Global Trend and Typologies of Common Pedagogies of Teaching Pupils with Visual Impairments in Integrated Primary Schools: A Bibliometric Analysis

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ABSTRACT

Pedagogies of teaching students with disabilities are significant in education. But there is limited information on the trend and types of pedagogies for teaching pupils with visual impairments. The focus of this paper was to conduct a bibliometric study on the global trends in research about Common Pedagogies of Teaching Pupils with Visual Impairments in Integrated Primary Schools from 2015 to 2024. Bibliometric analysis was employed to analyse the situation using VOSviewer 1.6.20 software to establish visualization networks. The results indicate that publications on pedagogies of teaching for developing countries were very low linked to developed countries. There is a need for integrated primary schools to propose and design a framework that guides the selection of the best pedagogies of teaching pupils with visual impairments by considering their needs. Systematic reviews conducted by integrated primary schools in different contexts may offer more insight into choosing the best teaching pedagogies for PwVI to foster access to education.

Clinical trial: This study is not a clinical trial.

Keywords: pedagogies of teaching, access to education, pupils with visual impairments, visual impairment, integrated primary schools.

INTRODUCTION

The integration of pupils with visual impairments into mainstream primary schools has gained significant attention worldwide as part of the broader movement toward inclusive education. Inclusive education emphasizes the need for equitable access to learning opportunities for all students, regardless of their abilities or disabilities, in integrated primary school settings. United Nations Convention on the Rights of Persons with Disabilities (CRPD) and the Sustainable Development Goal 4 (SDG 4) call for inclusive and equitable quality education for all learners, including those with visual impairments. Given the enormous increase in the world demand to develop 21st century goal of No one left behind particularly pupils with disabilities Pupils with visual impairment in integrated primary schools are a growing population (WHO, 2020).

These efforts reflect a shift from segregated special education to integrated settings where students with visual impairments learn alongside their sighted peers. However, achieving inclusivity requires adapting teaching pedagogies to address the unique needs of visually impaired students while fostering a collaborative and supportive classroom environment. According to Negasha and Gasa 2022; Otieno et al., 2023; Alphonsine and Faustin (2024) there is a statistically significant positive relationship between teaching and learning pedagogies usage for visually impaired students and their academic performance in integrated primary schools. The recent study by O`Connor et al., (2024) and Diasse & Kawai (2024) indicate that common pedagogies such as

storytelling, question and answers, demonstration method, sports and games method, Bungua Bongo method, Group discussion method, and songs foster access to education by pupils with visual impairments.

In the context of this paper, the term pupil has been interchangeably with students in integrated primary schools. At the same time, the term pedagogies were also considered as the strategies of teaching and learning for visually impaired pupils. There have been several incidences reported by different researchers on the common pedagogies of teaching pupils with visual impairments in integrated primary schools in different countries. A study carried out in Germany by Yuan et al., (2015) and WHO (2020) found that the visual impairment group discussion method provides diversified learning among learners as it also encourages participatory learning. It is important to mention that the participatory teaching strategy is used in any physical setting, interpreting and fun. Therefore, helping to involve the PwVI in the subjects helps learners to learn about themselves. Through the participatory learning, the VI pupils are able to analyse their own situation, rather than have it analysed by others. In other words, participatory learning helps the PwVI build self-confidence. In another study in Kenya, it was revealed that the most significant pedagogies that the teachers used to teach students with VI were lectures, assignments and group discussions.

The findings inferred that the partially blind students were better suited for the natural teaching pedagogies than the blind students as they performed higher when taught using natural teaching pedagogies (Kana and Hagos, 2024). Indeed, Johnson & Muzata (2019) Zambia found that teachers hold a positive attitude toward teaching students with visual impairments in inclusive classrooms, and there is a positive link between their perceptions and their sense of efficacy. Additionally, teachers with a positive attitude and outlook were found to be effective in teaching visually impaired students in an inclusive setting. However, many teachers lack sufficient training on how to teach students with visual impairments or disabilities in inclusive classrooms (Eburikure et al, 2024). O'Connor et al., (2024) in Nigeria reports that 67% of teachers use assistive devices and adaptive software, further enhancing access to education by visually impaired pupils by enabling them to access digital content and participate in virtual learning environments.

