



Exploring Pedagogical Approaches for Teaching English to Generation Z: A Bibliometric Analysis

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

There has been a paradigm shift in the knowledge acquisition over the decades with the advent of digital era and information and communication technology. In the traditional form knowledge transfer has been largely limited to lectures and discussions with the instructor being the focal point of knowledge transfer. In the current generation, where the Generation Z is the student herd, the knowledge acquisitions must adapt to compliment their skills and behavioral attributes. There seems to be a gap with Generation-Z learners being digitally –skilled but instructors either migrating to technology or being non-skilled. This objective of the paper is to understand the pedagogical approaches for teaching English as a Foreign Language (EFL) to the Generation Z using Bibliometric analysis. To do so, the paper has searched the SCOPUS database to examine the quality research conducted in this study until recently. The analysis included the keywords “Generation Z”, “Pedagogy” and “English Language Learning.” The results of the study indicate significant co-occurrences with mobile learning and e-learning. These papers emphasize the need

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for adapting technological tools to teach EFL to the Generation Z. Additionally, the limited research in this area indicates the enormous scope in this domain for further scientific inquiry and pedagogical recommendations.

Keywords: Generation Z; e-learning; mobile-learning; pedagogy; bibliometric analysis.

1. INTRODUCTION

Knowledge acquisition, in the traditional form, has been largely limited to lectures and discussions with the instructor being the focal point of knowledge transfer. Most Asian countries such as Indonesia, India, China, Japan among others consider English as a foreign language even in this decade [1]. Yet, the need for non-native speakers of English to learn this language increases with the high need for English language knowledge in the job markets, the need includes a range of practical forms and also in STEM (Science, Technology, Engineering, Mathematics) [1]. Another study supports English is widely perceived as something necessary purely for examinations to progress into the next stage of education with exams such as TOEFL, IELTS and the like [2].

Studies indicate that the rapid growth of Internet and the accessibility to various mobile applications have transformed the way young learners acquire and process information [3]. In the domain of teaching English to Gen-Z, there is a need for significant pedagogical alterations to meet the needs of Gen-Z. Traditional teaching methods focusing solely on textbooks and lectures are no longer as effective in engaging and motivating Gen Z learners as per various studies. A paradigm shift related to English language teaching pedagogy is the need of the hour. The digital age demands that teaching English to the Gen-Z requires innovative, technologically equipped pedagogical approaches [4]. These technologies must utilize interactive literary texts and skills to engage students and educators and course designers need to be skilled at it too.

This study is a bibliometric analysis to understand Generation Z and their preferred styles of learning English as a Foreign Language (EFL). A Scopus database extracted the most recent and quality research conducted in this domain. The earliest paper was published in 2016. The analytical paper searched within the Scopus database using the keywords "Generation Z", "pedagogy" and "English language teaching." The need for an augmented

change in the teaching patterns for the English language, and the enormous gap in the learning and behavioral patterns of Instructors and learners (who belong to Gen-Z) has initiated the current study. The study aims to explore the research conducted on the various pedagogical approaches for English language teaching to Gen-Z. The results can help educators and course designers modify or upgrade the teaching styles vis-à-vis the needs of Gen-Z.

1.1 The Need to Research Generation Z and their English Language Learning

Generation Z (those born after the year 2000) are mostly taught English by Generation X (those born between the early 1960s and the early 1980s). In some cases, they are also taught by Baby Boomers (born between the early 1940s and the early 1960s). There is a stark difference in the preferred learning styles, skills, and interests of the Gen-Z compared to the previous generations [4]. The primary difference lies in the ease of using technology. Being the only generation until now that has been exposed to technology throughout their entire lives, the Gen-Z is also known as the N generation (for Net), D generation (for Digital), or the Google generation [4]. This technological familiarity from birth invariably makes technology a seamless part of their lives [4].

