



Kuram ve Uygulamada Eğitim Yönetimi
Educational Administration: Theory and Practice
2024, Cilt 30, Sayı 1, ss: 1-19
2024, Volume 30, Issue 1, pp: 1-19
www.kuey.net



EFL Teachers' Use of ICT and Learner-centered Teaching Strategies to Improve English Listening Instruction - A Bibliometric Analysis

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<p>Article History</p> <p>Article Submission 15 July 2023</p> <p>Revised Submission 24 August 2023</p> <p>Article Accepted 26 September 2023</p>	<p style="text-align: center;">Abstract</p> <p>The ability to listen attentively is of utmost importance for individuals who are learning a language, as it serves as the bedrock for effective communication and mastery of the language. Nonetheless, conventional methods employed in teaching listening tend to concentrate on passive listening exercises, resulting in limited engagement and insufficient development of this skill. To overcome these constraints, the integration of information and communication technology (ICT) tools alongside learner-centric teaching strategies has proven to be highly beneficial. This review will look at the current level of research and innovations in the use of ICT and learner-centered teaching techniques to improve EFL teachers' listening instruction from 2012 to 2023. On March 15th, 2023, 232 papers were collected from the Scopus database and a bibliometric analysis was performed to examine the publishing trend and geographic distribution, the contribution and collaboration of various nations, the most influential authors and publications, the most frequently used author keywords, and under-explored issues. From 2012 to 2023, the data revealed a rising trend in overall publication production, with 51 countries contributing to the research on EFL instructors' use of ICT and learner-centered teaching practices to improve listening instruction. The United States, Australia, and Iran were the top three contributors among these countries. The most commonly used author keywords were EFL, ICT, learner-centered teaching strategies, listening instruction, and teaching methods, indicating that these were the major themes of study in this area over the preceding decade.</p> <p>Keywords: EFL Teachers; Use of ICT; Learner-centered Teaching Strategies; Listening Instruction; Systematic Literature Review</p>
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Introduction

The integration of Information and Communication Technology (ICT) and learner-centered teaching strategies to enhance listening instruction is imperative for several compelling reasons. Conventional approaches to listening instruction often fall short in terms of engagement and motivation, relying heavily on passive activities (Martínez-Gautier, Garrido-Yserte, & Gallo-Rivera, 2021). However, by leveraging ICT tools and resources like online listening materials and interactive exercises, educators can design dynamic and captivating listening activities that grab students' attention and sustain their interest throughout the learning process. Furthermore, learner-centered strategies empower students to play an active role in their learning journey, rendering it more meaningful and personally significant (Toding, Mädamürk, Venesaar, & Malleus, 2023). This active participation fosters a sense of ownership and encourages students to take responsibility for their language development. Studying a foreign language has long been acknowledged as an essential component of international communication, as it promotes the free flow of ideas and heightens awareness of other cultures (Zare, Karimpour, & Aqajani Delavar, 2022). Listening is a key part of communication, which is why it is one of the most important abilities to acquire when learning a language. It gives students the ability to understand spoken language in a variety of settings, such as in conversations, lectures, and the media. Unfortunately, hearing teaching is frequently overlooked in English for Speakers of Other Languages (ESOL) lessons, which results in a lack of adequate listening ability among students of the language (Tai & Khabbazzashi, 2019).

In China, the education system is structured in a centralized manner and gives significant importance to academic success and standardized assessments. So basically, there are three stages of education: primary education for grades 1 to 6, secondary education for grades 7 to 12, and higher education (Wang, Xiong, & Zhao, 2020). The system is recognized for being highly competitive, with a focus on subjects such as mathematics, science, and the Chinese language. As a language, English is widely used for communication, business, and academic purposes on a global scale. A lot of people all over the world speak it and it's used as a shared language for global communication. English is an important language that has a significant impact on different areas of life such as learning, working, exploring new places, and sharing cultural experiences. Being proficient in English can provide you with the chance to communicate internationally, access worldwide resources, and take part in the global job market (C. Li, Ma, & Xi, 2021). The English language has a significant influence on people, communities, and financial systems, resulting in profound impacts. It helps people understand different cultures better, makes them more employable, and encourages progress in education and technology. Being proficient in English allows people to explore a vast array of information and resources, which can help them develop personally and professionally (Brock, 2014). Teachers are very important in the field of English language education. Their role involves helping individuals learn a language, offering assistance and encouragement, and establishing an environment that promotes learning. Students can enhance their language abilities, cultural knowledge, and self-assurance in utilizing English with the guidance of teachers (Zhou & Thompson, 2023). Active student engagement can be effectively promoted through teaching strategies that focus on the learner. Collaborative learning, project-based learning, differentiated instruction, and the integration of technology are some of the strategies used to develop interactive and personalized learning experiences (Fung & Lo, 2023). In language education, the use of different educational technologies and tools can improve the way students listen and receive instruction. Some examples of resources that can be used for language learning are online listening materials, interactive multimedia platforms, virtual communication tools, language learning apps, and digital resources that are created to enhance instructional delivery (Andersson, Sanders, & Coch, 2023). Analyzing the impact and influence of research publications is greatly important, and bibliometric analysis is a useful tool for doing so.

While significant progress has been made in researching the use of ICT and learner-centered teaching strategies by EFL teachers to enhance listening instruction, it is essential to acknowledge the persistent limitations and gaps in the existing body of knowledge (Naghdipour, 2022). Many studies tend to overlook the crucial need for pedagogical training and support for teachers in effectively implementing these approaches. Further research should delve into identifying and exploring effective training methods, resource selection criteria, and strategies for managing the

integration of technology in the classroom (B. Li, 2022). Moreover, limited attention has been given to the practical challenges that teachers may encounter when adopting these approaches, such as restricted access to technology or time constraints within the curriculum. Understanding and addressing these obstacles is vital for providing appropriate support and ensuring the successful implementation of ICT and learner-centered strategies. Additionally, contextual factors, including cultural backgrounds and institutional policies, have often been overlooked despite their potential influence on the effectiveness of these approaches. Future studies should delve into how these contextual factors interact with ICT and learner-centered strategies, in order to enhance their applicability and effectiveness in diverse educational settings (Jeong, 2017).

