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Influence of Multimedia Technology in English Language Learners (ELLs) in Bangkok, Thailand: Basis for Capacity-Building Program for Teachers

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ABSTRACT

This study examined the influence of multimedia technology integration on English language learning outcomes of the English Language Learners (ELLs) in international schools in Bangkok, Thailand. Specifically, it aimed to determine the relationship between multimedia tools and students' motivation, engagement, and English language comprehension, as well as to propose a capacity-building program for teachers. A quantitative descriptive–correlational research design was employed, involving forty (40) English teachers from nine (9) international schools. Data were collected using a structured survey questionnaire and analyzed using weighted mean and Spearman rank correlation. The findings revealed that multimedia technology integration was generally effective in English instruction. Online educational resources demonstrated the strongest relationship with students' motivation, engagement, and comprehension, while instructional videos significantly supported language understanding. However, interactive applications and multimedia presentations showed weaker associations. Results further indicated a significant relationship between multimedia integration and all learning outcomes. Based on these findings, a capacity-building push-in intervention program was proposed to enhance teachers' competencies in integrating multimedia tools effectively. The study highlights the importance of aligning technology use with pedagogy to improve English language learning outcomes.

Keywords: *Multimedia Technology Integration, English Language Learners, Student Engagement, Student Motivation, Language Comprehension, Capacity-Building Program*

INTRODUCTION

The integration of multimedia technology in English language teaching has significantly transformed instructional practices, particularly in addressing the diverse needs of English Language Learners (ELLs). Grounded in the Cognitive Theory of Multimedia Learning, the combination of visual and auditory inputs enhances comprehension, retention, and engagement (Richard E. Mayer, 2022; Teng, 2022a). Empirical studies further highlight that digital tools such as instructional videos, interactive applications, and digital storytelling can improve language acquisition, motivation, and learner autonomy in technology-mediated environments (Roy, 2024; Shadiev & Wang, 2022; Zhang & Zou, 2022).

Despite these benefits, the effectiveness of multimedia integration remains inconsistent. Evidence suggests that access to technology alone does not guarantee improved learning outcomes; rather, the quality

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of pedagogical implementation is a critical determinant (Shadiev & Wang, 2022). The Technological Pedagogical Content Knowledge (TPACK) framework emphasizes the alignment of technology, pedagogy, and content; however, many educators experience difficulties in applying this integration effectively in classroom practice (Arifuddin et al., 2025; Yang et al., 2023). In addition, poorly designed multimedia instruction may lead to cognitive overload and reduced learning efficiency, limiting its intended impact (Anshari, 2024; Bland et al., 2024). These contradictions highlight the need for more context-specific investigations into multimedia use in authentic classroom settings.

In Southeast Asia, educational reforms have increasingly emphasized digital transformation to enhance global competitiveness. International organizations such as UNESCO (2022) advocate for the integration of information and communication technologies (ICT) alongside teacher capacity development. However, disparities persist in implementation, particularly in terms of teacher readiness and instructional quality.

Thailand reflects this ongoing challenge between policy and practice. National initiatives such as Thailand 4.0 promote digital innovation and technology-enhanced learning, while policies from the Ministry of Education and the Office of the Basic Education Commission encourage the use of multimedia tools to improve English proficiency and 21st-century skills (Ministry of Education, 2023; OBEC, 2021). Nevertheless, Thailand's relatively low performance in the EF English Proficiency Index (EF Education First, 2024) suggests that these efforts have yet to yield substantial improvements in language outcomes.

At the institutional level, particularly in urban centers such as Bangkok, access to multimedia resources is relatively high. However, a gap remains between availability and effective pedagogical use. Teachers often face challenges related to limited training, confidence, and instructional support in integrating multimedia tools meaningfully (Tiang-Uan, 2021; Tanapaisankit et al., 2024). Consequently, the potential of multimedia technology to enhance learner motivation, engagement, and comprehension is not fully realized. Moreover, empirical research examining these relationships within the Thai ELL context, particularly in international school settings, remains limited.

Addressing these gaps, the present study investigates the influence of multimedia technology integration on ELLs' motivation, engagement, and English language comprehension in international schools in Bangkok. It further proposes a capacity-building program aimed at strengthening teachers' technological and pedagogical competencies. By providing context-specific evidence, this study contributes to bridging the gap between policy and practice and advancing more effective approaches to technology-enhanced language instruction.