Generation Z is a tech-savvy and digitally connected generation. They are kinaesthetic, experimental learners who enjoy interactive, and quickly-delivered multimedia content Immediate feedback and rewards are another aspect of their learning motivation and interest, explains Rothman [5]. The study also points out that Gen-Z has all the information at their fingertips (through a mobile application, in most cases). However they need to learn the skills of discovery, curation, and management of the information; instructors need to understand that they prefer quick answers over a longer problem-solving approach [5]. The average attention span (of seven to ten minutes) with the previous generation has been reduced drastically in Gen Z; they prefer less than 20% of a text for reading "because they want to get to the point as fast as possible" [4].

Their preferred learning styles include hands-on learning, or experiential learning versus auditory listening (lectures and discussions), collaborative projects, interactive games, or anything wherein they can engage in trial and error [5]. Rothman also explains that their brain is wired to grasp the visual forms of learning more effectively over lectures or discussions. Most importantly, their constant exposure to six-second patterns of information via social media platforms rewires their brain to expect brief information in short rapid bursts [5].

2. LITERATURE REVIEW

The review included 7 journal articles, 3 conference articles and 2 book chapters written in English, the widely used language in the research database, SCOPUS. 12 research works that were extracted explore the paradigm shift in the teaching pedagogies for English as a Foreign Language, primarily in the form of introduction of computer technology into Foreign Language (FL) learning. The papers emphasize the new direction as inevitable, given the benefits for English as a Foreign Language (EFL) students and the characteristics of Generation Z learners.

In a research study Felix, 2021 exhaustively investigates the teaching of EFL to achieve positive student outcomes. The study critiques three key aspects that must be catered to in the process of teaching EFL any language including EFL plays a key role in shaping individual experiences; the need to acknowledge learners as active agents and accordingly adapt pedagogies, and the need to incorporate audience-specific practices based on the demographic data.

2.1 Web-Assisted Learning and Positive Learning Outcomes

Bashori [6] explores the advancement of the "I Love Indonesia" website and evaluates its effectiveness in enhancing language learning among high school EFL learners in Indonesia. This research concluded that the shift from Computer-Assisted Language Learning (CALL) to employing web-facilitated language learning (WFLL) for teaching English as a Foreign Language has shown a positive attitude among its participants [6].

2.2 Mobile App and Effective Learning Environments

Mokhtar & Jamil [7] investigate the impact of mobile technology on the Malay language education system with a focus on Generation Z students. The study addresses the problem area in teaching, i.e., knowledge transmission with skill development, particularly in teaching Generation Z students. The study concludes that adopting mobile technology in teaching enables teachers to effectively impart both knowledge and high-level thinking skills (HOTS) skills [7].

Another similar study by researchers identifies that instructors need to understand the generational differences and learning preferences of Generation Z students to create effective learning environments. The study further infers that using the mobile app positively affected students' vocabulary retention and made learning more fun. Although a considerable number of students preferred learning through Mobile apps over traditional methods, not all Generation Z students were automatically inclined toward using mobile applications for language acquisition. This indicates the key role teachers can play in blended forms of teaching English [4].

Also, Latypova, et al., 2018, in their study examine the effectiveness of Mobile Assisted Language Learning (MALL), specifically with the use of the ELEVATE app in improving language skills. The study proves that mobile apps can facilitate a meaningful learning environment. The research assessed the learning of vocabulary, listening, comprehension, and pronunciation of English language learners. This learning had no assistance and students showed positive attitudes towards the creative ways of language learning.

2.3 Multimedia Content Creation Aids Language Learning

In the research study, "English as second language: Teach to learn with fun with latest tools." Rajakumar [8] concludes incorporating technology in teaching with multimedia sources is the need of the hour for educating Generation Z learners. Information and Communication Technologies (ICT) can revolutionize English language teaching. Exclusive use of traditional methods can be insufficient and the use of tools such as mobile phones, the internet, and multimedia resources can make learning

engaging and effective. The study concludes that teachers can teach English as a Foreign language too through creative methods by using innovative ELT techniques like dramatics, movie clippings English songs, sports commentaries, and advertisements among others. This research paper emphasizes the need to use latest technological tools as a means of teaching the English language and making learning easy and enjoyable.

In another similar study Dukut, [9] from Indonesia, the researcher proposes the use of bilingual picturebooks and digital animation software depicting Indonesian cultural characters for English language teaching in Indonesia. The study aims to understand the learning efficacy of eighth-graders. The study concludes that the transition from picture books to a computer game harnesses the tech-savvy behavior and media-use-related skills of Generation Z learners, fostering a creative English classroom environment.