In order to overcome this problem, educators of English as a foreign language (EFL) have begun to integrate information and communication technology (ICT) into their classroom activities. The teaching of listening skills in EFL classrooms has been revolutionized as a result of the proliferation of ICT tools such as podcasts, videos, and online resources (Naghdi-pour, 2022). They have developed a new learning platform and provide students with access to genuine and varied linguistic materials, which enables students to improve their listening abilities in a variety of settings. Also, the use of information and communications technology has resulted in a change in teaching practices that are learner-centered, which places the learner at the center of the learning process and promotes autonomy as well as self-directed learning (Belda-Medina, 2022). Both the acquisition of skills that students need in order to prepare for university and a profession as well as the incorporation of digital instructional tactics by teachers are impacted by the changes that are brought about by technology in education (Aryadoust, 2020). Technology and innovation are ubiquitous in both the lives of educators and the lives of their students, and both groups view these developments as having pedagogical benefits for education (Yilmaz & Erden, 2022). Because of the prevalence of information and communication technologies, the role that educational technology plays in the classroom is of considerable significance. In addition to being an essential component of higher education, educational technology plays a crucial function in determining the level of involvement that students demonstrate in their studies (Melzi, Schick, & Wuest, 2023). Educational applications are a part of digital educational technology, and this technology serves three purposes: 1) The use of technology as a tutor (computers provide instructions and direct users), 2) The use of technology as a teaching instrument, and 3) The use of technology as a learning tool (Peng & Chuang, 2020).

Despite the increasing use of ICT and learner-centered teaching practices to improve listening instruction, little effort has been made to compile statistics on the global scientific output of research in this field. There has not yet been a complete bibliometric analysis of EFL teachers' use of ICT and learner-centered teaching practices to improve listening instruction. On a specific date, a primary search query with the keywords "EFL", "ICT", "learner-centered teaching strategies", "listening instruction", and "bibliometric analysis" was run to gain insight into the extent to which bibliometric analysis has been carried out in this study area. The first search query produced only three hits, all of which were published in 2021. This shows that bibliometric research on EFL teachers' use of ICT and learner-centered teaching practices to improve listening instruction is insufficient. Closer inspection revealed that Love and Asempapa (2022) was a bibliometric analysis of teaching computer programming in higher education, which included categorization of existing methodologies but did not specifically focus on EFL Teachers, Use of ICT and learner-centered teaching strategies to improve listening instruction. Champion (2014) and Parul, Sarin, Sheoran, and Phanden (2021) presented a framework for academic administration to promote student-centered education rather than a bibliometric study. As a result, it suggests that a full bibliometric examination of EFL teachers' use of ICT and learner-centered teaching practices to improve listening instruction is still required. There appears to be a dearth of extensive bibliometric assessments of EFL (English as a foreign language) instructors' use of ICT (information and communication technology) and learner-centered teaching practices to improve listening instruction at the moment. Just a few studies have explored this topic to our knowledge, and a systematic evaluation of the literature is required to provide a thorough overview of the study environment.

In one study, Sabiri (2020) looked at 64 papers on the use of information and communication technology (ICT) in English as a foreign language (EFL) listening teaching from a variety of online databases, such as Web of Science, Scopus, and ERIC. The study shed light on the research

tendencies, the characteristics of the studies, and the primary findings about the utilization of ICT in listening teaching. The evaluation, on the other hand, did not provide an examination of the application of learner-centered instructional practices. Therefore, additional bibliometric studies are required to fill the gaps in the existing body of research and shed light on the extent to which research has been conducted on the use of information and communication technology (ICT) and learner-centered teaching strategies in listening instruction by EFL teachers. The most productive authors, the countries that give the most to the research, the research methodology that is employed, and the research gaps that need to be addressed in future studies might all be gleaned from such analysis, which could provide significant insights.

This paper aims to contribute to the existing literature gap by investigating the utilization of Information and Communication Technologies (ICT) and learner-centered teaching strategies in English as a Foreign Language (EFL) teachers' instruction to enhance the listening skills of their students. To achieve this objective, the study will address the following research questions:

RQ 1. What are the publication trend, geographic distribution, and country contributions of studies investigating EFL teachers' use of ICT and learner-centered teaching strategies to improve listening instruction?

RQ 2. Who are the most influential authors and articles on EFL teachers' use of ICT and learner-centered teaching strategies to improve listening instruction?

RQ 3. What are the most commonly used keywords and under-explored themes in studies investigating EFL teachers' use of ICT and learner-centered teaching strategies to improve listening instruction?

This paper will present a systematic review of the available literature on EFL teachers' use of ICT and learner-centered teaching strategies to improve listening instruction, followed by a detailed methodology, presentation of results, and discussion of findings.

Literature Review

The objective of this literature review is to investigate the most recent findings from research on how English as a Foreign Language (EFL) classrooms can benefit from the integration of information and communication technology (ICT) and learner-centered teaching practices (Naghdi-pour, 2022). The purpose of this study is to investigate the impact that incorporating learner-centered teaching strategies and activities related to information and communication technology (ICT) can have on the listening skills of intermediate-level English students, as well as the attitudes that EFL teachers and students have toward ICT. In addition, this study will explore the present curriculum for the use of information and communications technology (ICT) in English as a foreign language (EFL) education as well as the potential implications of prior research for EFL instruction (Jeon et al., 2022). The position taken on the use of information and communication technology (ICT) in foreign language classrooms by the Common European Framework of Reference for Languages (CEFR) will also be taken into consideration.