A similar situation was found in Myanmar by Phutane et al., (2022), who reported the common method of teaching pupils with visual impairments is the tactile method of teaching including braille and tangible learning materials. 48.9% of the respondents reported that in primary schools most teachers use braille and tangible learning aids to foster access to education by pupils with visual impairments. Mlolele et al, (2023) cemented that pedagogies of teaching and learning pupils with VI among Tanzanian integrated primary schools is an obstacle that led to poor access to education by PwVI as a result of low academic performance. Although there are some indicators of the prevalence of common pedagogies of teaching VI in integrated primary schools in the global context, several studies indicate a concern about the shortage of skilled teachers for teaching PwVI and insufficient teaching and learning materials.

Undoubtedly, the trend of using assistive devices method, auditory pedagogies, and group discussion pedagogies has increased but it is unclear how it fosters access to education by pupils with visual impairments. There is a growing interest in bibliometric analysis in education, especially regarding common pedagogies that increase PwVI access to education. Recent bibliometric analyses indicate that new pedagogies have been adopted in teaching pupils with visual impairments; notably, the use of assertive technology has been employed in fostering access to education among pupils with VI (Silva et al., 2023). However, these studies provide limited information about possible common techniques that promote access to education for pupils with visual impairments in integrated primary schools. Other researchers have used bibliometric analysis methodological approaches to analyse challenges facing PwVI, the learning environment that enhances PwVI learning, and teachers' perceptions of teaching PwVI (Miyauchi, 2020; Phutane et al., 2022).

Despite these studies, inadequate information regarding the common pedagogies to foster access to education by pupils with visual impairments remains unknown, thus, there is a need for the current study. However, few bibliometric analyses indicate few bibliometric analyses indicate a growing interest among researchers in pedagogies of teaching pupils with visual impairments (Apriady et al., 2024; Binlan & Donguiz, 2024). The risks associated with common pedagogies fostering access to education by pupils with visual impairments in integrated primary schools have inadequately addressed. Therefore, the current bibliometric presents evidence of the risks associated with access to education among pupils with visual impairments that are a result of

inadequate common pedagogies of teaching PwVI in integrated primary schools.

With the increased failure of pupils with visual impairments in integrated primary schools, the debate of common pedagogies to be used in teaching pupils with visual impairments has been raised. Integrated primary schools play a great role in ensuring access to education by pupils with visual impairments (Habulezi, 2016; Munir et al., (2024). Recent empirical studies continue to highlight the value of assistive technology, including braille devices, screen reading software, and audio resources, in facilitating academic success. Adjustments made by educators, including multi-sensory instruction, peer tutoring, and the use of tactile instructional materials, have been extensively documented as best practices (Kana and Hagos, 2024).

In a study conducted in Peru involving visually impaired pupils in integrated primary schools, it was reported that specific teaching pedagogies for these pupils include 41.5% using storytelling pedagogies, while 51.3% of teachers use participatory pedagogies (Barrera et al., 2024). In most inclusive schools, it has been observed that students with visual impairments heavily rely on specialized instructional pedagogies to access education effectively. Therefore, the use of suitable teaching strategies plays a vital role in enhancing their learning experience, fostering a positive attitude towards education, and creating an environment where they feel comfortable and engaged, ultimately making school feel like a second home (Nyiransengiman and Mugiraneza, 2024).

According to Santos et al., (2024), there has been a significant increase in the use of key teaching pedagogies for children with visual impairments, enabling them to access education more easily in Greece, following advancements in science and technology in integrated primary schools. The most preferred pedagogies include questions and answers (73.23%), followed by group discussions (61.34%), sports and games (55.13%), songs (36.46%), storytelling (24.35%), and lecture pedagogies (19.62%). This indicates that these pedagogies are the most effective in facilitating knowledge acquisition for students in integrated primary schools.