2.4 Teaching Pedagogies to Suit the Generation Z Behavior

While mobile-learning or e-learning is the more favored method of learning for Generation Z students, their behavioral patterns do come with certain setbacks that needs to be addressed. One of the significant challenge for Generation Z students in any form of learning is the reduced attention span and the need to understand the crux of any learning in the shortest time. A 2022 study by researchers suggests incorporating educational breaks using augmented reality technology during language learning (EFL) classes can help maintain students' focus and motivation, improve grammatical and lexical skills, speech activity, and digital literacy too. Chirkova, et al., [10]. Another study explained focusing on characteristics of Generation Z and restructuring the teaching pedagogies helps in effective learning [11].

2.5 Teacher's Efficacy and Preparedness to Teach Generation Z

Another study Pondelíková, [12] that included students and teachers from various academic fields in Slovakia on design thinking and language learning inferred that design thinking engenders innovation, supportive learning environment for students and teachers. Another study focused on the need for teacher's digital

literacy [13]. Along with Generation Z's characteristics, globalization and technological advancement is another cited reason by the researchers. The digital upgradation of the instructors can make classroom teaching effective with an integration of technology.

3. METHODOLOGY

When it comes to finding research articles, the Scopus database is a big player. The objective of this study is to evaluate the advancements added to the existing understanding of Digital advancements in higher education. Generation Z has been a part of the internet-connected world. They have witnessed digital advancements all through their lives. Thus, they have little or no inhibitions to using digitally advanced devices or apps. Artificial intelligence in higher education has also augmented together with the digital revolution. AI (artificial intelligence) covers numerous topics and offers diverse search functionalities to aid researchers in acquiring accurate insights. The current study has employed bibliometric mapping on the Scopus database. Bibliometric mapping is a valuable instrument for investigating advancements within any discipline. This approach assists in recognizing the latest trends, insights, and advancements within the realm of artificial intelligence.

In the past, ample research studies have effectively investigated the trends or advancements in any domain through bibliometric approaches. The current domain that is being studied includes teaching, learning, and pedagogies. Bibliometrics is a quantitative critique of a certain research domain and it includes various aspects about the production and consumption of books and documents. For our analysis, this study has extracted pertinent materials from the Scopus database, employing the bibliometric tool VOSViewer.

This study aimed to explore pedagogical approaches for teaching English to Generation Z. To find relevant studies for this paper, the researchers searched within the Scopus database using the keywords "Generation Z", "pedagogy" and "English language teaching." They specifically focused on journal articles, conference articles and book chapters written in English, because that is the most common language used in the Scopus database. The following search string is used to extract papers relevant to pedagogical approaches for teaching.

TITLE-ABS-KEY ("Generation* Z" AND pedagog* OR efl OR english AND language AND teaching)

3. RESULTS

Fig. 1 shows the percentage share of subject areas with relevant publications. Social sciences domain has the maximum publications followed by computer science, arts and humanities and other domains.

In the last decade, there has been an increasing focus on research about the pedagogical tools for the English language. It could be speculated that the rising digital advancements have been the key reason. As is evident from the Fig. 2 graph, the number of research articles or documents published has started rising from 2017 onwards. Nevertheless, the number of articles published in this domain investigating the pedagogical approaches of teaching English as a foreign language to Generation Z is not substantial. This indicates that the kind of pedagogies that are used to teach English to both native and non-native English

speakers need to be explored and documented worldwide.

Fig. 3 exhibits the percentage of publications in different article types. The SCOPUS list of articles on pedagogical tools include 7 articles, 3 conference papers and 2 book chapters.

Table 1 displays the citations of all documents. In Fig. 5, the co-occurrence of the most frequent keywords is displayed. In Fig 5, the relative frequency of keywords is represented by their respective font size, the co-occurrence of keywords is represented with connecting lines, and the clusters of repeatedly co-occurring keywords are shown in the same colour. Note that some keyword labels are missing for no other reason but the way VOS Viewer renders the graph. Among the keywords, generation Z, e-learning, mobile learning and students were the most frequently occurring keywords and they have the decreasing order of link strength with other less frequent keywords such as educational institutions, critical thinking, design thinking, augmented reality, communication method and design animation [15].