ICT in education

In light of the fact that the overarching meaning of the term is quite vague and cannot be applied in its whole to the educational setting, a narrower definition is presented here in order to keep the focus of this investigation on the topic at hand. It is defined as "the mode of education that makes use of information and communications technology to support, enhance, and optimize the transmission of information" (Chatti & Majeed, 2022). More specifically, the term "information and communications technology" (ICT) refers to technologies that are based on the internet, such as websites, digital libraries, online course materials, social media, and email; technologies that are based on computers, such as tablets, smartphones, laptops, and desktops; and software, such as websites, social platforms, apps, and programs. The United Nations Educational, Scientific, and Cultural Organization believes that it has the potential to enhance, advance, and completely revolutionize educational practices (UNESCO, 2020). It has also been demonstrated that students' levels of motivation to learn and perform improve when they use ICT (Zhao et al., 2022)

ICT has been utilized in ELF in a number of different ways thus far. (Li et al., 2022) discusses a variety of applications that can be found for technological advancements in the educational setting. Because of how convenient they are to use, smartphones have become one of the most widely used electronic devices. They might be used in a variety of communicative activities, such as reading text by listening to an audio recording of the text, and they could also be used to facilitate reading text by using the software that the device provides. They provide access to a variety of online resources that are designed to improve students' linguistic abilities, and they make this access available to the students. The concept of "penpals" is being phased out in favor of "mousepals," and the use of pen and paper is being phased out in favor of a Word document. The utilization of feedback is another potential application of ICT. It is possible to do so by leaving comments on students' work that is posted online. This makes the process of editing less disheartening for the student (by avoiding scenarios such as tossing away pages of written material) and simpler for the instructor as well as the student. On the other side, (Zaman et al., 2020) also emphasized the disadvantages of using information and communication technology (ICT) during class. The primary disadvantage was the lack of data protection, which meant that some of the items students produced could be disseminated without their permission. Another disadvantage that was brought up was the likelihood that the pupil would become distracted.

EFL teachers' attitudes towards using ICT

For the past few years, instruction of English to speakers of other languages has increasingly incorporated the use of various forms of information and communication technology, abbreviated as ICT. The incorporation of information and communication technology into teaching English as a foreign language has the potential to improve learning results, provide access to a wide variety of learning resources, and encourage contact and collaboration among students (Hasan et al., 2022). Yet, the attitudes and views of EFL teachers toward the application of technology are a critical factor in determining the success of the integration of ICT in EFL instruction. According to the findings of research, EFL teachers' perspectives on using ICT into their lessons can be shaped by a number of different elements. The amount of previous experience and training they have had in making use of technology is one of the most important aspects to consider. In general, teachers who have had previous experience with ICT and who have received sufficient training and support are more optimistic about the employment of technology in their classrooms. Also, the ideas that EFL teachers have about the role that technology plays in education, as well as their perceptions of the benefits and obstacles of integrating ICT into their teaching, can all have an effect on how they feel about utilizing technology in their classrooms. It is more likely that educators will have a favorable attitude toward the use of technology if they believe that information and communication technologies (ICT) may improve learning outcomes and encourage the involvement and participation of students (Zhao et al., 2022).

On the other hand, EFL teachers' concerns about the difficulties and restrictions of using technology, such as technical issues, a lack of training and support, and concerns about the quality and relevance of ICT tools and resources, can lead to negative attitudes towards the use of technology in their teaching (de Brito Lima et al., 2022; Naghdipour, 2022). These attitudes can be detrimental to the success of their students. A pedagogical change toward an approach that is more student-centered and participatory is required for the successful integration of ICT in English as a Foreign Language (EFL) instruction. This transformation may present a challenge to the ideas and practices of certain EFL teachers, and in order for them to adjust to the new pedagogical approach, they may require adequate training and support.

Learner-Centered Teaching Strategies

Learner-centered teaching, often known as LCT, is a method of instruction that places the primary emphasis on catering to the specific requirements and passions of each individual student (Blum-Smith et al., 2021). It requires the teacher to transition from being the "sage on the stage" to the "guide on the side," while students take on a more active role in the learning process. According to the findings of several studies, the outcomes of language acquisition can be improved by utilizing LCT methodologies. According to the findings of a study that was carried out by (Oyelana et al., 2022), students who were instructed utilizing LCT tactics showed significantly higher levels of motivation, engagement, and achievement when studying a foreign language in the classroom. In a similar vein, Broemmel et al., (2021) discovered that tactics using LCT, such as

project-based learning and collaborative learning, were successful in enhancing learners' English language ability. There are many different LCT tactics that can be implemented in language classrooms, such as student autonomy, project-based learning, task-based learning, and collaborative learning. Learners participate in project-based learning by working on an extended, interdisciplinary project that incorporates a number of different topic areas (Almulla, 2020). Learners engage in task-based learning by performing meaningful tasks that call on them to utilize language in a setting that is relevant to their everyday lives. Learners work together in groups to complete a task or find a solution to a problem as part of the process of collaborative learning (Deng et al., 2022). Learners who exercise learner autonomy are those who take responsibility for their own education, define their own learning objectives, and pursue those objectives on their own.

Methodology

To determine the characteristics of the knowledge base, bibliometric analysis examines the bibliographic information connected to published research. It has been used in education and is regarded as an accurate instrument to gauge how much papers contribute to academic development (Wigglesworth & Bond, 2022). Assessing trends and impacts, including publishing nations, research topics, journals, and author keywords, is significant for understanding the state of research and its trends and for providing crucial information on scientific successes (Janusik, 2010).

Identification of Materials

Web of Science and Scopus are two potential and typical sources for searching and retrieving bibliometric analysis data. The data utilized in this bibliometric analysis were based on the Scopus database. Compared to the Web of Science, it provides a more thorough coverage of pertinent peer-reviewed documents on the topic of education (Castro, 2019). Compared to Web of Science, Scopus has a wider selection of journals, and its citation analysis is completed more quickly (Lu et al., 2021; Ramy, Floody, Ragab, & Arisha, 2018). The Scopus database, the largest single abstract and indexing database ever, indexes over 14,000 journal articles and social science titles from 4000 publishers (W. Ahmad, A. Ahmad, Ostrowski, Aslam, & Joyklad, 2021). It was therefore considered to be the most suitable database to use for this study's document review.

