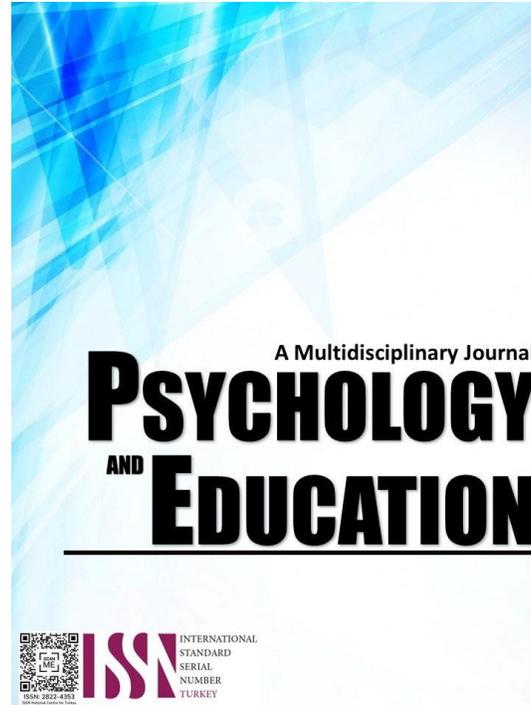


EXPERIMENTAL STUDIES ENHANCING THE ENGLISH PROFICIENCY OF COLLEGE STUDENTS: A META ANALYSIS



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Experimental Studies Enhancing the English Proficiency of College Students: A Meta Analysis

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Abstract

This research study aims to review ten experimental studies, published between 2015-2024, using teaching and learning intervention to enhance the English Proficiency of College students. It is used to combine the results of multiple studies on English proficiency of college students in TOEIC scores allowing to draw a broader conclusion based on a larger pool of data. Each study aimed to investigate the effectiveness of an intervention in enhancing English proficiency of college students. It also determined which interventions work best across different contexts or student population. Meta-analysis was used since there are lots of studies employing teaching or learning interventions to enhance English proficiency of college students. This study synthesizes findings from the multiple studies to provide insights into the overall impact of teaching and learning intervention through TOEIC test results and the effect size of each study and the overall study. The findings revealed that the interventions implemented enhanced the English proficiency or the TOEIC scores of the college students were effective as the scores in the posttests were significantly higher than the pretest. The effect sizes were also significant revealing that the interventions using technology, technology, modules and cooperative learning were effective in enhancing the student's English proficiency.

Keywords: *English proficiency, TOEIC, learning intervention experimental studies, meta analysis*

Introduction

English language proficiency is the ability of an individual to speak English effectively. This ability is essential in a globalized world, for it plays a significant role. English is incontestably the world's lingua franca which leverages globalization (Ed-dali & Baaqili, 2024). It is the primary language in various fields such as business, academia, media, entertainment, and the international business community (Parupalli & Rao, 2019). It facilitates effective collaboration, enables successful interaction with international stakeholders, and fosters a competitive edge in the job market (Ting, et.al., 2017). Thus, English proficiency is vital skill in a today's globalized community due to the rapid and emerging changes. It is also fundamental for personal, intellectual, and professional progress.

Devasia (2024) and Stone (2024) acknowledge the critical role of learning foreign languages in the field of international business communication and unanimously place English on the top list of languages learned worldwide for effective global commerce. Living in a globalized and interconnected world has increased the demands for English proficiency to promote educational and professional development, cross-cultural understanding and digital expansion.

Nevertheless, this is crucial and alarming to our college students or adult learners, especially for non-native speakers of the language. Almost all universities use English as their primary language of instruction. Proficiency in English is a vehicle to empower them to engage effectively in this era of digital landscape. College students must internalize the impact of English language competency in the global community. To measure the adeptness of English language proficiency the Test of English in Communication (TOEIC) is an assessment which is a recognized standard for gauging individuals' English language competence within professional contexts. TOEIC is designed by the Educational Testing Service (ETS), which primarily measures listening, reading, writing and speaking skills. This is used by a wide range of educational institutions, enterprises, and government entities globally. Given its widespread acceptability and applicability, TOEIC is a reliable indicator of English proficiency for non-native speakers desiring to demonstrate their ability to communicate in employment environments (Santos, et al.,2023). College students, who are about to enter the global workforce, are an important group for English proficiency studies. Their communication skills have a significant effect on their employment prospects, academic performance, and capability to compete in an economy that is worldwide (OpenAI,2024) . The test "has six secondary purposes: (1) to verify the current level of English language proficiency; (2) to qualify for a new position and/or promotion in a company; (3) to enhance professional credentials; (4) to monitor progress in English; (5) to set learning goals; and (6) to involve employers in advancing English ability". Embedded in these purposes are five approved intended uses that are explicitly recommended for TOEIC scores: hiring, placing, promoting applicants, measuring English language proficiency, and evaluating progress in English (ETS, 2015a; 2016a).

English proficiency is not only an academic requirement for college students. It is also a dominant language in higher education, academic research, and industries especially multinational companies. It is a life-sustaining skill that can meaningfully expand employability or potential for employment. The ability to communicate fluently and confidently in English dramatically enhances one's capacity to build and maintain professional relationships with stakeholders from diverse cultural backgrounds (Syafiq, et al.,2017).

Students in the tertiary level have to cope with the demands of the workforce industry. According to Philstar global report (2018) even a taxi driver in Dubai, English competency is a requirement, according to a study conducted by the Hopkins International Partners, which is the official Philippine representative to the group called Test of English for International Communication (TOEIC). Rex Wallen Tan, general manager of Hopkins International Partners, "explained that this is alarming considering that taxi drivers in Dubai,

United Arab Emirates, were expected to have a TOEIC proficiency score of 650, and business process outsourcing agents should have a score of 850 in the metric, while the average English proficiency score of a Philippine college graduate was only 631.4 (Basic working proficiency level), based on the metrics of the Test of English for International Communication.(Morallo,2018)

Based on the above premise, various investigations have looked into college students' English proficiency, outcomes are diverse and tailored to the environment. This study will utilize meta-analysis to allow a thorough compilation and inquiry of various data, resulting to a broad understanding of the relationships and factors influencing the English proficiency among college students.

The main purpose of this investigation is to determine the extent of TOEIC efficacy to college students' English proficiency performance. With this objective, the study will venture on a meta- analysis method of identifying what factors influence TOEIC has the greatest contribution to both students and teachers' performance.

Research Questions

The purpose of this meta-analysis was to review experimental studies using teaching and learning intervention to enhance the English Proficiency of College students published between 2015-2024. Specifically, the study sought to answer the following questions:

1. What are the features of the experimental studies using the interventions in enhancing English Proficiency of College students as measured by TOEIC in terms of:
 - 1.1. purpose of the study;
 - 1.2. methods used.
 - 1.3. intervention applied.
 - 1.4. findings of the studies; and
 - 1.5. conclusion and recommendations?
2. What is the effect size of each study and the overall effect size of all studies?
3. What instructional materials for enhancing English Proficiency of college students can be proposed based on the most effective intervention?

Literature Review

Relevance of English Proficiency

In today's globalized world, being able to communicate in English is essential for achieving academic success, especially for students from varied backgrounds in language and culture. English proficiency opens up countless opportunities for people in their personal as well as professional lives considering it is the universal language of economics, science, and global interaction. (Guilherme, 2007) Understanding the significance of this skill, colleges and universities and language learning centers have been emphasizing on developing strategies to enhance proficiency in the English language among students. Improving English language ability requires the creation of an authentic language learning environment. Students' language skills can be greatly enhanced by immersion programs or activities that actively use English in everyday contexts. (Lan, 2020) These programs give students the chance to practice speaking, listening, reading, and writing. Students can engage with native or proficient English speakers in an encouraging environment like language exchange programs, English-speaking clubs, and linguistic camps, which can strengthen their language skills and boost their self-esteem.