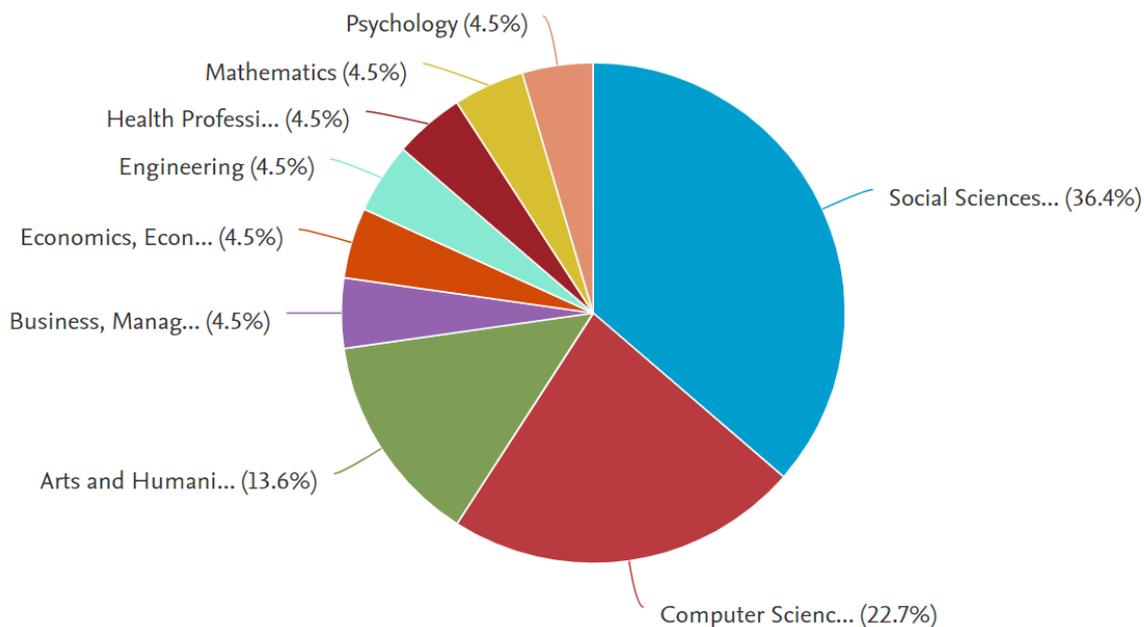


Fig. 1. Publications by subject area

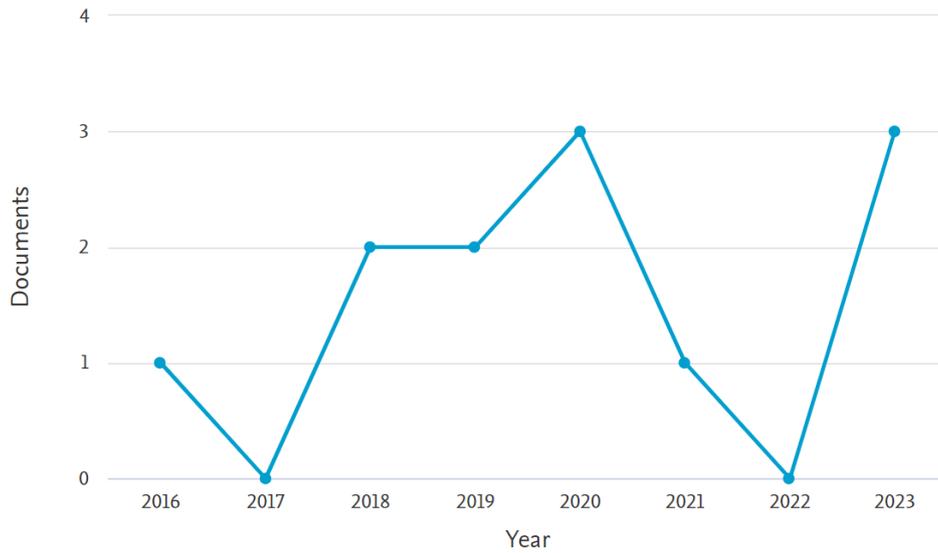


Fig. 2. Documents by year

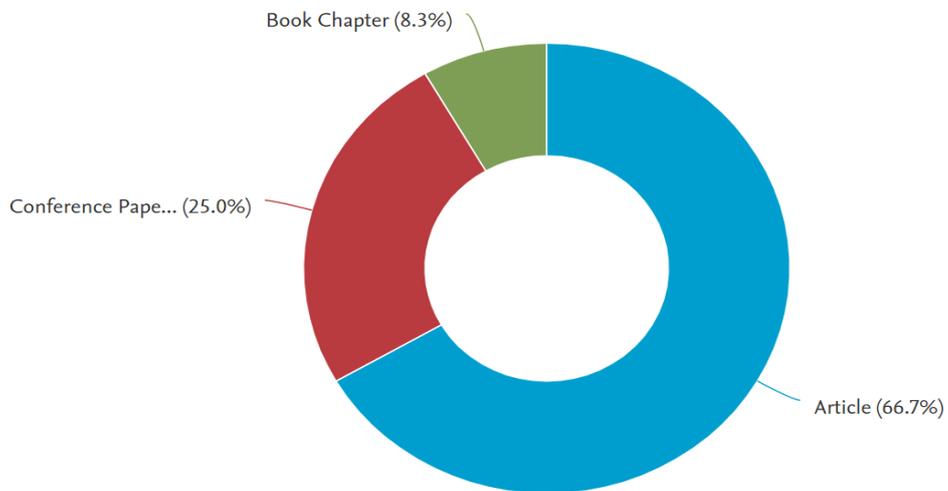


Fig. 3. Documents by type

Table 1. Citations of all documents

Document by author	Citations
Polakova [4]	62
Bashori [6]	4
Dikut [9]	3
Mokhtar [7]	2
Latypova [14]	2
Rubtsova (2020)	2
Rajakumar [8]	0
Chaika [11]	0
Felix (2020)	0
Chirkova (2023)	0
Pondelikova (2023)	0