Although these teaching pedagogies are widely used in integrated primary schools, for instance, situation, research regarding their effectiveness in promoting the inclusion of visually Impaired children in education have not been well explored. It is thus useful to conduct bibliometric analysis and hence gain a better understanding of the prevailing pedagogical approaches that are used in teaching visually impaired children in integrated primary school settings. As a backdrop, the goal of the study was to explore the topic's development based on the bibliometric approach to determine the most frequent pedagogical approaches used over the last nine years. The evaluation was conducted with several indicators including publications, types of documents, institutions and countries, authors, and other relevant metrics.

In addition, an extensive search was conducted in an attempt to determine the trends in the academic literature concerning the common instructional pedagogies for pupils with visual impairments during this period. The analysis was aimed at reviewing the global trends of studies of the most frequent pedagogies of teaching PwVI in integrated primary schools, the selection of important words as regards types of teaching pedagogies, factors, conditions, and influences that are associated with the learning of visually impaired students in integrated primary schools.

METHODOLOGY

The primary approach for this study involved a bibliometric analysis of research trends on common teaching pedagogies for visually impaired pupils in integrated primary schools. The analysis focused on research articles published from 2015 to 2024. Publications from 2015 to 2024 were included because empirical studies on teaching pedagogies for visually impaired pupils in integrated primary schools were scarce before 2015 (Kapur, 2018). The study used bibliometric analysis to assess patterns in researcher collaboration, institutional and national productivity, and the frequency of key terms associated with teaching pedagogies for visually impaired pupils in integrated primary schools.

Search database and strategy

This study utilized the Dimensions scientific database, selected for its capability to connect vast amounts of data

and provide advanced contextual search and data visualization. This includes tracking citation counts for each publication (Hakkaraki, 2024). The Dimensions database covers the entire research landscape, providing a complete view of various aspects of research. It offers insights into researchers, research fields, institutions, countries, and other essential research topics of interest to stakeholders involved in the research sector (Jamwal & Kumar, 2022).

Literature search strategy

A keyword search strategy was implemented to identify resources for inclusion in the bibliometric analysis. The keywords used in the search included "Pedagogies of teaching" OR "strategies of teaching" AND "access to education" OR "education accessibility" OR "accessibility in education" AND "pupils with visual" OR "visual impairment" OR "pupils with a disability" AND "integrated primary schools" OR "primary school" The search for publications focused on works from 2015 to 2024. A filter was applied to include only open-access journal articles, ensuring the author could access the full text if additional details beyond the abstract were necessary. Consequently, book chapters, monographs, edited books, conference proceedings, and preprint materials were excluded, as these sources might lack the empirical evidence needed to provide a comprehensive view of global trends in teaching pedagogies for pupils with visual impairments in inclusive primary schools. A total of 104,043 research articles were identified and exported in Excel format for further analysis.

Inclusion and exclusion criteria

Several criteria were established to guide the search and access literature of interest to demonstrate the global trend of common pedagogies of teaching pupils with visual impairments in integrated primary schools. As shown in Table 1 the criteria included open-access empirical articles; only articles reported in the English language; empirical articles that are from a peer-reviewed journal; articles published between 2015 to 2024; articles focusing on common pedagogies of teaching pupils with visual impairments in integrated primary schools; pupils/students/children with visual impairments in integrated primary schools; articles that use qualitative or quantitative methods, and those articles that use mixed methods.