English proficiency entails an understanding of a language's grammatical structures and the capacity to apply that understanding in real communicative contexts. Language proficiency is the capacity of an individual to effectively use a language in diverse situations and to structure one's thoughts using a language (Diaz et al.,2024). According to the Common European Framework of Reference (CEFR), language proficiency comprises the knowledge, skills, and attributes acquired or learned for effective communication with others (Ekola, 2016). It is categorized into two domains: general competences (which encompass knowledge, skills, and existential competence) and communicative competences (encompassing linguistic, sociolinguistic, and pragmatic competences).

Test of English for International Communication (TOEIC)

A useful strategy for assessing students' English language proficiency is through the administration of a standardized and globally recognized test, such as the Test of English for International Communication (TOEIC), developed by ETS® (Educational Testing Service). The TOEIC is widely utilized by companies, institutions, and organizations to evaluate the English language abilities of students, employees, and job applicants (Test of English for International Communication, 2023). This examination assesses four key language skills: reading, listening, speaking, and writing. It serves as a valuable tool for individuals needing to showcase their English proficiency for academic or professional purposes.

Nevertheless, Santos et al. (2023) expressed that TOEIC is a language proficiency exam aimed at assessing English listening and reading skills and has become a widely recognized certification for measuring English proficiency. This study explored whether implementing online intervention programs, which included practice tests, could enhance the TOEIC scores of first-year and second-year students. Using an experimental research design, the study employed an independent samples t-test to analyze the impact of the online intervention programs on TOEIC performance. The findings reveal that the development of an online intervention program

significantly improves students' TOEIC scores, with participants of the program achieving higher scores compared to those who did not participate. Based on these results, the study concludes that online intervention programs can effectively enhance students' TOEIC performance and help them achieve better outcomes on the test.

Nakai (2019) examine the effects of an online text-to-speech resource for English classes. The website includes various automated synthesized voices (ASVs) speaking British and American varieties of English. The speaking speed can be changed easily. Japanese teachers have difficulty teaching the correct pronunciation of new English vocabulary. The common way of teaching English pronunciation is to use CDs with recordings of the voices of native speakers (NSs). The results show that an interaction effect of the treatment was found between the two groups ($F(1,43)=4.92, p \leq .05$) suggesting that the resource improved the students listening skills.

Saputra & Rionaldi (2022) study revealed that one of the pre-requisites for IISMAVO 2022 (Indonesian International Student Mobility Awards for Vocational Students) mobility grants for Indonesia Vocational Higher Education (VHE) students is having minimum TOEIC scores of 560 or equivalent. However, only a small number of State Polytechnic of Bengkalis students had the required TOEIC score and were qualified to enroll in the program. The research tried to improve students' TOEIC score through cooperative learning in "Sekolah TOEIC" program. The classroom action research was conducted in two cycles treatment. The results found that students' TOEIC scores increased significantly after the treatment. The pretest average score was 442, then it increased to be 562,6 in the cycle 1 and slightly decline 560,4 in cycle 2 and became 583,4 in the post test at the end of the program. It means that using Cooperative Learning in "Sekolah TOEIC" program could improve the students' TOEIC score.

Several research dealing with improving English proficiency test score using cooperative learning were also conducted. Retnaningsih.(2011) found out that Cooperative Learning can 1) improve students' TOEIC score, 2) attract the students to join TOEIC class, and 3) push the students to actively participate in the class. Another finding by Rionaldi & Saputra (2019) found that STAD (one of cooperative learning methods), was effective in improving students' TOEFL-like score. Overall, the research done indicated that students' score can be improved with proper training program.

Methodology

Research Design

This study utilized a meta-analysis method. It is used to combine the results of multiple studies on English proficiency of college students in TOEIC scores allowing to draw a broader conclusion based on a larger pool of data. Each study focus published experimental studies investigating the effectiveness of an intervention in enhancing English proficiency of college students. It also determined which interventions work best across different contexts or student population. Meta-analysis was used since there are lots of studies employing teaching or learning interventions to enhance English proficiency of college students. Meta-analysis can improve estimates of the effect size of each study and resolve uncertainty when results of the studies disagree. The effect size provides information about how much change is evident across all studies.

According to Cooper et al. (2013) and Hunter and Schmidt (2004), there are seven steps (Figure 2) conducted in the meta-analysis process.

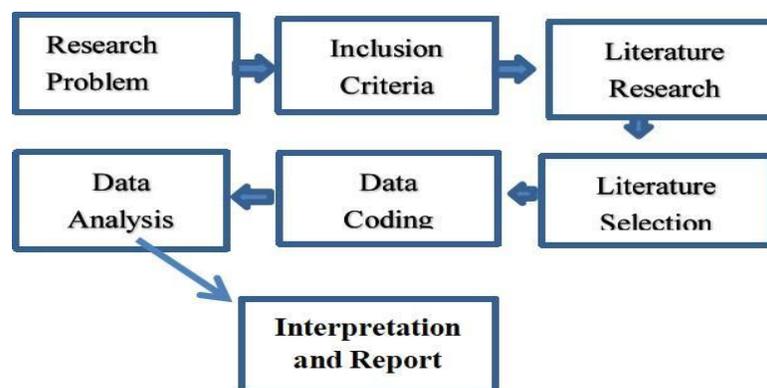


Figure 1. Steps in Conducting Meta Analysis

Data Coding

Data from each study is coded in a coding sheet about some information such as author(s), statistical data, location, environment, publication year, and sources of data. Some information involved in this study were investigated and examined (See Table 1).

The studies came from academic institutions of tertiary level of education in ASEAN countries.

The Kappa value was equal to 0,89 in which it interprets that the agreement level of two coders is high (McHugh, 2012) which suggests that the coding of the data in this meta-analysis is valid and credible for analysis.

Table 1. *The distribution of information of the research articles*

Characteristics	Category	Frequency	Percentage
Location	India	1	10%
	Indonesia	2	20%
	Thailand	2	20%
	Japan	1	10%
	Philippines	1	10%
	Korea	1	10%
	Taiwan	1	10%
	China	1	10%
	Year	2015-2019	2
2020-2024		8	80%
Publisher'	• Frontiers	1	10%
	• Elsevier Ltd.	1	10%
	• International Journal of Multidisciplinary Research and Publications	1	10%
	• International Conference on Applied Science and Technology on Social ...	1	10%
	• Journal ESTUPRO	1	10%
	• Journal of Language Teaching and Research	1	10%
	• Sage Open	1	10%
	• Canadian Center of Science and Education	1	10%
	• The Korea Association of Teachers of English (KATE)	1	10%
	• Linguistic Research (KHU ISLI)	1	10%

n=10

Sources of Data

In collecting the primary studies for inclusion in this present meta-analysis, the researcher performed electronic research to expand her search process. Initially, studies were assessed on the basis of information in the study titles and abstracts. And if found to be related, studies and its citation are imported into keeping for further review and checking. Duplicates were then identified and omitted. The next step was to recover the full text of the potentially qualified studies. These studies were re-examined and reviewed against the eligibility criteria being set. It was screened by two coders on a per study basis. After complete examination and checking, studies that were found suitable was statistically analyzed to determine the effectiveness of the intervention used in English Proficiency in TOEIC. Table 2 presents the information of the 10 research articles.