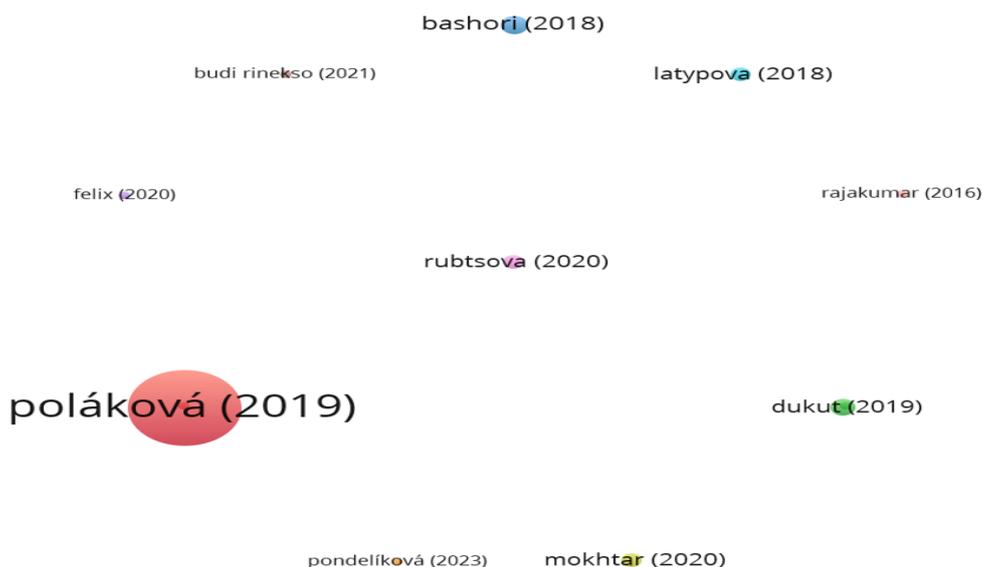


Fig. 4. Bibliographic coupling of documents

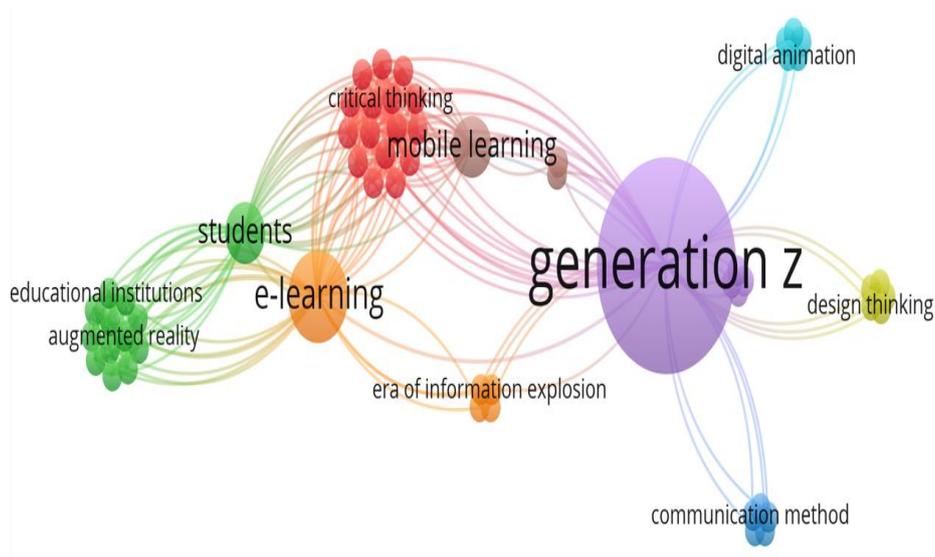


Fig. 5. Co-occurrence of most frequent keywords

From Table 2, the highly researched keywords are: generation Z, e-learning, students and mobile-learning as displayed in Table 2. This means that the keyword “Generation Z” is studied in correlation with the keywords “e-learning”, “Students”, “Mobile-learning”, more frequently. This indicates that in the 12 papers extracted for the bibliometric analysis, e-learning has occurred 37 times, “Students” has occurred 32 times, and “Mobile-learning” has occurred 22 times in relation to the keyword “Generation Z”. The keyword Generation Z is also used with

themes such as “Computer-aided instruction”, “Critical thinking”, “Esl students”, “ICT”, “Learning performance”, “Learning systems”.

Regarding the connections, there are new avenues of connections like English language learning – educational game software, foreign language – e-learning, e-learning– esl students, augmented reality – foreign language teaching, computer-aided instruction – generation Z, generation z – communication method, pedagogical techniques – generation Z

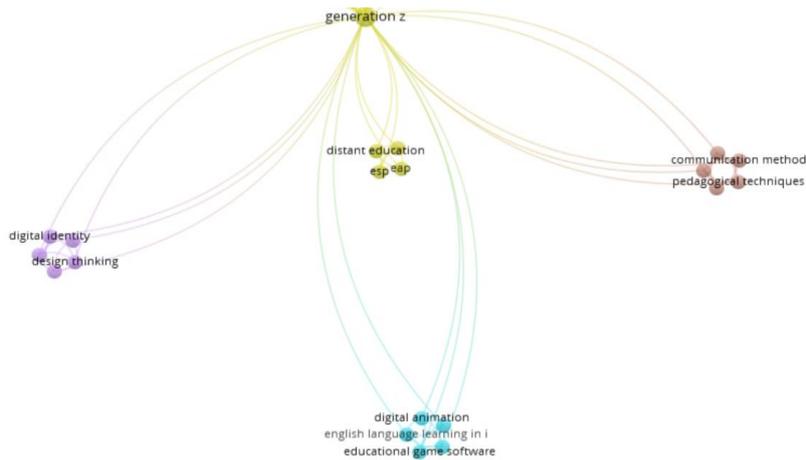


Fig. 6. Co-occurrence of less frequent keywords (part 1)