The following Boolean phrase was used to pull data from the Scopus database: To find all pertinent publications as of the cutoff date of July 14, 2021, use TITLE-ABS-KEY(("EFL teachers" OR ("English as a Foreign Language teachers" OR ("TEFL teachers" OR ("TESOL teachers") OR ("ELT teachers") AND ("ICT" AND ("learner-centered teaching strategies") AND ("listening instruction"))). The "full year" timespan was chosen to enable thorough coverage of the body of literature. Only English-language periodicals were comprised, resulting in a corpus of 456 documents that encompassed a variety of document forms. Articles (312, or 68.42%), conference papers (91, or 19.96%), book chapters (28, or 6.14%), reviews (10, or 2.19%), conference reviews (8, or 1.75%), notes (3, or 0.66%), books (two, or 0.44%), errata (1, or 0.22%), and undefined (1, or 0.22%) were among the document categories. To guarantee a thorough search and correct analysis of the pertinent literature, all document types were included. Also, publications from many nations and areas were included in the analysis, though the VOSviewer tool took each one into account separately for more accurate mapping and visualization.

These 670 files' bibliographic information was obtained from Scopus and quantitatively combined by Excel and the VOSviewer program, a program for creating a visual document measuring network (Özenç-Ira, 2023). Paper kinds, publication years, nations, titles, author keywords, abstracts, author affiliations, and other forms of citation data have all been extracted from the Scopus database and exported into comma-separated values (.csv). Finally, for data analysis and data visualization, the Scopus data were transferred to the VOSviewer tool (Tang, Xu, Sun, Wan, & Zhang, 2022). To get a thorough understanding of a knowledge base, bibliographic research relies on descriptive statistics, citation, and co-citation analysis (Shiau, Wang, & Zheng, 2023). Via an analysis of the author's co-citations, it can also shed light on the structure and dynamics of the research area.

In order to better understand trends, geographic distribution, and contributions of EFL teachers employing ICT and learner-centered teaching practices to improve listening instruction, this study used data analysis tools such as Microsoft Excel and VOSviewer. The most significant authors and papers on the subject as well as publishing trends were depicted using graphs and charts. The VOSviewer application was used to map the intellectual structure of the EFL teacher's knowledge base, examine country collaboration, and identify the most important authors. In order to verify correctness, a thesaurus file was made and used to eliminate words like "ICT" and "Information and Communication Technologies" that were used twice. This analysis can help practitioners and researchers in their efforts to enhance listening teaching through the use of technology and learner-centered approaches by offering insightful information on the most recent developments in pedagogy. The results can also be used to assess the effectiveness of EFL teachers' initiatives to use cutting-edge instructional strategies in their classes.

Results

Publication Status

To address the research question "What is the publication trend, geographic distribution, country contribution, and collaboration of EFL teachers' use of ICT and learner-centered teaching strategies to improve listening instruction?", the researchers conducted a comprehensive analysis of publications in this area. The publication trend was determined by analyzing the total number of publications related to EFL teachers' use of ICT and learner-centered teaching strategies to improve listening instruction over the years. The researchers also explored the geographic distribution of these publications and the country's contributions by examining the number of publications and citations by country. The collaboration among countries was visualized using VOSviewer to examine the co-authorship network (Wiers & Chabaud, 2023). Overall, this analysis provides a detailed understanding of the current state of research on EFL teachers' use of ICT and learner-centered teaching strategies to improve listening instruction, as well as the collaborative efforts between countries in this area.

Publication Trend

The number of total publications on EFL Teacher, the Use of ICT, and learner-centered teaching strategies to improve listening instruction in higher education has been steadily increasing since its inception in 2012. According to the provided data, there were 2 publications in 2012 and 3 publications in 2013. The publication volume demonstrated significant growth from 2014, with 8 publications, and continued to grow with 14 publications in 2015 and 18 publications in 2016. The number of publications in 2017 decreased slightly to 9 but increased again to 19 in 2018 and 21 in 2019. In 2020, there were 22 publications on EFL Teacher, the Use of ICT and learner-centered teaching strategies to improve listening instruction in higher education. As of July 14th, 2021, there were 34 publications, indicating continued growth in research and publications. The trend in research and publications on EFL Teacher's, Use of ICT and learner-centered teaching strategies to improve listening instruction in higher education is expected to continue based on the data provided, with 55 publications expected in 2022 and 28 publications in 2023. This trend reflects the increasing importance and relevance of EFL Teacher, Use of ICT and learner-centered teaching strategies to improve listening instruction in modern education (Figure 1).

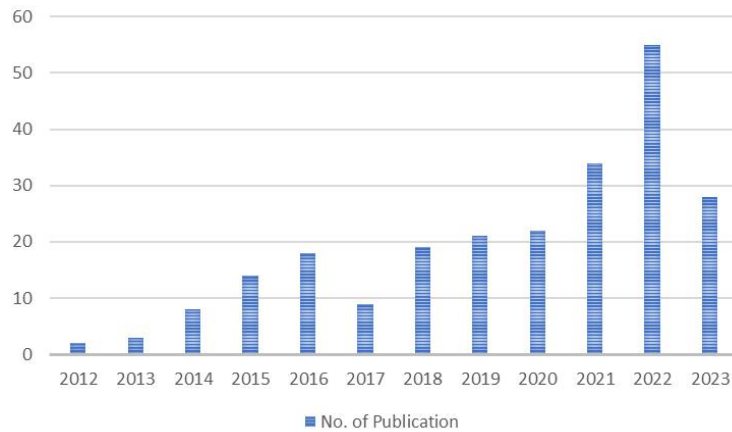


Figure 1. Publication trend

Geographical Distribution

The table includes data sorted by country on the research output and influence of works on learner-centered teaching methods and ICT (Information and Communication Technologies) in EFL (English as a Foreign Language). Figure 2 indicates that, with 49 publications, the United States is the most productive nation in this sector, followed by China with 31 publications and Taiwan with 17. The United States, however, has the highest total link strength, indicating that the influence of its articles is greater than that of those from other nations. Australia is the fourth most productive country with 12 publications, although its overall link strength is the fourth lowest. Nonetheless, despite having only one and six publications, respectively, Belarus and Hong Kong have high total link strength, demonstrating that their articles have a considerable impact.