Table 1: Inclusion and exclusion criteria for Literature

Criteria	Inclusion	Exclusion
Accessibility	Open access empirical articles only	Closed-access empirical articles
Language of articles	Articles reported in the English language	Articles not reported in the English language
Publication Type	Empirical articles that are from a peer-reviewed journal	Thesis, dissertations, review papers, edited books, proceedings book chapters, and other papers.
Publication years	Articles published between 2015 to 2024	Articles published before 2015
The focus of the articles	Articles focusing on common pedagogies of teaching pupils with visual impairments in integrated primary schools	Articles that did not focus on pedagogies of teaching pupils with visual impairments in integrated primary schools
Population (pupils/students/children)	Pupils/students/children with visual impairments in integrated primary schools	Pupils/students/children without visual impairments in integrated primary schools
Research methods	Articles that use qualitative or quantitative methods, and those articles that use mixed methods	Articles that do not use research methods such as qualitative, quantitative, or mixed methods

Process flow of the systematic review

The process of selecting articles for review considered PRISMA guidelines as shown in Figure 1.

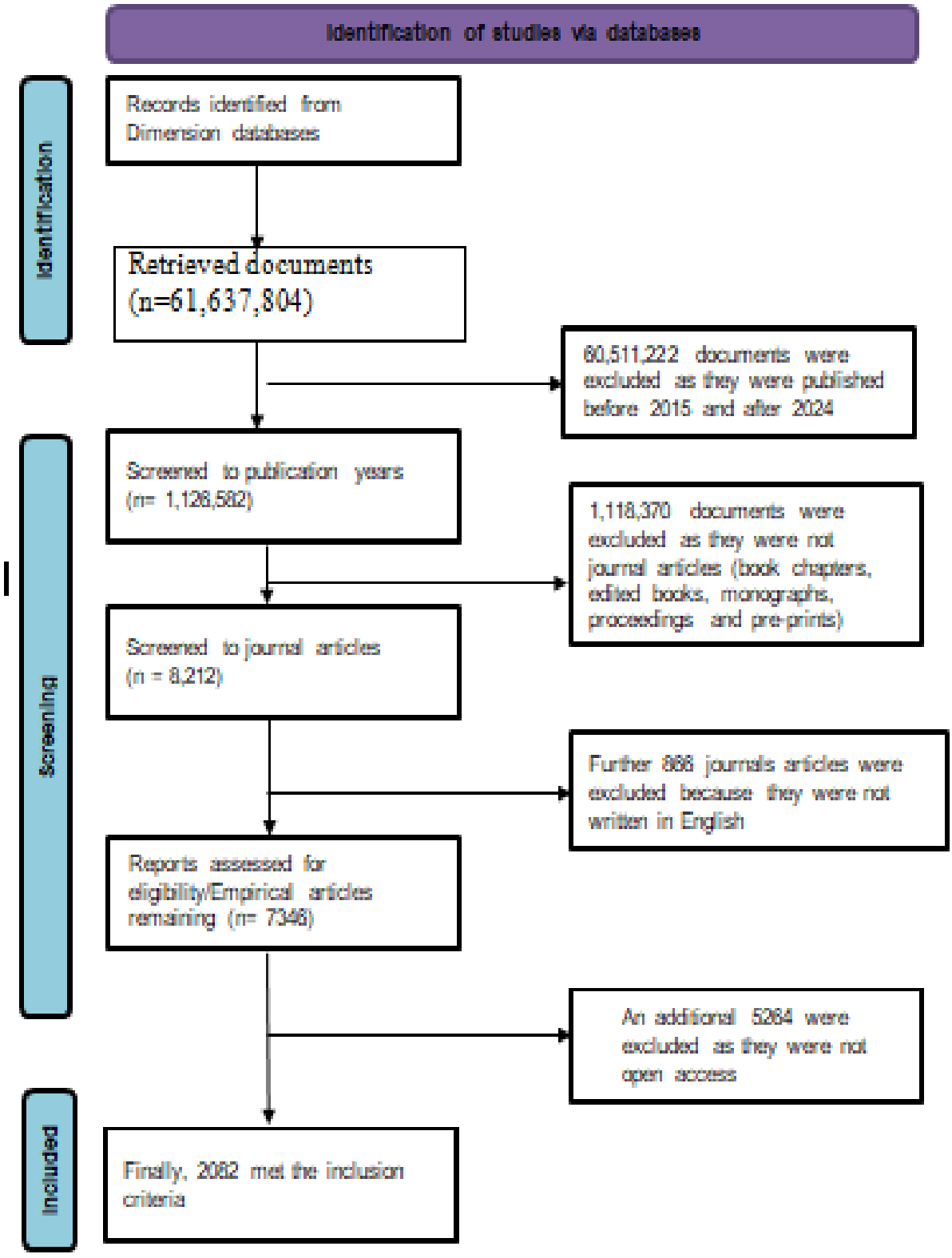

Figure 1: Flow diagram for the systematic review following the PRISMA statement

Data visualization

In the present study, a collection of data visualization software was employed to process the data exported by the dimension database in the form of text. The inherent visualization capability of the dimension database for

descriptive statistics was employed to derive the distributions of articles, journals, and languages of articles to illustrate the publication distribution across nations where the research was conducted (refer to Figure 4 shows the top 10 countries map). Additionally, VOSviewer, an advanced bibliometric analysis tool created by Van Eck 2010 and Waltman (2013), to map bibliometric data so that co-authorship, co-citation, and co-occurrence analyses can be performed (Hakkaraki, 2024).

Limitations