Table 2. *Basic Information of the Eleven Research Articles*

Author	Title	Year	Country	Journal /Indexed
1. Anthony Raj&Prajeesh Tomy	An experimental study on the influence of instructional mobile applications in enhancing listening comprehension of rural students in India	2024	India	Frontiers
2. Ramil Santos1,Cris Angelo Salonga2,Low el Urian3	Effectiveness of an Online Intervention Program in Enhancing the TOEIC Scores of Students	2023	Philippines	http://ijmrap.com/
3. Boni Saputra & Rionaldi	Improving Students' TOEIC Score through Cooperative Learning in "Sekolah TOEIC"	2022	Indonesia	atlantis-press.com
4. Armita Novriana Rambe, S.Pd, et.al	"Improving Students' TOEIC Graduation by using Self-Help Group (SHG) method on students of business administration department"	2023	Indonesia	jurnal.ugn.ac.id
5. Pallapa Lertcharoenwa nich	"The Effect of Communicative Language Teaching in Test Preparation Course on TOEIC Score of EFL Business English Students"	2022	Thailand	"Journal of Language Teaching and Research"
6. Ayako Nakai	"Use and Effects of an Online Text-to-Speech Resource to Improve English Listening for the TOEIC Test"	2019	Japan	https://researchmap.jp/
7. Hung-Chang Liao1,2 , Yi- Chang Li1,2 , and Ya-huei Wang1,	Optimal Cooperative Learning Grouping to Improve Medical University Students' English Competencies	2019	Taiwan	journals.sagepub.com/home/sgo
8. Silawuth Chaengjaroen	The Study of the English Preparation Course to Enhance Students' English Proficiency for the Standardized Test "Your Score is High; my Score is Low. How to Make it Higher?"	2024	Thailand	elt.ccsenet.org Published by Canadian Center of Science and Education
9. Na-Young Kim	"AI-integrated Mobile- assisted Language Learning: Is It an Effective Way of Preparing for the TOEIC Test in Classroom Environments?"	2022	Korea	http://journal.kate.or.kr
10. Smaa AlSaqqaf, Yi Yang,Ke Hu	The Effectiveness of the Incentive Autonomous Learning	2024	Malaysia	Journal of Language

Data Analysis

The effect size from each individual article was computed. An effect size is a quantitative measure of the magnitude of an experimental effect or correlation of two variables. It tells us how substantially different two variables or groups are. A larger effect size indicates a stronger relationship, while a smaller effect size suggests limited practical applications. In this study, the effect size of experimental designs was computed. Then the total effect size was determined for both research methods to determine the significance of TOEIC in determining the English proficiency of college students. To ensure distributed effect size data is symmetrical, Egger's regression test was conducted.

Ethical Considerations

The study followed the guidelines of the Declaration of Helsinki. It has been approved following the protocol of the Research and Ethics Committee of the University of the Visayas" with Reference No. 2024-434 dated October 17, 2024. The research do not involve human participation but only data mining from published research articles. Were used as data.

The author declares no conflict of interest. thus ethical considerations are those of asking permission from the authors of the articles to use their studies. Emails were sent to the authors and three authors responded and approved to use their studies. However, the researcher is still waiting for other authors to response. Secondly, data privacy was also practiced as in every study, there was no mention of the exact place and respondents of the study except the name of the author/s and country. This paper will not be published until such time majority of the authors will reply and consent to the use of their published articles.

Results and Discussion

This phase involves various stages of the analyses and reporting of the results conducted relative to the research objectives. This consists of descriptive data about the general characteristics and study features of the included studies, calculation of the Effect Sizes and its procedures as well. The study features were classified using Microsoft Word and Tables.

Generally, 2914 possible suitable studies were recognized by literature research (google scholar). After they filter and sort the year from 2015-2024 the result reduces into 1415 studies, then they sort again by using students and English language teaching only, then the result was 260 studies. Again the studies were checked manually for interventions, correlations and pretest-posttests difference and experimental and control group designs, only ten studies were left. Of the six studies provided by the librarian of the Academic Resource Center taken from EBSCO, only two studies were included.

Features of the Research Articles

The study selected ten research articles based on the selection criteria. Tables one to ten present the features of each research article on the following aspects: purpose of the study, method used, intervention applied, findings of the study, conclusion and recommendations. These tables present the data collected from the ten research articles. The study was only limited to ten since the search was only done in Google Scholar and EBSCO Host. This is one limitation of the study.

Table 3. *Features of the research article of Raj and Tomy, 2024*

Title	An experimental study on the influence of instructional mobile applications in enhancing listening comprehension of rural students in India
Purpose of the study	This study intends to investigate and explore the practical implication of utilizing mobile applications in language learning classrooms to foster the listening skills of those from rural backgrounds. Additionally, this study helps to understand the challenges of rural college students and promotes self-learning skills.
Method	"The study employed a true-experimental design. . The target population of this study was arts and science college students and 35 arts and science colleges are in the selected district. There are different types of colleges, including 29 self- finance colleges, five government colleges, and one aided college. A simple random sampling method was used

Intervention applied	<p>to choose the samples and a random number was generated for each type of college with the help of SPSS and three colleges were selected. The intervention was given only to the experimental group with the support of mobile apps and the control group was treated with the existing syllabus by the university. The intervention was carried out to enhance and test the listening skills of the participants and pre-tests and post-tests were employed for both groups.</p>
Findings	<p>The intervention was implemented by following apps such as the British Council app Listening, TOEIC (The Test of English for International Communication), and Listen English Daily Practice. “Learn English Podcasts”, developed by the British Council, provides many audio clips that allow learners to acquire new vocabulary and phrases while improving listening skills. Exercises and audio scripts for each episode are provided to help a learner assess their comprehension. This program teaches learners how to pronounce words properly and learn the English sound system. Additionally, learners may record their voice and contrast it with the example pronunciation</p> <p>Results of the comparison between the control and experimental group revealed that there was no significant difference between the groups in the pre-test, but there was a significant difference in the post-test, with the experimental group performing significantly better. Hence, the intervention made an impact on the student's listening comprehension.</p>
Conclusion and recommendations	<p>Aided college students scored higher values ($M = 20.2$, $SD = 5.4$) than the government ($M = 17.7$, $SD = 4.28$) and the self- finance colleges ($M = 17.6$, $SD = 3.96$). A $p = 0.007$ denoted that there was a level of significant difference and the table value was $F = 5.16$. Hence, there was enough evidence to reject the null hypothesis. College environments and infrastructure influence language skill acquisition outcomes, yielding varied proficiency levels among students.</p> <p>Studies have demonstrated that mobile learning could effectively promote listening skills in second-language learning by implementing the mobile learning method. This method can also cultivate learner autonomy and allow learners to take charge of their learning process by providing them with interactive learning activities. Mobile technology has become an integral part of our daily lives, offering learners unparalleled convenience and enabling them to accomplish tasks that were previously impossible. The M-learning method saves time, allowing learners to access a wealth of digital resources. The digital tools, such as audio and video materials, in ESL classrooms, have been successful in enhancing listening skills. Mobile apps promote multisensory learning, including listening, watching, and interacting</p> <p>The use of mobile phones in classrooms for language learning is crucial in education. To ensure effective implementation, schools and government entities should develop clear policies, provide teachers with training, select appropriate apps, address device access and equity, ensure network infrastructure supports mobile devices, emphasize cybersecurity and privacy, train teachers on effective classroom management strategies, encourage collaborative</p>

learning through mobile-based activities, and use mobile apps for instant feedback and language proficiency assessment. Governments should invest in supporting schools in acquiring mobile devices, educational apps, and teacher professional development. They should also promote digital literacy, integrate mobile-assisted language learning into national curriculum standards, support research on its effectiveness, invest in broadband accessibility, implement equity and inclusion policies, enforce data security and privacy regulations, and provide incentives for professional development in mobile-assisted language learning