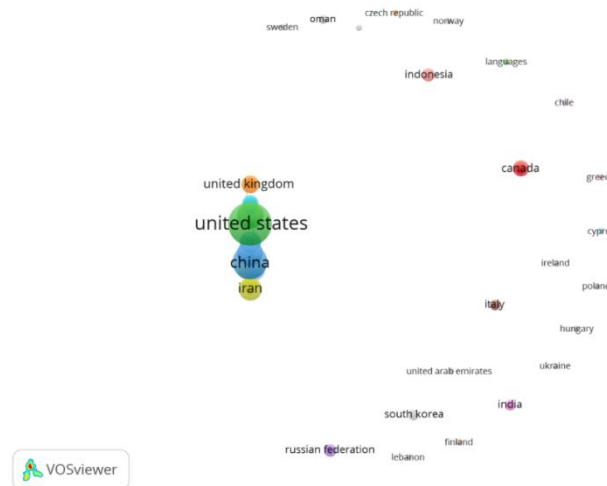


Figure 2. Geographical distribution

Country Contribution

Figure 3 shows the countries' contribution to the highly cited articles of the flipped classroom in tertiary education, demonstrating the figure of citations received by respective country. The Citation attribute presents the number of citations received by papers published by source, Author, organization, or country.

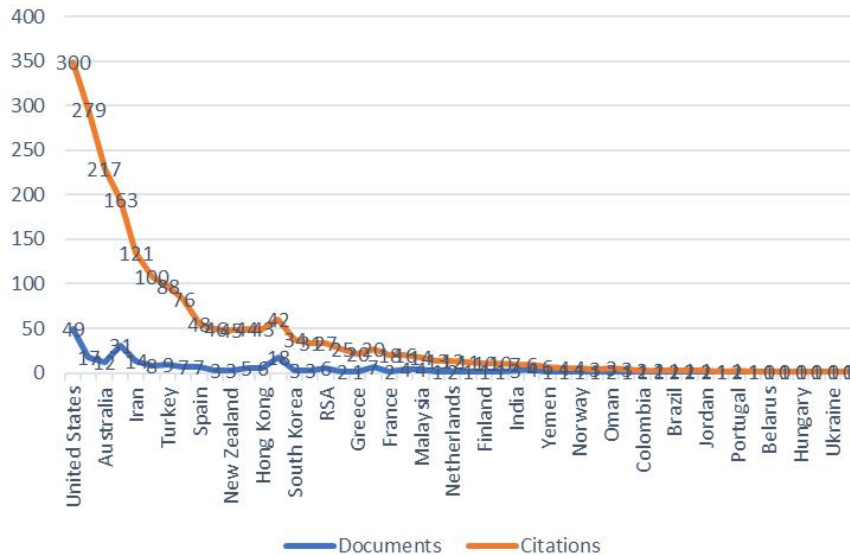


Figure 3. Citations

Figure 3 provides a count of the number of publications and citations that have been compiled on the subject of EFL Instructors' Usage of ICT and Learner-Centered Teaching Strategies in Higher Education to Improve Listening Instruction for a variety of nations. The United States of America and Australia have made the most significant contributions to this topic, each contributing 49 and 12 documents respectively. The United States and Australia had the highest number of citations, with 217 and 300 citations respectively. However, Australia had the highest number of total references. The United States came in second with a citation rate of 13.98%, while Australia came in first with a rate of 36.33%. Taiwan and Canada came in second and third place, respectively, with 613 and 537 citations. The United Kingdom, Spain, Hong Kong, and Saudi Arabia are some of the other countries that have made major contributions to the scholarly articles that have received the most citations. Research on EFL Teachers' Use of ICT and learner-centered teaching strategies to improve listening instruction in tertiary education in Asian societies have progressed with more significant influence, according to the findings of the review. The review also found that countries such as Taiwan, Malaysia, Iran, and Trinidad and Tobago had a higher average citation than the United States. Despite this, western countries continue to have the majority of the high citations for this topic.

Country Collaboration

Figure 4, which was constructed based on a country's five required minimum number of documents, was displayed after the VOSviewer was used to conduct an analysis of the country collaboration. Out of the total number of 51 countries, there were a total of 14 countries that complied with the thresholds; however, the most significant connected items consisted of just 11 countries.



Figure 4. Country collaboration network (Threshold 5, display countries 11, 4 clusters)

Figure 4 illustrates that all 51 countries had publications, but only 15 were mentioned more than 100 times and appeared in the country collaboration network. The United States demonstrated the most extensive collaboration, collaborating with 9 countries to research EFL Teachers' Use of ICT and learner-centered teaching strategies to improve listening instruction in tertiary education, with the highest total link strength of 4, and 300 collaborative publications. Australia ranked second with a total connection strength of 2, collaborating with 12 countries to

produce 217 publications, and it was also the country with the most citations. China had the third-highest total connection strength, with a total link strength of 7, cooperating with 7 nations and creating 163 publications. Taiwan and Hong Kong have the highest total link strength in Asia, with Taiwan producing 279 publications with a total link strength of 3 and Hong Kong producing 43 publications with a total link strength of 5. In Europe, the United Kingdom ranked fourth with a total link strength of 3, cooperating with 9 countries on 100 articles. Additionally, in South America, both Brazil and Chile had a total link strength of 1. This statistic emphasizes the importance of country partnerships in diverse areas around the world in producing a large number of citations on this subject. Furthermore, this data supports prior findings that there is a strong link between international collaboration and the cited publications.

The Most Influential Authors

Table 1 and Figure 5 shows list several authors and their associated documents and total link strength scores, likely within a specific field or topic. Abbott, R. has one associated document and a total link strength of 11, suggesting that their work is moderately discussed and influential within the field. Berninger, V. has one associated document and a total link strength of 9, indicating that their work is also moderately discussed and influential within the field. Geselowitz, K., Habermann, K., Lyman, R. D., Mickael, T., Nagy, W., Nielsen, K., Peverly, S., Raskind, M., Tanimoto, S., and Thompson, R. each have one associated document with total link strength scores ranging from 1-6, indicating that their work is less discussed and potentially less influential within the field compared to Abbott and Berninger.