The bibliometric analysis of the application of common pedagogies of teaching visually impaired children was conducted using data from the Dimensions database for the period 2015 – 2024. Since the study utilized open-access data, ethical committee approval was not necessary. Informed consent or ethical clearance was not necessary, depending on the type of study. The research followed the stipulations contained in the "Regulations on Scientific Research and Publication Ethics of Higher Education Institutions." Any probable problems associated with violating the article are entirely the authors' liability.

Data analysis procedures

The VOSviewer version 1.6.20 software was utilized in carrying out the visual analysis of the publications. The software allowed network and overlay visualization analyses of the citation networks of authors, the most productive journals, the most productive organizations, the productivity-leading nations, and the co-occurrence of keywords. Additional analysis was also conducted to describe the collaborative relations between authors, which resulted in the creation of multiple clusters crossing various organizations and nations. The analysis was also grounded on the size of the total links, which indicates the overall strength of the co-authorship relationships between a certain researcher and their co-authors. Frequency analyses were run to provide descriptive statistics, and frequencies were visualized with the aid of a dimension database tool. The bibliometric analysis was performed with the help of VOSviewer software (Arslan, 2022), and the following analyses described in the table below were conducted (Table 2).

Table 2: List of analyses with selected parameters performed on VOSviewer

S/N	Type of Analysis	Unit of Analysis	Minimum Number of Documents of an Author/Organisation /Country/keyword	Minimum Number of Citations of an Author/Organisation /Country	Number of Results Meeting the Threshold
1.	Co-authorship	Authors	5	5	124
2.	Citations	Authors	5	5	157
3.	Co-authorship	Country	5	6	623
4	Co-authorship	Journals	5	306	62583
5	Bibliometric coupling	Documents	5	29	62583
5.	Co-authorship	Organisation	5	5	68
6.	Co-occurrence	Author keywords	5	5	106

RESULTS

Global trends in research about common pedagogies for teaching pupils with visual impairments

An initial search of the Dimensions database reveals that between 2015 and 2024, there were 2,082 publications focused on common pedagogies for teaching pupils with visual impairments. Figure 2 provides further descriptive data on the number of publications per year.