Literature Review

Technology-Supported Language Learning And 21St Century Skills

The 21st-century learning model is anchored on the 4Cs, which include communication, collaboration, creativity, and critical thinking. In this context, digital technologies and multimodal learning are considered vital components of effective teaching and learning in modern education. For example, New World Learning in England follows the 4Cs model and utilizes digital technologies in learning; however, only 2.17 percent of English textbooks in England fit well in terms of the 4C model. In addition, much emphasis in literature is given to the association between teaching, 4Cs, and technology, which asserts that there is a need to research on the convergence of teaching, 4Cs, and technology.

Moreover, Shadiev and Wang (2022) present an in-depth review, which demonstrates the overlap of technology, pedagogy, and language learning. In particular, they demonstrate in their work that digital pedagogical tools help to improve collaboration, communication, and problem-solving in the East Asian educational environment. Problem-solving skills are also helped by creativity and constructive dispositions. Nevertheless, the issue of the technological and pedagogical readiness of teachers is still unresolved to a

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large extent. This gap is especially applicable when we refer to the ELL classrooms in Bangkok, where teacher preparedness is an important factor in the successful implementation.

The authors Stanevicienė and Zekiene (2025) investigated the results of performed systematic reviews on the theme of technology integration in tertiary education. The results revealed a positive impact of technology integration on learner autonomy and digital competence. The results of a global investigation revealed inequalities in accessing technology and a lack of standard evaluation criteria. Although a positive impact on learning outcomes was revealed, methodological inconsistency and underreporting were noted. In order to prove the relevance of international investigation results, it is necessary to perform a study with a specific orientation to the Thai EFL context.

Besides, Anshari (2024) investigated how interactive multimedia can affect the participation of students, pointing out that the effects of technology on success depend on pedagogical intention and not on technology itself. His review of literature and systematic review of the various educational levels support the significance of pedagogy in the multimedia-based language teaching. In turn, to Bangkok classrooms, multimedia lessons must be calculated to increase the level of engagement and learning.

Elaborating on pedagogical models, Arifuddin et al. (2025) examined the idea of TPACK integration in instruction and emphasized that the perception of long-term confidence in the use of technology is formed during professional development. TPack implementation is frequently lacking in follow-up assessment even though it is done across international borders. Consequently, TPACK training programs based on practices with a structured emphasis on teachers in Bangkok could be used to enhance the use of technology in the teachers' activities in the long term.

Lastly, Leung et al. (2024) investigated the role of digital storytelling and TPACK development with preservice teachers in Hong Kong; the authors argued that the stages have become more developed in terms of digital literacy, creativity, and reflective thinking. However, very little is transferred to practice. Therefore, the teachers in Bangkok could need more assistance to help them bridge the gap between theory and practice.

Multimedia input, vocabulary learning, and retention

Video, pictures, sound and narration multimedia tools have been increasingly applied in improving vocabulary learning and memory in EFL environments. Multimedia plays a role in the inclusion of technology in the teaching of vocabulary because dual coding theory allows for a deeper level of learning. The studies presented below offer evidence of the effectiveness of multimedia in learning a language.

As an example, Teng (2022) developed experimental quantitative research on using multimedia in vocabulary acquisition and retention and found out that the learners who received video lessons performed better than those who received text only materials. These results indicate that audiovisual contents facilitate more processing and better memory of new words. However, understanding and memory are other fields that need more studies especially in practical settings such as Bangkok.

Secondly, the study by Li et al. (2024) aimed to investigate the effect of digital educational games for motivation among middle school and high school students via mediation and moderation. The study proved that the motivational factors of educational games enhance vocabulary acquisition, but lack of motivation could result in learning gaps. Thus, teachers should be cautious about incorporating motivational strategies in multimedia instruction.

Furthermore, Roy (2024) conducted a mixed-method study on the effect of digital storytelling on the vocabulary and motivation of middle school ELL students. The results showed that the students experienced an improvement in terms of narrative vocabulary, self-expression, and learning interest. This would indicate that multimedia interventions that are based on the storytelling may be successfully implemented in Bangkok classrooms in order to enhance vocabulary learning.