The study of Raj and Tomy (2024) shows that mobile learning method has the potential to improve the English language skills of rural college students as it effectively helps to foster a better understanding of language usage in context; provides regular exposure to audio conversations; improves listening comprehension, accuracy, pronunciation, and active listening practice; and provides exposure to different accents. Through mobile devices, learners could easily engage with audio lessons and learners could use various resources such as podcasts, audiobooks, language learning apps, online videos, and conversation partners. Mobile devices provide quality content, self-motivation, internet connectivity, support to teachers, and transmit the cultural and linguistic context. Instructors can effectively utilize contemporary mobile technology to facilitate listening skills (Al-Jarf,2021). Access to smartphones and other mobile devices is limited in rural locations, making M-learning more difficult (Aliyu and Babayi, 2023). For optimal learning outcomes, high-quality devices and the internet are required. Self-motivation is especially important for rural students. Here, the researchers used the M-learning method to improve the listening skills of rural tertiary-level learners, and the hypotheses were statistically confirmed. Before the intervention, the students had low scores in listening comprehension and students had difficulty in understanding very basic vocabulary. However, it was proved that after implementing the mobile app training, the students had an improvement in their listening comprehension test scores which is shown in Table 3 and there was a significant difference in the pre-test and post-test means between the control and experimental groups. It is worth noting that none of the three colleges had language laboratory facilities for training sessions, but the researcher used mobile devices and applications to fulfill the fundamental skills required for the intervention.

Table 4. *Features of the research article of Ramil Santos et al.,2023*

Title	Effectiveness of an Online Intervention Program in Enhancing the TOEIC Scores of Students
Purpose of the study	“This study investigated whether the facilitation of online intervention programs, composed of practice tests, can help in maximizing the TOEIC scores of first-year and second-year students of a Philippine University”
Method Used	“The study made use of a post-test only two group experimental design to compare the scores of 100 students who did and did not utilize the online platform for practicing for TOEIC listening and reading tests.”
Intervention	The intervention used was an online intervention platform composed of practice tests. The intervention on the said online platform, utilizes remote access to review and practice materials, to assist students gain higher competencies both in English language listening and English language reading, which in turn, can promote higher language proficiency beneficial for the students’ academic progress.
Findings	The descriptive comparison of the TOEIC scores of 100 students showed that the 50 students who underwent the online intervention platforms have higher scores in both listening and reading (means= 445 and 373 respectively) in TOEIC than the other 50 students who did not receive the online intervention (means=328 and 262 respectively). Using the t-test of independent sample and at the 95%confidence interval, there is statistically significant difference in the mean scores of the TOEIC listening ($t=10.8, df=91.4, p<.05$) and reading ($t=10.8, df=91.4, p<.05$), between those with online intervention and those without intervention.
Conclusion and recommendations	This research found that using an online platform to help students prepare for the TOEIC exam significantly improved their scores in both listening and reading. Students who used the online program performed better than those who were not exposed to the

intervention. Hence, remote practice exercises are effective in improving the students' English proficiency. Future research should investigate whether this online program could also benefit teachers and other school staff who plan to take the TOEIC. Additionally, future studies should include students from a wider range of academic years, as this study primarily focused on first- and second- year students. Finally, future research should explore ways to create a more flexible online program that can accommodate the diverse needs of test-takers.

The above study aimed to evaluate whether an online intervention program could improve students' scores on the TOEIC, an English proficiency test widely used in academic and professional settings. The study revealed that the use of assisting online intervention programs, composed of practice tests has significantly improved the TOEIC results specifically listening and reading comprehension of the learners who underwent the intervention compared to those who did not undergo the online intervention programs. This result merely coincides with the studies of An (2021), Karlin and Karlin (2021), and Saputra (2022) that examined the utilization of online practice platforms and its impact on the students' TOEIC scores which indicates that the former has a significant positive effect on the latter. Furthermore, as supported by the findings of Hsieh (2023) wherein students find their TOEIC scores either "very useful" or "somewhat useful," results of the current study also suggest that introducing online language interventions integrated within English-related courses at the tertiary level can lead to higher employment opportunities for the students, both local and international, upon graduation as the result of having higher TOEIC scores. This is reflected as an answer to the need for an English-proficient labor force within the market.

In summary, the study contributed to enhance the English proficiency performance of the students which suggests that well-structured online practice platforms can effectively support students in improving language proficiency test scores. This positive outcome highlights the potential benefits of using online tools in language education, especially for large-scale standardized tests like the TOEIC.

Table 5. Features of the research article of Boni Saputra & Rionaldi, 2023

Title	Improving Students' TOEIC Score through Cooperative Learning in "Sekolah TOEIC"
Purpose of the study	The research tried to improve students' TOEIC score through cooperative learning in "Sekolah TOEIC" program. The classroom action research was conducted in two cycles treatment
Method Used	"This research was conducted through Classroom Action Research (CAR) design as suitable method. The researcher used this method to solve the problems in his classroom."
Intervention Applied	"Cooperative learning is a broad category of instructional strategies in which pupils collaborate in small groups to learn academic material. Students are required to assist one another, engage in debate and discussion, evaluate one another's present knowledge, and fill in any gaps in one another's understanding in cooperative learning environments. The effectiveness of cooperative learning as a teaching technique has been demonstrated by both teachers and students. Through a variety of settings and delivery methods, students have numerous opportunities to interact with the subject they are studying. Cooperative learning techniques come in a variety and have been extensively researched. Examples of cooperative learning techniques include Jigsaw, Team Accelerated Instruction (TAI), Cooperative Integrated Reading and Composition (CIRC), Number Heads Together, Student Team Achievement Division (STAD), and Partnership claims that STAD is made up of five interwoven components: group tasks, tests, evaluations of individual development, and team rewards. "
Findings of the studies	Using Cooperative Learning using <i>STAD method</i> in the "Sekolah TOEIC" program improved the students' TOEIC score. The average score of TOEIC pretests was 442, After having cycle 1, the score was significantly improved up to 562.6. However there was a slight decline about 2 points in cycle 2, finally after whole treatments conducted the students' average final score was 583.4. The data indicated that the average score of students' TOEIC has improved above the target score for the requirement of IISMAVO.
Conclusion and recommendations	Cooperative learning is an effective strategy to improve students' TOEIC score. The average score of the students' TOEIC test after using method in cycle one and two were better than before applying STAD method. There was a significant improvement from cycle one up to cycle two. It meant that

STAD method could improve the students' TOEIC test.
Applying cooperative in
Sekolah TOEIC program is a smart solution to solve the
students' English proficiency problem.

The above study showed that Cooperative Learning in "Sekolah TOEIC" has significantly progress the test results which merely means that the intervention like cooperative learning has developed and improved the students English proficiency. This merely implies that Jigsaw, Team Accelerated Instruction (TAI), Cooperative Integrated Reading and Composition (CIRC), Number Heads Together, Student Team Achievement Division (STAD), and Partnership claims that STAD is made up of five interwoven components: group tasks, tests, evaluations of individual development, and team rewards are effective strategies in developing students' English proficiency based on TOEIC results of the students.

Thus, cooperative learning methods strongly influenced students' TOEIC performance at SMK Negeri 1 Wonogiri. Over two cycles, researchers observed notable improvements in students' TOEIC scores and engagement. Initially, the average score was 318.125, indicating elementary proficiency. Following the implementation of cooperative learning, students' scores rose to 416.5 after the first cycle and reached 437.25 by the end of the second cycle, placing them within the intermediate proficiency level. Additionally, student interest and participation increased, with more students showing high levels of engagement and activity in the TOEIC classes by the second cycle. The study concludes that cooperative learning not only enhances academic performance but also positively affects classroom dynamics and motivation. This approach suggests that cooperative learning could be an effective strategy to improve language proficiency, especially in preparing students for standardized tests like TOEIC.

