material.
- ... students are willing to revise and improve their work.

Appendix 2. Interview questions

1. What technology tools, apps or platforms have made learning more fun to you?
2. How did technology make you more willing to learn?
3. How did the teacher use technology to make learning more interactive and engaging?
4. Mention one clear situation where technology made learning more motivating.
5. How did technology make submitting assignments easier and getting the feedback and result faster?
6. How did using technology in the ESP class influence your attendance?
7. Do you remember a situation when technology didn't motivate you to attend an ESP class? When? and what happened?