Table 1. Top authors

Authors	Documents	Total Link Strength
Abbott, R.	1	11
Berninger, V.	1	9
Geselowitz, K.	1	6
Habermann, K.	1	5
Lyman, R. D.	1	5
Mickail, T.	1	4
Nagy, W.	1	3
Nielsen, K.	1	3
Peverly, S.	1	3
Raskind, M.	1	2
Tanimoto, S.	1	1
Thompson, R.	1	1

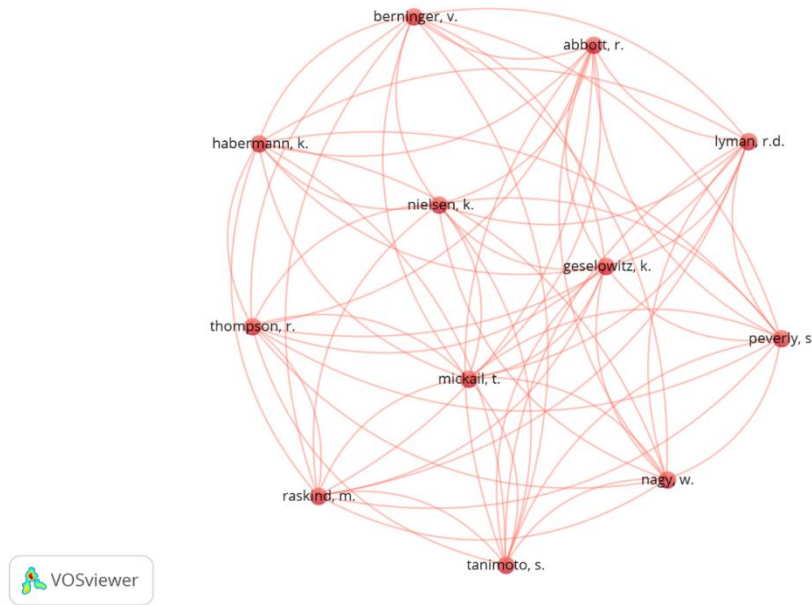


Figure 5. Visualization map of authorship

The Most Influential Article

Table 2 and Figure 6 shows the most influential article and links for a selection of academic papers or publications. Hoover and Gough (1990) publication has the highest number of citations (1601) and a relatively low number of links (3), suggesting that it is a widely cited work but perhaps not heavily referenced or linked in other publications. Liu S. H.'s 2011 publication has a much lower number of citations (135) and no links, which could suggest that it has not had a significant impact on the field or has not been widely read or referenced. Coyne M. D.'s 2010 publication also has a low number of citations (84) and no links, which could suggest a similar lack of impact or reach. Graham S.'s 2011 publication has a moderate number of citations (83) but a relatively high number of links (6), indicating that it may be a well-cited and influential work that has also been referenced and linked in other publications. Obrzut J. E.'s 1981 publication has a low number of citations (80) and no links, which again suggests that it may not have had a significant impact on the field. Finally, Cross J.'s 2009 publication has a moderate number of citations (73) and a relatively high number of links (10), indicating that it may also be a well-cited and influential work that has been referenced and linked in other publications.

Table 2. Most influential article

Document	Citations	Links
Hoover W. A. (1990)	1601	3
Liu S. H. (2011)	135	0
Coyne M. D. (2010)	84	0
Graham S. (2011)	83	6
Obrzut J. E. (1981)	80	0
Cross J. (2009)	73	10

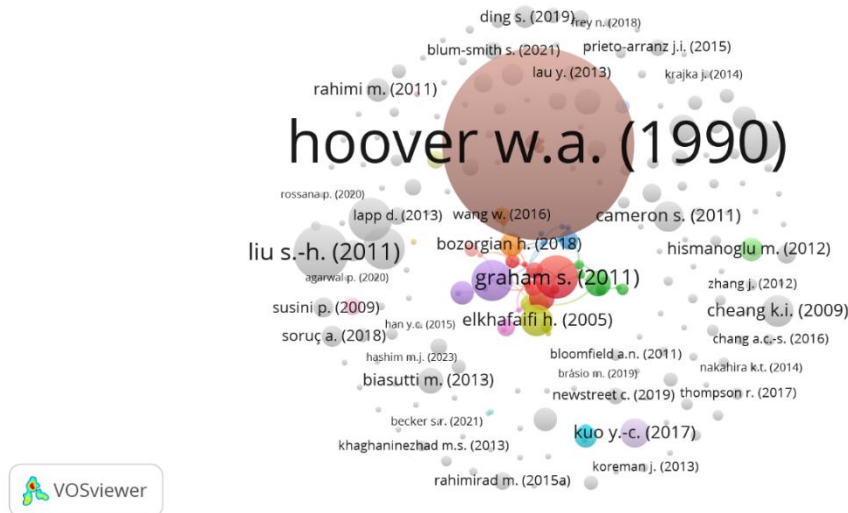


Figure 6. Visualization map of the most influential article

Most Frequently Repeated Author Keywords

Table 3 and Figure 7 show the frequency of occurrence and total link strength for various keywords within a particular field or topic. "Computer-aided instruction" is the most frequently occurring keyword with 51 occurrences and the highest total link strength of 181, indicating that it is a highly discussed and influential topic within the field. "Comprehension" has a relatively low number of occurrences (16) but a high total link strength (175), suggesting that it is a significant and impactful topic within the field. "Literature" has 11 occurrences and a total link strength of 147, indicating that it is a moderately discussed and influential topic within the field. "Content literacy" has 9 occurrences and a total link strength of 124, indicating that it is a somewhat discussed and influential topic. "Students" has 28 occurrences but a relatively low total link strength (121), suggesting that it is a common but perhaps less influential topic within the field. "Linguistics" has 16 occurrences and a total link strength of 120, indicating that it is a moderately discussed and influential topic within the field. "Listening" has 25 occurrences and a total link strength of 116, indicating that it is a significant and impactful topic within the field. "Assessment" has 9 occurrences and a total link strength of 114, indicating that it is a somewhat discussed and influential topic. "Oral language" has 7 occurrences and a total link strength of 114, indicating that it is a less discussed but still influential topic. "E-learning" has 23 occurrences and a total link strength of 106, indicating that it is a moderately discussed and influential topic. "Strategies, methods, and materials" has 6 occurrences but a relatively high total link strength of 104, suggesting that it is an impactful topic despite being less frequently discussed. "Discussion" and "motivation/engagement" each have 6-8 occurrences and similar total link strengths of around 100, indicating that they are moderately discussed and influential topics within the field. "Teaching" has 24 occurrences but a relatively low total link strength (101), suggesting that it is a common but perhaps less impactful topic within the field. "Metacognitive strategies" and "writing" each has 7-8 occurrences and similar total link strengths around 100, indicating that they are moderately discussed and influential topics within the field.