Table 6. Features research article of Armita Novriana Rambe, S.Pd, et al., 2023

Title	"Improving Students' TOEIC Graduation by Using Self-Help Group (Shg) Method on Students Of Business Administration Department"
Purpose of the study	The purpose is "improving students' toEIC graduation by using self-help group (shg) method on students of business administration department of this study was to determine the effect of the self- help group (SHG) method on increasing student TOEIC graduation."
Method Used	The research method was Action Research pre-test and post-test design. The sampling technique used purposive sampling, with the number of samples were 44 respondents
Intervention Applied	Self-Help Group (Shg) Method
Findings of the studies	The study revealed that "the TOEIC score of nursing students after the intervention was higher compared with before the intervention ($t(44) = -2.947, p < 0.05$). It was showed that the SHG activity program was effective in increasing the TOEIC score of students, besides the number of students who passed the TOEIC increased from 1 person before the intervention became 4 students after the intervention".
Conclusion and recommendations	Therefore, this SHG activity program can be considered as a method to increase the number of student graduations, but this program is only carried out in a short period of one month. So, a longer period is needed to get maximum results.

The above study examined how Self-Help Groups (SHGs) can enhance TOEIC scores among students in a Business Administration program. The researchers implemented SHGs to foster peer collaboration and support, aiming to address challenges students face in meeting the TOEIC graduation requirement of a minimum score of 450. In this study, 44 students were organized into small SHG groups with a structured program lasting three months. Each group met regularly with facilitators, discussed TOEIC-specific topics, and practiced exam questions, especially focusing on areas like reading comprehension and structure, where students showed lower performance. The process included pre- and post-intervention TOEIC tests to measure improvements. The results revealed a statistically significant increase in TOEIC scores, with an average improvement from 400.18 to 411.02, demonstrating the effectiveness of the SHG approach in improving exam readiness. The study concludes that SHGs, through peer learning and mutual support, can effectively address skill gaps in language proficiency. The researchers recommend wider adoption of SHGs for consistent improvements in student performance on TOEIC exams. This method has proven beneficial not only in score enhancement but also in promoting collaborative learning skills among students, essential for their academic and professional futures.

The below study exposed that CLT, a method that emphasizes real-life communication skills effectively enhance TOEIC performance. CLT developed both English proficiency skills and test-specific skills. This would indicate that CLT not only prepares students for standardized tests but also boosts their practical communication abilities in English.

Table 7. Features research article of Pallapa Lertcharoenwanich, 2022

Title	“The Effect of Communicative Language Teaching in Test Preparation Course on TOEIC Score of EFL Business English Students”
Purpose of the study	The study aimed “1) to examine the effect of CLT on students’ TOEIC score and 2) to explore students’ attitude towards the use CLT in test preparation course.”
Method Used	The study employed the non-equivalent quasi-experimental (Pre-test and Post-test) control-group design in which the experimental group and the control group were purposively selected without randomization.
Intervention Applied	“TOEIC score: five from the highest and five from the lowest. The semi-structured interview, which was conducted in Thai, aimed to explore their attitudes towards the use of CLT method in test preparation course. “During the course, the experimental group was taught by CLT using the teaching materials from Cambridge Target Score by Talcott and Tullis (2007) which combined an active communicative approach and offered a variety of activities. The book is divided into 12 units in which listening, grammar, vocabulary, reading and discussion, TOEIC tips and communicative activities are also offered. Speaking activity such as a discussion and a negotiation which allow the students to practice English that they have learnt in each unit were also implemented. Moreover, the students had a chance to interact with others under the situation that they would face in the professional world. Even though TOEIC mainly aims to measure listening and reading skill, balanced attention to the four language skills was emphasized in CLT lesson. The communicative activities included, for example, applying TOEIC vocabulary in making a conversation, discussing and exchanging opinions about the reading passages, preparing for a job interview, participating in a discussion, making a product presentation, attending a meeting, buying and selling, negotiating a contract and taking part in a discussion.”
Findings of the studies	The findings “revealed that the official TOEIC score of the experimental group was significantly higher than the control group which indicated that CLT in test preparation course yielded a positive effect on improving students’ TOEIC studies.” “However, the attitudes of the students towards the implementation of CLT differed according to their gained score. This indicated that test anxiety plays a critical role in affecting test takers’ perception and performance. It is recommended that students should participate in a training program in order to know how to deal with factors causing test anxiety. The anxiety may be due to pressure and stress that the students have which could lead to a negative attitude towards assessment and instruction. Thus, as test anxiety unexpectedly played a role in this study”

Conclusion and recommendations

“The results of this study confirmed that CLT in test preparation class proved to be effective in improving students’ TOEIC score. By implementing this approach, students had a chance to practice the things that they learned in a context like the test and the real-life situation which resulted in score improvement. Thus, communicative test preparation activities integrated in this teaching method should be implemented in test preparation class. By doing so, teachers can prepare the students for the test and student can both achieve their target score and improve their English proficiency, further study should consider this and other influential factors in order to get a well-rounded perspective. Some limitations of this study were given here. As this study was conducted with only a limited number of participants without randomization and was done in one setting it was far from generalization. Also, other confounding variables should be concerned, e.g., test anxiety and students’ learning style. Students’ proficiency should also be examined in more details by using other form of assessment such as speaking and writing test. Besides, questionnaires should be implemented in the future studies to investigate overall attitude of the students. Moreover, other high stake standardized tests, e.g., TOEFL and IELTS are also worth exploring. All in all, this study can be used as an alternative guideline for those, teachers and educators, who teach the test preparation course and would like to integrate activities other than drilling and memorizing the test items in order to arouse students’ interest and participation.”

CLT focused on practical communication allowed students to engage in realistic language use, leading to stronger listening and reading comprehension. This method not only improved language skills but also boosted students’ test-taking confidence. CLT’s interactive, conversation-focused framework thus appeared to bridge the gap between academic English exercises and real-world communication challenges faced in the TOEIC.

Students exposed to CLT in their TOEIC preparation consistently outperformed those in traditional prep courses, indicating CLT’s positive effect on language proficiency. The research study suggest that skills gained through CLT (such as fluency, adaptability in conversation, and confidence) enhances TOEIC performance by fostering applicable language skills and increasing student confidence, offering practical benefits for test preparation.

Nisha (2024) study showed there was a statistically significant improvement in the speaking skills of EFL students after the CLT intervention. The students demonstrated an increase in fluency and complexity in their speaking performance. The findings revealed that the students had positive perceptions of CLT and found it effective in enhancing their speaking skills. The study provides valuable insights into the benefits of using CLT as a teaching method in EFL environments. This suggests the importance of incorporating communicative and interactive activities in language classrooms to promote language learning and student engagement.

Overall, the research suggests that practical, communicative instruction not only prepares students better for exams like the TOEIC but also equips them with various language skills for broader use.

The below study investigated whether an online text-to-speech (TTS) tool can enhance English listening skills, specifically for the TOEIC (Test of English for International Communication) exam. Given that the focus of TOEIC is on real-world English, using online TTS could be beneficial in providing EFL (English as a Foreign Language) students with additional automated synthesized voices (ASVs) such as listening practice, including exposure to diverse accents, intonations, fluency, conversational pacing and delivery.

The study revealed that engagement with the online TTS tool aid to improve comprehension, helping students adapt to the types of listening tasks featured on the TOEIC test compared to those students engaged on traditional audio materials spoken by native speakers. This finding emphasized the value of integrating modern language learning technology in developing English skill into test preparation.

This could also reshape listening skill development methods and make English language training more affordable and accessible for learners worldwide.