Equally, Bland et al. (2024) employed design-based research in creating multimedia visual aids in pharmacology classes taught at higher education. Moreover, he found that visual sequencing and signaling

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concepts enhanced performance and engagement in the learning process, and this is an indication of the significance of the cognitive load theory in multimedia design. The teachers of Bangkok could use this concept to maximize the teaching materials on vocabulary.

Besides, Zhao & Liang (2024) used quantitative modeling in reviewing motivation and multimedia application in higher education. This study proved that the motivational profile of learners determines their level of engagement and success, and adaptive multimedia learning has to be provided. Hence, teachers in Bangkok are to be trained to adapt the use of multimedia based on the level of student motivation.

Teachers' digital competencies, TPACK, and integration challenges (including Thailand)

However, the use of multimedia requires the teachers to be computer literate in order to effectively use this teaching aid. Technological Pedagogical and Content Knowledge TPACK is the framework used to assess the level of preparedness of the teachers to effectively use technology in their classes. Professional development programs are required in developing nations like Thailand to build the capacity of the teachers for the effective integration of technology.

The first study by Demissie et al. (2022) focused on the digital competence and the use of technology among secondary school teachers in Ethiopia. The study revealed that the major adversities faced by the teachers were the lack of proper training and infrastructure. This indicates the need for developing proper solutions for the developing nations. The same problem is seen in Thailand, where the lack of proper infrastructure in the state schools indicates the need for developing proper solutions.

Leung et al. (2024) focused their study on TPACK development for preservice early childhood educators in Hong Kong during the pandemic period. The preservice EFL teachers had positive TPACK in digital pedagogy, reflection, and teaching skills but did not demonstrate the application of their skills in practice. This supports the idea that in-service EFL teachers in Bangkok need to have their professional development sustained since they should be able to demonstrate their knowledge in practice.

Boonmoh and Sanmuang (2024) used a qualitative study to explore the quality of ICT teachers in Thailand in the context of COVID-19 restrictions. The authors found that curriculum incompatibility, lack of teaching materials, and lack of organizational support were the primary challenges for the teachers. The authors also highlighted that capacity-building programs are necessary at policy and practice levels, which supports the idea that more teacher support is necessary in Bangkok.

Likewise, Karanjakwut & Sripicharn (2024) explored the development of digital literacy skills in older EFL Thai teachers using a qualitative method. The authors were able to establish that experimental training improved teachers' confidence and effectiveness; however, challenges of speed and cultural competency existed. This implies that teacher development in Bangkok has to be dynamic and sensitive to a particular teacher's digital literacy skills.

Finally, Aroonsrimarakot et al. (2022) used a mixed method of inquiry to examine the challenges faced by Thai students in the course of their online learning. The authors cited teacher unpreparedness and poor interactivity as challenges to learning and acknowledged the importance of active teaching. This implies that teachers in Bangkok need to be equipped with digital literacy skills and how to develop interactive learning content to engage students.

METHODS

Research Design

The research design used in the study was descriptive-correlational quantitative research to determine the relationship between the integration of multimedia technology and the English language learning outcomes for English Language Learners in international schools in Bangkok, Thailand. Creswell (2014) asserts that descriptive-correlational research is used to examine the variables in their natural state

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to determine the extent of the relationship between two or more variables without manipulating the variables. This research design is applicable in educational research to determine patterns, correlations, and predictive factors for the teaching-learning processes.

In this research, multimedia technology integration was used as the independent variable, while students' motivation, involvement, and understanding of the English language were used as dependent variables. Multimedia technology integration refers to using multimedia technologies such as videos, audio materials, multimedia presentations, etc., to teach English to students. The descriptive aspect of this research design was used to evaluate the levels of multimedia technology integration as well as students' outcomes. The correlational aspect was used to evaluate the crucial relationship between independent and dependent variables. Additionally, multiple regression analysis was used to find out what aspects of multimedia technology integration are the best predictors of students' outcomes in learning English.

The use of a quantitative research approach was considered ideal for this research as it enables the collection of numerical data that can be statistically analyzed to generate empirical findings on the impact of multimedia technology integration. The data was collected using structured survey questionnaires administered to English teachers, thereby ensuring that the research process was objective, reliable, and consistent. The findings of this research are essential in establishing a program to assist English teachers in enhancing their skills.