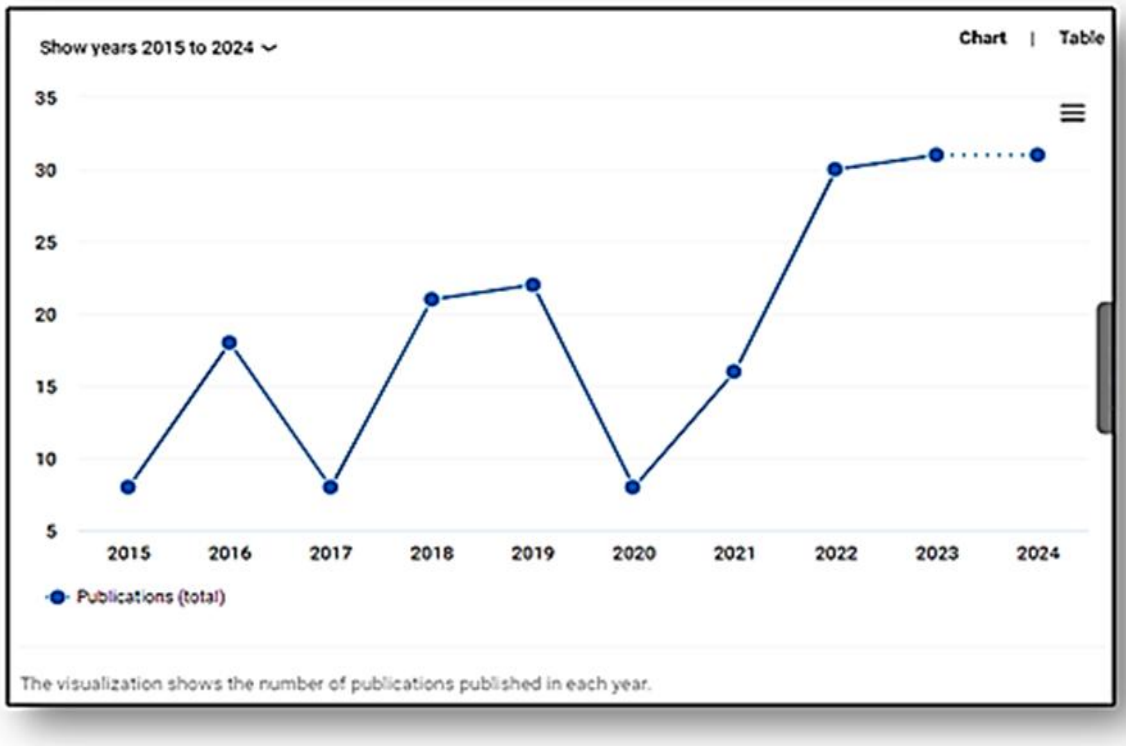

Figure 2: Global trends in research about common pedagogies for teaching pupils with visual impairments

Proportional distribution of the common pedagogies for teaching pupils with visual impairments

Findings in Figure 3 show the proportional distribution of the common pedagogies for teaching pupils with visual impairment. Questions and answers (73.2%); group discussion (61.3%) and sports and games (55.1%) were the most prominent pedagogies used for teaching pupils with visual impairment as compared with other pedagogies.