Table 8. *Features research article of Ayako NAKAI 2019*

Title	“Use and Effects of an Online Text-to-Speech Resource to Improve English Listening for the TOEIC Test”
Purpose of the study	“This study investigated the effects of an online text-to-speech resource for English classes students with low English proficiency to help them prepare for the TOEIC test.”
Method Used	The study utilized a pretest-posttest experimental design. “Forty-five undergraduate students were divided into an experimental group and a control group. During the 2015 spring semester, the new materials were used in the experimental group, while the students in the control group listened to traditional audio materials spoken by native speakers. Before and after the treatment, both groups took pretests and posttests based on the listening part of the TOEIC test.”
Intervention Applied	“Online text-to-speech resource called Global voice English, which includes automated synthesized voices (ASVs) with British and American accents.”
Findings of the studies	The pretest scores for both groups did not show a statistically significant difference ($F(1,43) = 0.002, n.s. p = .967$). An evaluation of the new teaching material was conducted using ANOVAs. The differences between the scores of the pretest and posttest showed statistical significance at the .05 level (see Figure 6) ($F(1,43) = 4.923, p < .05$). An interaction effect was found in the two groups. The results indicate that the members of the experimental group, who listened to ASVs in the present stage, could complete the listening comprehension posttest more accurately than the pretest. The results show that an interaction effect of the treatment was found between the two groups ($F(1,43) = 4.92, p < .05$), suggesting that the resource improved the students’ English listening.”
Conclusion and recommendations	The ASV was effective in improving the students’ listening skills. “However, the students’ preference for ASVs was not related to their score gain between the pretest and the posttest. By adopting ASVs, the anxiety of beginning-level students toward existing audio materials by NSs in the TOEIC test was relieved. Teachers do not always need to use audio CDs for low-level students from the beginning of their class. Teachers need to pay more attention to students’ English level and should try new materials to motivate students according to their learning contexts.”

This positive results on the use of online TTS which include automated synthesized voices (ASVs) aid for listening experience, letting learners control playback speed and repeat difficult sections, which may lead to more personalized and efficient language learning. This encourages curriculum developer and educators to integrate TTS resources into English learning programs to develop English proficiency of students.

This approach could bridge gaps in access to spoken English, especially in non-English-speaking environments, helping students to build the listening skills needed for both testing and real- world communication.

According to Maulina et al. (2022) The impact of technology-based materials enhances students’ language skills, promotes motivation and interest among students. Technology-based materials are more accessible for the teachers, promoting effective teaching and learning which involve mobile-based media, multimedia technology, radio news, podcast application, Patel (2015) with the topic “Significance of Technology Enhanced Language Learning(TELL) in Language Classes” showed the the use of technology help students to improve their language skills in a language environment which merely mean that the use of multimedia was effective in improving listening skills among students and develop English proficiency as well.

The study below investigated the impact of optimal cooperative learning (CL) grouping strategies on the English competencies of medical university students. Cooperative learning, a pedagogical approach where students work together in structured group settings, was analyzed to determine its effectiveness in enhancing English language skills such as reading, writing, speaking, and listening.

Table 9. Features research article of Hung-Chang Liao et al.,2019

Title	Optimal Cooperative Learning Grouping to Improve Medical University Students' English Competencies
Purpose of the study	"The study determine the effectiveness of an optimal cooperative learning grouping technique to facilitate medical university students' English learning process, considering their complementary competencies."
Method Used	"A quasi-experimental design was adopted to evaluate the feasibility of using the grouping technique. TOEIC (Test of English for International Communication) pretest and posttest were given to both the experimental group (32 students) and the control group (31 students) before and after a 16-week intervention." The teaching materials, assignment, and evaluation criteria were same to both experimental and control groups though they were situated in different grouping arrangements. The only difference was that the experimental group adopted the optimal cooperative learning grouping considering students' complementary competencies, while the control group could form their cooperative learning clusters. Both group students could stream all course video and audio content— anytime and anywhere, as they like"
Intervention Applied	Optimal cooperative learning grouping technique. The intervention was implemented for 16 weeks, with 2-hr class learning and no less than 2 hr of self-study per week.
Findings of the studies	"After the intervention, the posttest results showed that the experimental group had significantly higher mean scores than the control group. As for effect sizes, there were moderate effects on listening, reading, and writing competencies and a large effect on speaking competency. The results confirm that the proposed optimal cooperative learning grouping technique is effective for improving students' English learning. In other words, the grouping method considering students' complementary competencies is worth recommending for cooperative learning"
Conclusion and recommendations	"Medical-care students or professionals grounded in different departments, disciplines, or backgrounds may not be familiar with one another's training and responsibilities, which can cause difficulties. However, the proposed optimal cooperative learning, considering students' complementary competencies, may provide the opportunity for interdisciplinary cooperation, helping medical-care students and professionals with different backgrounds work together, understand each other, and develop better communication skills. Future studies may use this study as a basis for deriving optimal learning clusters to facilitate the learning process in different courses and programs. Future studies may also try to recruit larger samples to see whether the intervention will bring any difference between students with different genders, cultural, and economic backgrounds."

The study revealed that students participating in optimal cooperative learning groups showed significant improvements in their English language skills, particularly in speaking and writing. Cooperative learning fostered a supportive atmosphere that encouraged students to practice English without fear of judgment, boosting their confidence and fluency. The development of teamwork skills was also developed beyond language acquisition, students improved their collaborative and interpersonal skills, which are crucial in the medical field. In the study of (Johnson & Johnson, 1996; Kagan, 2010; Meng, 2010; Smith, Sheppard, Johnson, & Johnson, 2005) demonstrated that cooperative learning involves participant working together in small learning groups utilizing carefully planned principles increase their learning performances. Based on Johnson et al. (2006) in their study found out that cooperative learning grouping has improved students' "positive interdependence, individual accountability, face-toface communication, interpersonal social skills, and group processing". Lastly, Slavin (2000) demonstrated that cooperative learning can stimulate students to help one another and to maximize their abilities to learn. This implied that cooperative learning grouping is an effective method for improving medical university students' English competencies. Universities and other institutions should integrate cooperative learning strategies into their English curricula to enhance language competencies and foster collaborative skills. Mixed-ability groups foster an environment where all students benefit from peer interaction and support. In addition to enhancing language skills, cooperative learning helps students develop essential teamwork and communication skills, which are critical in medical and professional settings. Educational institutions should consider implementing structured cooperative learning strategies as part of their English language programs, providing the necessary training and support to both teachers and students to overcome challenges and maximize learning outcomes.