Research Locale

This study was carried out in selected international schools in Bangkok, a vibrant and diverse city in Thailand known for its strong presence of international education. These schools serve students from different cultural and linguistic backgrounds, with English used as the primary medium of instruction. Because of this, they provide a meaningful setting for exploring how English Language Learners develop their skills in a modern, technology-supported environment.

A total of forty (40) English teachers from nine (9) international schools participated in the study. These schools are generally equipped with digital tools such as online learning platforms, videos, interactive applications, and multimedia presentations that are commonly used in classroom instruction. In many cases, teachers regularly integrate these tools to make lessons more engaging and to support students' understanding of the English language.

Bangkok was chosen as the research locale because it reflects a learning environment where technology and language education naturally come together. The city's international schools offer a practical context for observing how multimedia technology is used in real classrooms. This setting also allowed the researcher to better understand how these tools influence students' motivation, engagement, and comprehension, while providing a strong basis for proposing a capacity-building program that can support teachers in improving their instructional practices**.**

Participants And Sampling Technique

The participants for the study consisted of forty (40) English teachers who are currently teaching and assisting English Language Learners (ELLs) at the primary and secondary levels in the selected international schools in Bangkok, Thailand. The respondents for the study were purposefully chosen to ensure that they had direct instructional experience with ELLs and were actively using multimedia technology in their English language instruction. The participants for the study consisted of a diverse range of English teachers with different levels of experience, educational qualifications, and familiarity with using digital and multimedia technology in the classroom.

The English teachers were chosen as the respondents for the study because they are the ones who are directly involved in the planning, implementation, and evaluation of the English language instruction. The English teachers are the ones who are at the forefront in the implementation of multimedia-supported English language teaching strategies. Therefore, they are in the best position to assess the extent to which

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multimedia technology is integrated in the English language classroom. Moreover, the English teachers are the ones who are best placed to evaluate the extent to which multimedia technology impacts the learners' motivation, engagement, and English language comprehension. Since the English teachers work with the ELLs on a daily basis, they are able to notice the changes in the behavioral, emotional, and cognitive involvement of the learners with the multimedia technology. This provides valuable empirical information on the impact of technology-supported instruction on the learners' involvement, interest, confidence, and comprehension of the English language. Thus, the choice of the respondents from the English teachers guarantees that the information obtained is based on real-life practice and authentic contexts in the international schools of Bangkok.

In addition, the sampling method used in the study was purposive sampling. The purpose of using the purposive sampling method was to ensure that the participants of the study met the specific criteria or requirements, especially the teachers who have prior experience with the use of multimedia technology in the teaching of the English language for the ELLs. Firstly, the criteria for the respondents were the English teachers who work with the multimedia technology on a consistent basis in their instructional practice. Secondly, the criteria for the respondents were the teachers who make use of the multimedia technology in the instruction of the English language for the ELLs.

This criterion was very important because it allows the researcher to examine the influence of multimedia technology integration on learners' motivation, engagement, and English language comprehension. A teacher who has been exposed to multimedia technology integration in class will be in a position to offer more precise and informed feedback on the effectiveness of multimedia technology integration in class. Purposive sampling was considered appropriate for use in this study because it allowed the researcher to choose participants who possess particular characteristics. Since the objective of the study was to examine multimedia technology integration in English language teaching, it was important to seek information from teachers who are actively involved in multimedia technology integration in class. This method of sampling was very important in ensuring that the information collected was rich and appropriate for use in meeting the main objective of the study.

This method of sampling helped in enhancing the internal validity of the research because it allowed the researcher to seek information from teachers who are actively involved in multimedia technology integration in class. This helped in eliminating teachers who may not be actively involved in multimedia technology integration in class. Consequently, the sampling method facilitated a more focused examination of the implementation of multimedia technology and the impact on English Language Learners in the context of international schools in Bangkok. The sampling method facilitated the objectives of the study in the development of a capacity building program based on the real-life experiences and needs of English language teachers with ELLs.

Data Gathering

Before commencing with the data collection process, formal authority to conduct the study was granted. In this regard, approval was sought from the current school administration, which comprised the school head and principal, through an official email and a written request. Subsequently, a letter was dispatched to the participants explaining the purpose of the study, the processes involved in the study, and the ethical considerations made in the study. In this study, participants were not compelled to participate in the study, and their consent was sought before administering the study instrument. Once the consent of the participants was sought and granted, the survey questionnaire for gathering data from the participants was dispatched through email and an online survey platform. The participants were provided with adequate time to answer the survey questionnaire to ensure accuracy and completeness in their responses. The privacy and anonymity of the participants were maintained with utmost vigilance during the study.