Table 3. Co-occurrence map of keywords (1650 Keywords, threshold 5)

Keyword	Occurrences	Total Link Strength
computer aided instruction	51	181
comprehension	16	175
literature	11	147
content literacy	9	124

Keyword	Occurrences	Total Link Strength
students	28	121
linguistics	16	120
listening	25	116
assessment	9	114
oral language	7	114
e-learning	23	106
strategies, methods, and materials	6	104
discussion	6	102
motivation/engagement	8	102
teaching	24	101
metacognitive strategies	7	100
writing	8	100

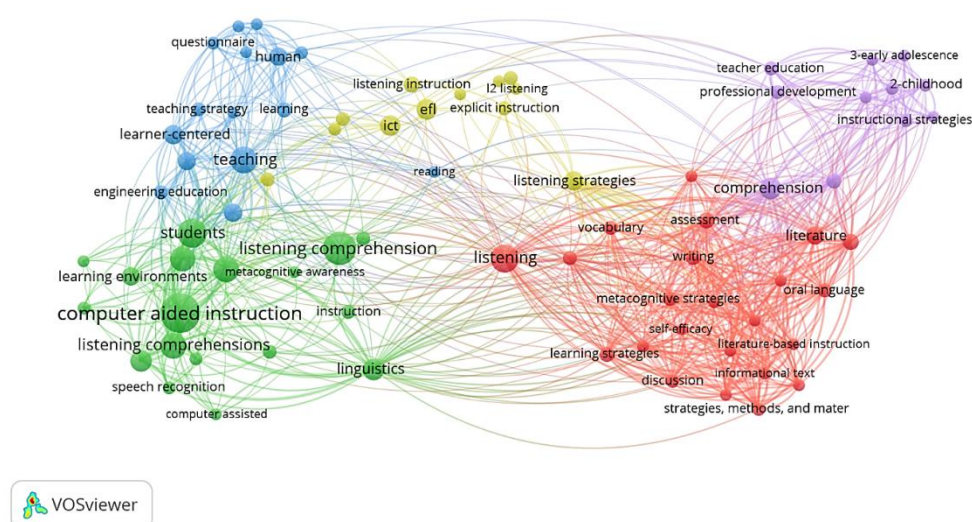


Figure 7. Co-occurrence map of keywords (1650 Keywords, threshold 5, 79 keywords)

Discussion

Lau & Wang, (2013) explored the use of information and communication technology (ICT) in English language education in Malaysian secondary schools via the lens of a qualitative research project. They came to the conclusion that utilizing ICT resources such as computer-based programs and audio-visual materials can help pupils improve their listening abilities. A similar study was carried out by Hunte et al., (2021), in which students used multimedia annotations while listening to literature in English. According to the findings, the utilization of multimodal media led to an increase in the students' level of listening comprehension. It has been demonstrated that learning approaches that center on the student, such as task-based learning, problem-based learning, and project-based learning, have a beneficial impact on the listening abilities of EFL students. A study was carried out by (Al-Jarf, 2022) in which the researchers examined the impact of task-based learning and traditional instruction on the listening abilities of

EFL students. They observed that students' listening comprehension dramatically increased when they learned through task-based activities.

In an experiment, Snow et al., (2020) showed English as a Foreign Language (EFL) students how to improve their listening abilities by using Storify, a tool that is part of the Web 2.0 platform. According to the findings, the utilization of Storify led to a discernible rise in the level of listening comprehension exhibited by the student body. A study was carried out by Malaquias & Malaquias, (2021) in which students utilized a mobile app to listen to English literature and then completed writing assignments based on what they had heard. The findings demonstrated that pupils' listening and writing abilities considerably improved as a result of using the application.

According to the findings of a study conducted by Jaritos et al., (2022), educators view information and communication technology (ICT) as being useful to both their own teaching methods and the learning results of their students. In a similar vein, Naeem et al., (2020) found that teachers believed that the implementation of ICT increased the level of interest and involvement that students had in their educational pursuits.

Research indicates that teachers have varied degrees of expertise and comfort with learner-centered teaching strategies. These approaches can be defined as those that focus on the student. According to the findings of a study conducted by Broemmel et al., (2021), even while educators were aware of the benefits of learner-centered instruction, they lacked the training and experience necessary to effectively implement it in their classrooms. In a similar vein, a study conducted by Naghdipour, (2022) revealed that English as a Foreign Language (EFL) teachers in Oman said that they lacked the knowledge and training necessary to effectively implement learner-centered teaching practices.

According to the findings of a study carried out by Chen & Wu, (2020), educators view information and communication technology (ICT) as being useful to both their own teaching methods and the learning results of their students. In a similar vein, a study that was conducted by Komar et al., (2022) revealed that teachers believed that the implementation of ICT increased the motivation and engagement of students in the learning process.

Research indicates that teachers have varied degrees of expertise and comfort with learner-centered teaching strategies. These approaches can be defined as those that focus on the student. According to the findings of a study conducted by Prieto et al., (2021), even while educators were aware of the benefits of learner-centered instruction, they lacked the training and experience necessary to effectively implement it in their classrooms. In a similar vein, a study conducted by Martí et al., (2020) revealed that English as a Foreign Language (EFL) teachers said that they lacked the knowledge and training necessary to effectively implement learner-centered teaching practices. It would appear that teachers of English as a foreign language have favorable attitudes toward the use of information and communication technologies in their classrooms; however, they may require additional support and training in order to successfully incorporate learner-centered teaching strategies into their practices.