Table 10. *Features research article of Silawuth Chaengjaroen, 2024*

Title	“The Study of the English Preparation Course to Enhance Students’ English Proficiency for the Standardized Test “Your Score is High; my Score is Low. How to Make it Higher?”
Purpose of the study	The study aimed “(1).To investigate the effectiveness of the test preparation course in enhancing students’ English language proficiency; and,(2) To explore which specific skill that the students need to improve for the TOEIC test “.
Method Used	“The study used a quasi-experimental design(pretest and post-tests) to collect the language proficiency outputs of 57 higher education students in this course. Additionally, the study used their mini-test scores from each unit of the learning material to track their progress.”
Intervention Applied	English for Proficiency Preparation course. The teaching methods employed in the classroom included a combination of communicative language teaching and grammar-translation methods due to the students’ varied backgrounds in English. The course English for Proficiency Preparation was designed to reduce students’ reliance on costly language institutes by implementing direct test preparation methods using standard commercial materials focused on TOEIC areas: listening, reading, vocabulary, and grammar, supplemented with mini tests to reinforce lesson comprehension
Findings of the studies	The “findings revealed that the post-test mean score (48.96) was higher than the pre-test mean score (40.58), indicating that after participating in this course, the participants improved their English proficiency. The study findings indicated that students significantly improved their English language proficiency after completing the course. This improvement may be attributed to the effective integration of instructional approaches, which provided enhanced language learning opportunities for the students”.
Conclusion and recommendations	Hence the Proficiency Preparation Course was effective in improving the students’ TOEIC scores. The students significantly improved their English language proficiency after completing the course. This improvement may be attributed to the effective integration of these instructional approaches, which provided enhanced language learning opportunities for the students. Based on these findings, it is recommended that language teachers prioritize addressing students’ weaker skills by incorporating practice with old TOEIC tests or similar quality materials during classes. Additionally, administering pre- and post-tests each semester allows teachers to monitor students’ progress systematically. These assessments serve two primary purposes: first, they help students enhance their language skills and become familiar with the TOEIC test format and structure; second, they alleviate language anxiety and boost students’ confidence in their test-taking abilities, thereby increasing their willingness to actively participate in English courses focused on test preparation. Furthermore, this approach enables teachers to cater to diverse student needs, effectively managing challenges associated with large, mixed-ability classes. This study also advocates for the use of a commercial textbook covering the four key areas as a self-study tool, as it promotes language learning in various ways. Moreover, it is strongly recommended that teachers assign students to practice with multiple old TOEIC test series as part of direct test preparation instruction, as this method proves essential in helping students achieve better outcomes. The students’ actual TOEIC scores when they eventually take the test, was used to



assess the effectiveness of the pre- and post-tests used in this study. Secondly, future research could involve conducting a larger-scale study using the TOEIC test as both a pre- and post-test to evaluate students' real English proficiency and the course's overall effectiveness. Thirdly, administering the TOEIC test would provide insight into the genuine limitations faced by learners in this course, offering an opportunity to explore solutions to enhance their proficiency.

The study revealed that the combination of communicative language teaching and grammar-translation methods employed in English for Proficiency Preparation course in the classroom significantly improved the English proficiency of the students' based on the TOEIC results.

The study demonstrated that a well-designed English preparation courses are effective in enhancing students' English proficiency and standardized test performance. By addressing both language skills and strategic test approaches, the course enables students to achieve higher scores, particularly benefiting those who initially scored low. Moreover, the inclusion of personalized feedback and psychological support fosters confidence and reduces test anxiety, creating a well-rounded improvement framework. Educational institutions can leverage these findings to implement similar programs, supporting students in achieving their academic and professional goals.

This merely means that adapting appropriate teaching methods and strategies to meet the needs of each individual student develops progress, especially for students who begin with lower skill levels. To improve student achievement and competitiveness, colleges and universities should think about to include preparatory courses in their curricula, particularly for students getting ready for standardized tests. The course improved students' proficiency in key areas like grammar, vocabulary, and complex sentence structures, which were critical for higher test performance.

Table 11. Features research article of Na-Young Kim,2022

Title	“AI-integrated Mobile-assisted Language Learning: Is It an Effective Way of Preparing for the TOEIC Test in Classroom Environments”?
“Purpose of the study”	The purpose of the “study was to examine the impact of AI-integrated MALL on Korean students’ TOEIC preparation, by comparing with AI-integrated CALL.”
Method Used	The quasi-experimental method was used employing “Pretest-posttest design with control group to evaluate the effects of the use of AI-integrated mobile applications on Korean students’ TOEIC learning. To compare the pre-test and post-test scores, all the participants in the current study were required to take the TOEIC listening and reading tests as pre-tests at the beginning of the study. After the treatment, at the end of the study, all of them took the same tests as posttests.”
Intervention Applied	AI-integrated Mobile-assisted Language Learning
Findings of the studies	The “findings show that all groups significantly increased listening and reading test scores. Group comparison results show that the AI CALL group outperformed the control group for both tests. This group also outperformed the AI MALL group for the reading test. Based on this, pedagogical implications are invaluable.”
Conclusion and recommendations	The study concluded that “L2 students can increase their TOEIC scores by engaging in AI-integrated TOEIC learning programs. They can use either computers or mobile phones to increase their TOEIC listening and reading test scores. Using computers seems more beneficial for increasing reading skills. Therefore, teachers should carefully consider using AI-integrated programs through computers rather than mobile phones in L2 reading class.”

In particular, the current study suggests that the language teachers should explore the integration of AI in classrooms. However, the teachers need to be concerned about excessive reliance on technology use. Furthermore, they should consider

barriers preventing an even distribution in technological resources. Moreover, the teachers should understand that it is still unclear that technology offers the same pedagogical advantages in language learning as the traditional classroom instruction does (Salaberry, 2001). Particularly, the teachers should be aware of the fact that newly developed technology is not always superior to the previous ones. They should be careful when investing time and money in new and unproven technologies. It is important to make sure that the teachers are fully prepared and empowered to leverage AI.

Assuming these elements are addressed, the possibilities of AI-powered learning are infinite.

This study explored the effectiveness of Mobile-Assisted Language Learning (MALL) as a method for preparing students for the TOEIC test within classroom settings. It investigated how integrating mobile devices, apps, and digital learning tools into traditional teaching could impact students' language proficiency, test performance, and overall engagement.

The study revealed that students who used mobile-assisted learning tools demonstrated a significant improvement in their TOEIC scores, particularly in listening and reading sections. The interactive and accessible nature of mobile learning increased students' motivation. They engaged more frequently with learning materials outside of the classroom. MALL encouraged students to take ownership of their learning, fostering greater independence and allowing them to practice at their own pace. To implement MALL successfully, both teachers and students need to be proficient in using mobile technologies. Institutions should provide training and resources to address this need. While mobile tools are beneficial, it's essential to strike a balance to prevent over-reliance on technology and mitigate distractions.

According to Riasati et al. (2012), technology should be employed in language class to enhance learning and teaching. Language teachers should consider using technology to be instrumental in language instruction. In addition Maskey (2020), also revealed that the used of technology it should be carefully considered in teaching English language. Therefore, integrated Mobile-Assisted Language Learning (MALL) is an effective method for preparing students for the TOEIC test in classroom environments. It provides a flexible and dynamic supplement to traditional instruction. However, its success depends on proper implementation, including carefully designed mobile content and sufficient training for both students and teachers. Ultimately, MALL offers a promising approach to improving language proficiency and test readiness, supporting the broader goal of integrating technology into modern education.

Table 12. *Features of the research article of Asmaa AlSaqqaf et al., (2424)*

Title	"The Effectiveness of the Incentive Autonomous Learning Strategies (IALS) Module to Improve Chinese Non-English Major Undergraduates' EFL Speaking Proficiency
Purpose of the study	"The study attempted to bridge this gap by incorporating autonomous learning with incentive strategies to enhance Chinese non-English major undergraduates' EFL oral performance"
Methods used	"The study adopted a quasi-experimental design to carry out a 14-week intervention. The participants were purposively sampled with the experimental group undergoing the IALS speaking intervention, while the control group received conventional in-situ teaching approaches. A pretest and post-test were conducted on both groups to examine any changes in their speaking proficiency before and after the intervention."
Intervention applied	Incentive Autonomous Learning Strategies (IALS)
Findings of the studies	"Results obtained from the paired-sample t-test demonstrate a statistically significant increase in the experimental group's EFL oral performance, rising from a mean score of 50.52 before the intervention to 71.60 after the intervention. The control group's mean score also improved from a pretest mean score of 51.08 to a mean score of 54.98 in the posttest. These results suggest that the IALS module has proven to be efficacious in improving Chinese non-English major undergraduates' EFL speaking proficiency. It is hoped that the results of this study might

Conclusion and recommendations

proficiency. It is hoped that the results of this study might provide insights into the effective strategies to enhance English speaking skills among Chinese non-English major undergraduates in EFL contexts.”