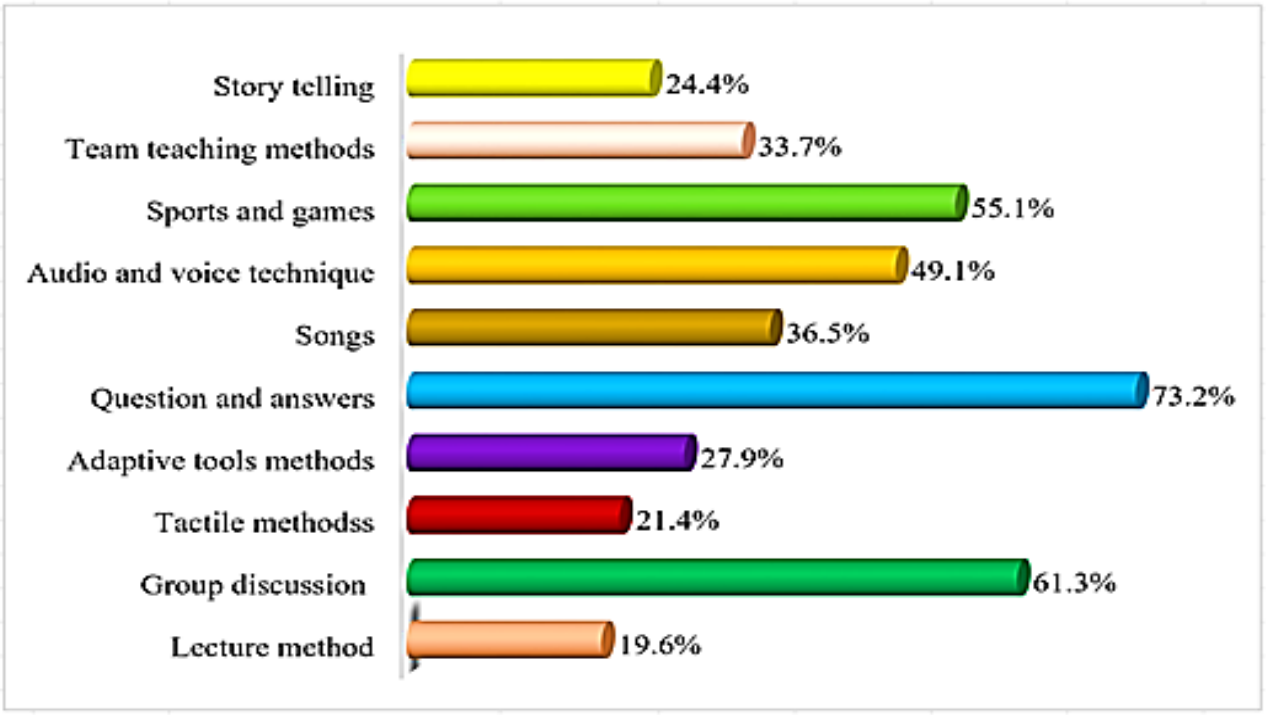

Figure 3: Proportional distribution of the common pedagogies for teaching pupils with visual impairments

Countries with higher publications on the pedagogies of teaching pupils with visual impairments

A bibliometric coupling analysis was conducted to identify prominent countries and collaborative trends in research publications on common pedagogies for teaching students with visual impairments in integrated primary schools. The analysis applied a minimum threshold of five documents and five citations per country. Out of 320 countries analysed, 45 met the criteria. The findings in Figure 4 indicate that developed countries such as Spain, the United States, the United Kingdom, Greece, Canada, China, Australia, and Germany have high rates of research publications and strong collaboration patterns in common pedagogies for teaching students with visual impairments. This could be an alert that there is consideration of pupils with visual impairment by ensuring their accommodation compared to developing countries such as Peru and Columbia which have low connection patterns. Further, Co-authorship patterns between developed countries and Sub-Saharan African countries are highly limited. The data highlights "South Africa" as the sole representative from sub-Saharan Africa, suggesting that collaboration with authors from other countries in the region is minimal.