Many studies have been conducted to explore the attitudes of English as a Foreign Language (EFL) students towards the use of information and communication technology (ICT) and learner-centered teaching practices in language acquisition. The findings suggest that, on the whole, students had favorable attitudes regarding the implementation of learner-centered teaching strategies and technological tools in their language lessons. For instance, English as a foreign language (EFL) students in Jordan participated in a study that was carried out by (Khamsuk & Whanchit, 2021), and they reported having a positive attitude towards the use of technology in their language learning. This included the use of digital resources such as websites, social media, and online dictionaries. The students have also stated a need for more activities that are centered around the learner, such as group work, learning based on projects, and feedback from peers. Han et al., (2021) discovered that EFL students had a favorable attitude toward the use of technology in language learning, particularly mobile devices and social media. This was found in their research on EFL students. The students expressed a strong preference for learner-centered activities such as group discussions, role-playing, and problem-solving assignments in their surveys.

EFL students showed good attitudes regarding the use of technology in language learning, including online language resources, multimedia materials, and computer-assisted language

learning, according to a study conducted by (Thuy Nguyen & Habók, 2022). The students have also expressed a need for additional activities that are oriented on the learner, such as learning that is inquiry-based, collaborative work, and peer evaluation. The body of research that was examined reveals that, on the whole, students of English as a foreign language (EFL) have favorable opinions about the implementation of learner-centered teaching methodologies and information and communication technology (ICT) in their language acquisition. They value the benefits that can be gained from learner-centered activities and technological advancements, such as greater motivation, engagement, and interactivity. Hence, including these methods into EFL courses can be an efficient strategy to boost both the attitudes of students and their engagement in the process of language acquisition.

Conclusion

This study examines how ICT and learner-centered education might improve EFL listening training. The bibliometric analysis examines publication trends, geographic distribution, country contribution, collaboration patterns, top contributing authors and articles, frequently repeated author keywords, and unexplored themes. The body of scholarly research on how ICT and learner-centered teaching approaches might improve listening instruction in English as a foreign language (EFL) programs are growing rapidly. (Pfingsthorn & Weltgen, 2022), (Ducker, 2022), and (Mulyadi et al., 2022) have all observed a consistent increase in publications on this topic. Researchers have seen this propensity. Its growth can be attributed to a growing interest in student-centered teaching methods in English as a Foreign Language (EFL) education and the potential benefits of ICT and learner-centered tactics to listening instruction (Liu et al., 2017). This academic subject is expected to grow as educators use new and effective teaching methods to improve English as a Foreign Language (EFL) instruction.

The country distribution, contribution, and collaboration in research on using information and communication technology (ICT) and learner-centered teaching strategies to improve listening instruction in English as a Foreign Language (EFL) teaching shows that this topic is worldwide. The study's global significance is shown by the countries that contributed to it. This finding may help researchers study how ICT and learner-centered teaching strategies are used in English as a foreign language (EFL) instruction in different countries and cultures.

The paper by Hoover W. A. (1990) on the relationship between (ICT) and learner-centered teaching strategies in English as a foreign language (EFL) instruction received 1601 citations, making it the most influential piece of writing and making them the most influential authors, according to an analysis of the most influential authors and articles.

Based on term co-occurrence, the flipped classroom is related to active learning, blended learning, MOOCs, and e-learning in higher education. The flipped classroom model is strongly linked to ICT because these two concepts emerge together in keyword analyses. Our keyword analysis has shown the prominence of flipped classrooms in tertiary education research during the past nine years. ICT meets current educational needs. ICT's rapid growth has enhanced student learning. It accelerates the flipped classroom, which may assist people deal with future educational issues. At the same time, bibliometric analysis and its use in EFL are lacking, and these two themes are among the most recent to be studied. Bibliographic research and the flipped classroom approach to EFL teaching have the ability to solve difficulties in their disciplines.

An analysis of keyword co-occurrence links active learning, blended learning, technology integration, and online learning to the use of information and communication technology (ICT) and learner-centered teaching strategies to improve listening instruction in English as a foreign language (EFL) teaching. This keyword analysis shows that using information and communication technologies (ICT) in English as a Foreign Language (EFL) instruction is becoming more important since it meets students' educational demands in a technology-driven environment. ICT's rapid expansion has enabled interactive and self-directed learning. Thus, modern EFL education emphasizes learner-centered methods like flipped classes. However, bibliometric research in this subject is few, and the integration of learner-centered teaching approaches and information and communications technology is still unexplored. EFL teachers worldwide may benefit from further research in this area.

Implication

The results of this research suggest that improving listening instruction in English as a Foreign Language (EFL) classrooms through the use of Information and Communication Technologies (ICT) and learner-centered teaching methodologies are possible. The study underlines the fact that the usage of ICT tools such as audio and video materials, online resources, and interactive exercises may give students a variety of authentic listening materials as well as opportunities to develop their listening abilities. These technologies include: In addition, the implementation of learner-centered teaching strategies such as collaborative learning, peer feedback, and activity-based tasks can provide for more active and engaged learning, which is essential for efficient listening instruction. The study also advises that educators should receive sufficient training and support in the use of information and communication technologies (ICT) and the implementation of learner-centered techniques in order to successfully integrate these tools into their teaching practices.

Future Recommendation

On the basis of the findings of the comprehensive literature assessment, there are a few potential future paths that could be taken, including the following:

Even though this review provides evidence that the integration of ICT and learner-centered teaching strategies can improve listening instruction, additional research is still required to investigate the effectiveness of specific tools and strategies, as well as their impact on various types of learners and in a variety of EFL contexts.

According to the findings of the review, in order for teachers of English as a foreign language to effectively incorporate learner-centered techniques and information and communication technology into their lessons, they require adequate training and support. Hence, potential future initiatives could center on the development of training programs that give educators the knowledge and skills they require in order to successfully execute these strategies. As a result of the rapid development of technology, it is essential to investigate the possibilities offered by developing technologies, such as virtual and augmented reality, in order to improve listening teaching. The usefulness of these technologies and the ways in which they might be incorporated into EFL classes could be the subject of study that will be conducted in the future.

The review draws attention to the significance of evaluation in the process of fostering efficient training in listening. The investigation of the function of assessment in promoting the integration of ICT and learner-centered techniques and the investigation of how assessment might be tailored to enhance the development of listening skills could be the focus of future directions.

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