This study investigated the effectiveness of the IALS module in improving the speaking performance of Chinese EFL non-English major undergraduates at a public university in China. The findings reveal a significant enhancement in the speaking performance of the experimental group after the IALS teaching treatment, compared to the control group's modest improvement following regular speaking instruction. As a result, this research provides valuable insights into the potential impact of the IALS module for both EFL educators and learners. The hope is that the results of this research will draw attention to effective instructional approaches and strategies for enhancing speaking skills among Chinese EFL non-English major undergraduates.

This study addressed the research gap in speaking performance through an empirical research method by the utilizing IALS teaching speaking module among Chinese EFL non-English major undergraduates in China. It aims to draw attention to the role of effective speaking intervention in addressing actual speaking problems and difficulties among this population (Li, 2020; AlSaqqaf et al., 2023) and propose a long-term strategy for innovating EFL instruction and learning (Nhi & AlSaqqaf, 2023). The current research has developed the IALS teaching speaking module as a remedial measure to enhance the EFL speaking proficiency of the Chinese non-English undergraduates. Understanding the importance of speaking competence in foreign language teaching and learning is crucial for both EFL teachers and learners (Zhang, 2019). It is also essential to recognize the necessity of adopting effective strategies to enhance speaking competence, as effective methods can pave the way for positive learning outcomes (Li, 2020; Song, 2020). Despite the perceived complexity of acquiring spoken English for EFL learners, providing them with appropriate guidance, encouragement, and support, along with stimulating their learning enthusiasm using effective methods, can lead to positive and confident engagement in EFL speaking learning (Denovan, 2021). Following the measurement of the effectiveness of the IALS module in the current research, it is hoped that other EFL instructors will consider it as a reference for further speaking teaching and, based on it, propose more effective measures to enhance the teaching effectiveness of English speaking

Effect Sizes of the Experimental Studies

An effect size is a quantitative measure of the strength or magnitude of a relationship, difference, or impact observed in a study. It helps to convey the practical significance of findings., independent of sample size, making it easier to compare results across studies. Table 14 presents the effect sizes of the differences Between pretest and posttest results.

Table 13. *Effect Sizes of the Findings of the Experimental Studies*

Study Number	Intervention	t-value	df	Effect size	Description
1	Instructional Mobile applications	7.38	147	1.22	large
2	Online Teaching Intervention	9.70	98	2.77	large
3	Cooperative Learning (STAD)	3.67	29	1.36	large
4	Self-Help Group Method	2.95	44	0.89	large
5	Communicative Language Teaching with grammar translation	7.25	56	1.94	Large
6	Online text-to-Speak Resources	4.92	21	2.14	Large
7	Optimal Cooperative Learning	2.72*	51	0.62	Medium
8	Proficiency Preparation Course	4.26	56	0.79	Medium
9	AI Integrated Mobile Assisted Language Learning	L-4.33 R-14.503	483	L-0.31 R-0.57	Small Medium
10	Incentive Autonomous Learning Strategy	35.79	41	11.10	large

*Small effect: 0.2 Medium effect: 0.5 Large effect: 0.8 or above
Average of the four macro skills listening, reading, speaking, and writing*

The table show that the use of incentive autonomous strategy has the highest effect size($d=11.10$) followed by Optimal Cooperative Learning ($d=2.72$) as interventions to enhance college students English proficiency. The effect size for the Incentive Autonomous Strategy ($d = 11.10$) is exceptionally large, suggesting a profound impact on English proficiency in college students. An effect size of this magnitude is rare and may indicate an extraordinarily effective intervention, or it could reflect unique conditions or a highly controlled context that maximized the impact of this strategy. Other most effective interventions include Online Teaching Intervention ($d=2.77$), Online Text-to-Speak Resources ($d=2.14$), and Communicative Language Teaching $d=(1.94)$. These leverage modern

technology and blended teaching methods.

In comparison, the AI-Integrated Mobile Assisted Language Learning (AI-MALL) intervention ($d = 0.55$) shows a moderate effect on enhancing English proficiency. A d value of 0.55 suggests that AI-MALL has a noticeable, beneficial effect but is not as powerful as the Incentive Autonomous Strategy. This moderate effect aligns with many educational interventions, indicating that AI-MALL offers valuable, consistent improvements in proficiency for students. Traditional methods like Cooperative Learning and Self-Help Group Methods are effective but slightly less impactful compared to tech-driven approaches. AI Integrated Learning shows promising medium effects in reading but requires improvement for listening skills

Given the extremely high effect size of the Incentive Autonomous Strategy, educators and curriculum designers might consider exploring and expanding this approach. However, further investigation may be needed to ensure that such a large effect size is replicable and not context-specific. AI-MALL's moderate effect suggests it could be a versatile, scalable intervention. With AI technologies becoming increasingly accessible, mobile-assisted learning could serve as a supplementary tool that is both adaptive and engaging for students. Meanwhile, AI-MALL could also be adopted as an effective, accessible alternative, especially in institutions with limited resources for face-to-face or incentive-based learning approaches.

The high effect sizes of interventions such as Online Teaching Interventions (2.77) and Online Text-to-Speak Resources (2.14) highlight the transformative role of technology in language education. Institutions should prioritize integrating digital tools, such as mobile applications and AI-driven resources, into the curriculum. These tools are especially effective for improving speaking, listening, and grammar skills, making them indispensable in modern language teaching.

The combination of Communicative Language Teaching with Grammar Translation (1.94) suggests that a balanced approach, combining modern and traditional teaching methods, caters effectively to diverse learning needs. Language teachers should adopt this hybrid approach to improve student engagement and outcomes. Interventions like Cooperative Learning (STAD) (1.36) and Optimal Cooperative Learning (0.62) reinforce the value of peer interaction. Language learning programs should incorporate group-based activities to encourage communication, teamwork, and mutual learning.

In summary, these findings suggest that while both interventions enhance English proficiency, the Incentive Autonomous Strategy may have particularly profound effects under certain conditions, with AI-MALL providing a consistent, moderate improvement. The implications point toward further research and thoughtful integration of these methods to optimize resources and support diverse student needs effectively.

Conclusions

The interventions implemented to enhance the English proficiency or the TOEIC scores of the college students were effective as the scores in the posttests were significantly higher than the pretests. But the only two interventions have higher effect sizes. Hence, Thus teaching students to be independent learners and giving incentives for their work motivates them to work hard and learn more. On the other hand, since AI is something new, it has also excited the students to learn the language using AI processes.

Based on the results of the study, the following are recommended:

Given the high effectiveness of the Incentive Autonomous Strategy, language programs should consider integrating incentives and self-directed learning approaches to motivate students. This could involve personalized achievement milestones, rewards for proficiency improvements, or project-based learning tasks that encourage autonomy in language use.

With a moderate effect size, AI-Integrated Mobile Assisted Language Learning (AI-MALL) proves valuable as a supplemental tool. Institutions should consider incorporating AI-MALL into their English curriculum to provide flexible, on-the-go language practice, especially beneficial for students needing additional support outside of class.

Education policymakers could advocate for a blended model that combines traditional language learning with AI-integrated mobile tools and incentive-based strategies. Such a policy would support diverse, accessible learning pathways and recognize the value of autonomous and technology-driven approaches in language education.

Based on the profound effect size of the Incentive Autonomous Strategy, education authorities and administrators should consider prioritizing funding for incentive-based language interventions. Additionally, resources for AI tools could be allocated in a way that allows institutions to adopt and experiment with these digital learning aids as part of their English proficiency programs.

The unusually high effect size of the Incentive Autonomous Strategy highlights the need for further investigation into its mechanisms and application across various student demographics and settings. Researchers should focus on exploring whether specific incentives, types of autonomy, or combinations with other interventions (e.g., AI tools) are responsible for such significant improvements in language proficiency.

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