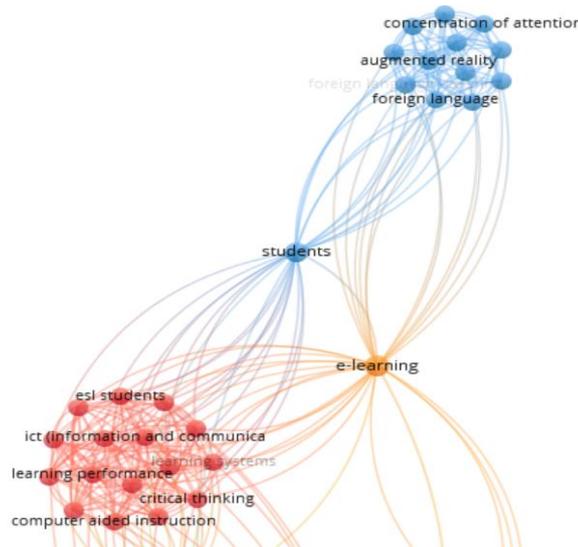


Fig. 7. Co-occurrence of less frequent keywords (part 2)

Table 2. Frequently occurring keywords

Keyword	Occurences
Generation Z	46
e-learning	37
Students	32
Mobile-learning	22
Computer-aided instruction	19
Critical thinking	19
Esl students	19
ICT	19
Learning performance	19
Learning systems	19
Digital devices	1
Digital technologies	1

which are displayed in Fig. 6 and Fig. 7. “Design thinking” and “constructivism” are linked to

keywords like Generation Z and pedagogical tools as evident from Fig. 6 and Fig. 7 [16,17].

4. DISCUSSION AND CONCLUSION

The study conducted a bibliometric analysis to explore the pedagogical approaches that can be adopted to teach English to Generation Z. In this context, the keywords used were "Generation Z", "pedagogy" and "English language teaching." Frequent occurrences of keywords such as "e-learning", "Mobile-learning" and "students" indicate the ongoing research in this purview. In this study, the prevalence of quality research papers in the SCOPUS database infers that research has begun in the context of Generation Z and their e-learning/mobile learning for English language learning. However, the presence of only 12 papers indicates that there is scope for future research in this domain. Also, the research papers in this domain are a recent phenomenon. The database has extracted research papers between the years 2016 and 2023.

The analytical study further concludes the need for a paradigm shift in the teaching pedagogies for English language learning among Generation Z. The pedagogical approaches explored in this paper demonstrate the importance of incorporating technology and digital resources into the English language classroom for Generation Z. The study also highlights the significance of digitally equipped pedagogies such as Mobile Assisted Language Learning (MALL), Learning through gaming software, picture book learning, collaborative games, using educational pauses, using technological tools including dramatics, movie clippings English songs, sports commentaries, advertisements in English to make the English language learning easy and enjoyable, and also to effectively engage Generation Z in the process of learning English. As the digital landscape continues to evolve drastically, there is a pressing need for educators to adapt their pedagogical practices to meet the needs of the tech-savvy Generation Z and leverage technology as a tool for language learning.

The study also highlights the need to include pedagogical techniques to address the setbacks of Generation Z. Few studies under the bibliometric analysis have covered the need for teachers to address the attention span issues of Generation Z. This generation is constantly bombarded by quick and robust information in less than a minute, in the form of multimedia content, is less motivated and less focused on a lecture or discussion. The studies indicate the inclusion of visual and other multimedia sources

as teaching methods along with the lectures. Another paper also addressed the prevalent gap in the pedagogical methods that arise due to non-tech-savvy instructors. Learners are digitally skilled, but the instructors are in the process of migrating to digitalization or digitally illiterate too. This lack of incorporating digitally equipped tools can create a negative learning outcome on the otherwise tech savvy, Generation Z. This adaptation will ensure that English language education remains relevant and effective in the digital age.

The frequency of co-occurrence of keywords "Generation Z" with other keywords such as "mobile learning", and "e-learning" indicates that there is a strong correlation between the keywords. Further, the presence of few research papers in this domain between 2016 and 2023 indicates the immense scope for further studies in this domain. Technology is an innate aspect of Generation Z. Incorporating technologically advanced tools in English language learning can benefit the learning and teaching process positively

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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