After collecting the completed questionnaires, the responses underwent a thorough review, coding, and tabulation process. The gathered data were subsequently sent through email to the University Statistical

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Center for analysis utilizing IBM SPSS. The outcomes of the statistical analysis formed the foundation for interpreting and presenting the study's findings. Quantitative data analysis according to the methodologies specified by Creswell (2014). After gathering the data, the answers were coded, checked, and put into SPSS. Responses that were not complete or valid were not included in the final analysis. The researcher used descriptive statistics such as frequency, percentage, mean, and standard deviation to discuss the profiles of the individuals who responded to the questions and sought to find how well they understood, were motivated, and were engaged with multimedia technology. The Spearman Rank Correlation was applied to find the essential correlations between multimedia technology integration and each of the learning outcomes. The tests were conducted at a 0.05 level of significance, and the findings were shown in tables and figures for better clarity and interpretation.

Data Analysis

The analysis of the gathered data utilized descriptive and inferential statistics, including frequency, percentage, mean, standard deviation, Spearman rank correlation, and multiple regression analysis using the SPSS software with a significance level of 0.05.

Creswell (2014) asserts that the utilization of both descriptive and inferential statistics increases the reliability of the findings and strengthens the evidence-based conclusions. The utilization of this statistical treatment is consistent with the research questions, hypotheses, and conceptual framework of the study, thus assuring a comprehensive analysis of the factors affecting English language learning outcomes of ELLs. To answer the Statement of the Problem (SOP) No. One, the demographic profile of the respondents was described with regards to the following: age, gender, teaching field, years of teaching experience, highest educational attainment, and the number of training and seminars on the use of multimedia in teaching. Descriptive statistics effectively and systematically described and presented the demographic profile of the respondents. In addressing Statements of the Problems (SOP) Nos. 2, 3, 4, and 5, a systematic assessment of the levels of multimedia technology integration in English language instruction, as well as students' motivation, engagement, and comprehension, was conducted. In this regard, statistical tools such as the average weighted mean and standard deviation were used to assess the respondents' perceptions and experiences. These statistical tools were used to measure the level of consistency or variability of respondents' perceptions and experiences. The average weighted mean, on the other hand, was used to create a quantitative description of the extent or level of multimedia technology integration in English language instruction, as well as its impact on students' motivation, engagement, and comprehension. In gathering the required data, a questionnaire was used as a research instrument. A five-point Likert scale was used to measure respondents' perceptions and experiences on a standardized scale.

Ethical Consideration

The study was conducted in an ethical manner by adhering to all ethical principles to protect the rights, dignity, and interests of all participants. Before conducting the study, formal consent was obtained from each school administration, and informed consent was obtained from all participating teachers. The participants were clearly informed of the purpose of the study, what was involved in the study, and their voluntary participation. The participants were also informed of their right to withdraw from the study at any given time without suffering any negative consequences.

The issue of confidentiality and anonymity was maintained in an rigorous manner. The participants' confidentiality was maintained by using numerical coding rather than using their names. There was no disclosure of information pertaining to the participants in any manner. The data collected was stored in digital format using a password-protected system and could be accessed only by the researcher. The data will be retained for a specified period of time and will be properly disposed of after completion of the study.

In addition, the study was marked with transparency, honesty, and integrity with regards to data collection, analysis, and reporting. There was no manipulation or misrepresentation of data. The entire

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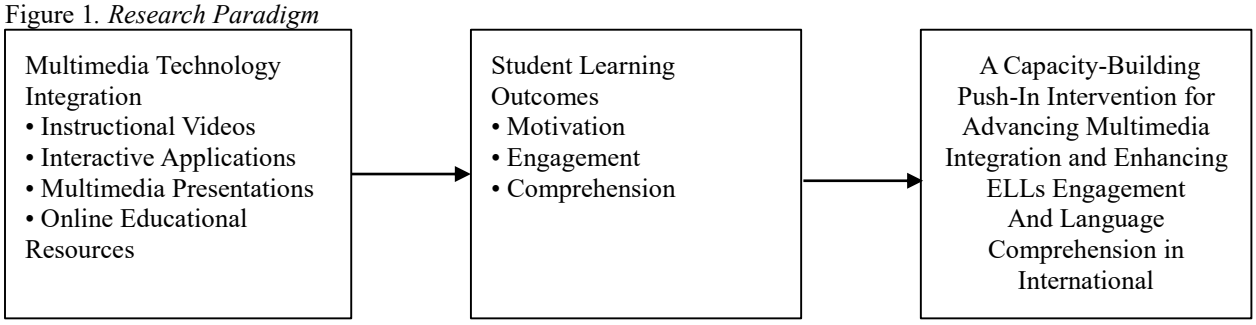
research process was guided by the ethical principles as proposed by Groenewald (2003) and Esterberg (2002), particularly with regards to voluntary participation, consent, confidentiality, and respect for the participants. Thus, the study was marked with professional responsibility and the highest standards of academic research ethics.

Figure 1. *Research Paradigm*



RESULTS AND DISCUSSION

Quantitative Findings

The findings of the study presented the results of the data analysis and the corresponding discussion based on the findings derived from the data gathered.

Table 1. *Summary of multimedia technology integration in English instruction. n=40*

Domain	Mean	Description
Instructional Videos	4.56	Very Highly Integrated
Interactive Applications	4.47	Highly Integrated
Multimedia Presentations	4.39	Highly Integrated
Online Educational Resources	4.38	Highly Integrated
Overall Mean	4.45	Highly Integrated

Scale: 4.51 – 5.00 (Very Highly Integrated), 3.51 – 4.50 (Highly Integrated), 2.51 – 3.50 (Moderately Integrated), 1.51 – 2.50 (Slightly Integrated), 1.00 – 1.50 (Not Integrated)

Table 1 shows that multimedia technology integration in English language instruction is highly integrated, with an overall mean of 4.45. Among the four domains, instructional videos obtained the highest mean (4.56, Very Highly Integrated), indicating their strong effectiveness in enhancing comprehension and engagement, consistent with the principles of multimedia learning (Mayer, 2022) and supported by studies highlighting the impact of video-based instruction on learner outcomes (Zhu et al., 2022). Interactive applications (4.47), multimedia presentations (4.39), and online educational resources (4.38) were all rated as Highly Integrated, suggesting that teachers consistently use these tools to support instruction and promote student participation, in line with findings on technology-supported language learning (Shadiev & Wang, 2022; Zhang & Zou, 2022). The results indicate that multimedia technology is widely utilized in English classes; however, its effectiveness depends on how teachers implement these tools in the learning process, particularly in aligning technology with pedagogical practices (Arifuddin et al., 2025).

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Table 2. *Summary of Learners Motivation, engagement and comprehension. (n=40 teachers)*

Domain	Mean	Description
A. Motivation	4.33	Highly
B. Engagement	4.33	Highly
C. Comprehension	4.40	Highly
Overall Mean	4.35	Highly

Scale: 4.51 – 5.00 (Very Highly), 3.51 – 4.50 (Highly), 2.51 – 3.50 (Moderately), 1.51 – 2.50 (Poorly), 1.00 – 1.50 (Not)

Table 2 shows that learners demonstrate a high level of learning outcomes, with an overall mean of 4.35 (Highly). Among the domains, English language comprehension obtained the highest mean (4.40), followed by motivation and engagement, both with a mean of 4.33. These results indicate that students are generally motivated, actively engaged, and able to understand English language content when multimedia technology is integrated, consistent with studies highlighting the effectiveness of multimedia input in enhancing comprehension and retention (Teng, 2022a) and the role of technology-supported learning in developing 21st-century language skills (Shadiev & Wang, 2022). Furthermore, the observed levels of motivation and engagement align with research emphasizing the importance of interactive and multimedia-rich environments in promoting student participation and interest (Anshari, 2024; Fredricks et al., 2016). Overall, the findings suggest that multimedia-supported instruction contributes positively to learners' motivation, engagement, and comprehension.

Table 3. *Relationship Between Multimedia Technology Integration and Learners Motivation, engagement and English Comprehension in Learning English. (n=40 teachers)*

Multimedia Technology Integration		Motivation	Engagement	Comprehension	Overall Mean	Interpretation
Instructional Videos	*r*	0.159	0.159	.317	0.212	Not Significant
	Sig.	0.327	0.328	0.046	0.234	
Interactive Application	*r*	0.159	0.178	0.179	0.172	Not Significant
	Sig.	0.327	0.271	0.268	0.289	
Multimedia Presentation	*r*	0.181	-0.011	0.258	0.143	Not Significant
	Sig.	0.264	0.944	0.108	0.439	
Online Educational Resources	*r*	.480**	0.302	.489**	.424	Significant
	Sig.	0.002	0.059	0.001	0.021*	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

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The analysis of the relationship between multimedia technology integration and student outcomes among *n = 40* teachers revealed that most multimedia tools showed weak and non-significant correlations, indicating that the use of technology alone does not automatically enhance learners' motivation, engagement, and English comprehension. This finding supports previous studies which emphasize that the effectiveness of technology integration depends more on pedagogical implementation and teacher competence than mere access to digital tools (Tanapaisankit et al., 2024; Tiang-Uan, 2021; Hava & Babayiğit, 2025).

However, differences were observed across specific multimedia components. Online Educational Resources (OERs) demonstrated moderate and statistically significant positive relationships with motivation ($r = .480$, $p = .002$) and comprehension ($r = .489$, $p = .001$), as well as a significant overall relationship ($r = .424$, $p = .021$). These results highlight their effectiveness in supporting language learning, consistent with studies emphasizing the role of technology-supported environments in improving learner motivation and achievement (Khatimah, 2023; Shadiev & Wang, 2022). In contrast, multimedia presentations and interactive applications showed weak and non-significant relationships ($p > .05$), suggesting that more traditional or poorly integrated digital tools may have limited impact on learning outcomes, particularly in contexts where English proficiency remains a challenge (EF Education First, 2024).

Instructional videos, on the other hand, showed a significant relationship with comprehension ($r = .317$, $p = .046$) but not with motivation or engagement ($p > .05$). This supports multimedia learning theory, which suggests that well-designed visual and auditory materials can enhance understanding (Mayer, 2022), but may not be sufficient to sustain active learner engagement. This aligns with research highlighting that engagement requires interactive and learner-centered approaches rather than passive content delivery (Fredricks et al., 2016; Anshari, 2024; Zhu et al., 2022).

While selected tools such as online educational resources and instructional videos show potential, multimedia technology integration as a whole remains largely non-significant. These findings suggest the need to shift from technology-centered practices to pedagogically driven approaches, emphasizing meaningful interaction, learner engagement, and strategic multimedia use to improve English language learning outcomes (UNESCO, 2022; Yang et al., 2023; Roy, 2024; Teng, 2022a).

CONCLUSION

The study concluded that multimedia technology is widely and effectively integrated in English language instruction in international schools in Bangkok, Thailand. Among the different tools, instructional videos emerged as the most utilized, followed by interactive applications, multimedia presentations, and online educational resources. These tools were consistently used by teachers to enhance lesson delivery, improve understanding, and create more engaging learning environments for students.

The findings also revealed that students demonstrated high levels of motivation, engagement, and English language comprehension. Multimedia-supported instruction contributed to increased participation, interest, and interaction among learners. While students showed strong behavioral and emotional engagement, cognitive engagement was relatively lower, suggesting the need for more strategies that promote deeper thinking and critical learning processes. Overall, the integration of multimedia technology was found to positively influence students' learning outcomes.

The study further established a significant relationship between multimedia technology integration and students' motivation, engagement, and comprehension. This indicates that the effective use of multimedia tools plays an important role in enhancing both the learning experience and academic performance of English Language Learners (ELLs). However, the success of multimedia integration depends not only on the availability of tools but also on teachers' ability to use them strategically and align them with instructional goals.

To strengthen the impact of multimedia technology in English language instruction, schools should prioritize continuous professional development programs that enhance teachers' digital and pedagogical competencies. Training should focus on the effective use of instructional videos, interactive applications, and online resources to support student-centered learning. In addition, schools should provide adequate technical support and encourage the use of scaffolded and proficiency-based multimedia materials to improve students' comprehension skills, particularly in listening and reading.

Future research may explore other factors influencing multimedia integration, such as teachers' digital readiness, institutional support, and students' learning preferences. Further studies may also consider using mixed-method approaches to gain deeper insights into how multimedia technology shapes students' learning experiences. These efforts can contribute to the development of more effective and inclusive strategies in English language education.

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