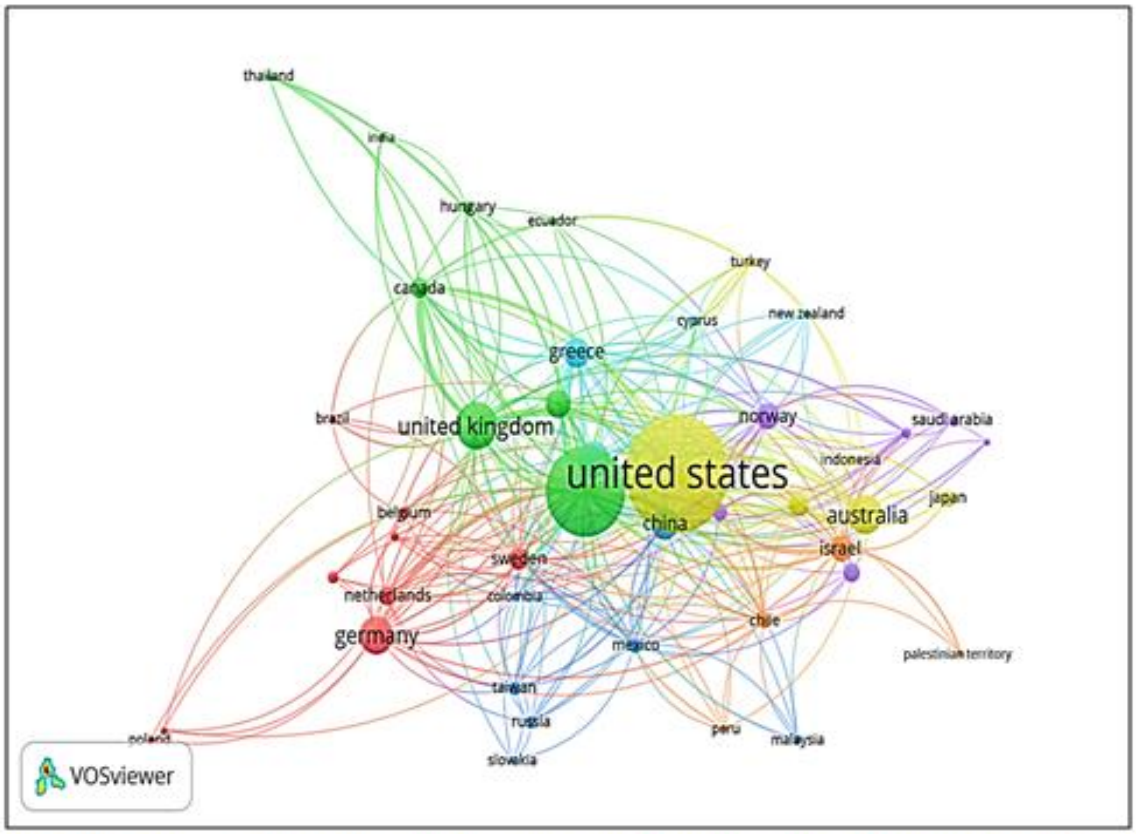

Figure 4: Countries with higher publications on pedagogies of teaching pupils with visual impairments

Figure 1: Countries with higher publications on pedagogies of teaching pupils with visual impairments

Network on popular countries on publications Common pedagogies of teaching pupils with visual impairments

As indicated in Table 3, based on the TLS values from the citation analysis, Spain, the United States, the United Kingdom, Greece, and Canada emerged as the top five countries with the highest rankings in this study.

Table 3: Network on popular countries on publications Common pedagogies of teaching pupils with visual impairments

S/N	Country	Documents	Citations	Total link strength
1	Spain	379	760	156

2	United States	547	596	122
3	United Kingdom	159	509	101
4	Greece	87	406	72
5	Canada	50	125	56
6	China	91	1013	52
7	Australia	122	245	47
8	Israel	68	138	43
9	Germany	119	280	41
10	South Africa	58	163	39
11	Norway	71	429	38
12	Chile	34	93	37
13	Peru	13	26	5
14	Colombia	16	60	18

Articles by journal with total highest links

The distribution of articles across academic journals in the Dimensions database was analysed using VoSviewer, as illustrated in Table 4. Education Sciences ranked highest with 1,846 articles, followed by Computer Education with 1,126 articles. The top five journals with the most publications were identified as Education Sciences (1,846), Computer and Education (1,126), Sustainability (1,021), Frontiers in Psychology (997), and Teaching and Teacher Education (903).

Table 4: Articles by journal with total highest links

Rank	Journal	Articles	Citations	Total link strength	Quartile	H-Index
1	Education Sciences	35	1846	11680	Q1	53
2	Computer Education	8	1126	11040	Q1	232
3	Frontiers in Psychology	21	997	7712	Q2	184
4	Sustainability	6	1021	7296	Q1	169
5	Teaching and Teacher Education	11	903	6665	Q1	158
6	Education and information technologies	5	569	5764	Q1	76
7	Journal of Educational Psychology	16	629	5715	Q2	252
8	Journal of research in science teaching	14	523	5501	Q1	157
9	Computer in human behavior	4	436	5313	Q1	251
10	Review of education research	7	575	5276	Q1	186

Network visualization map highlighting the patterns of strong connections between the journals

Further analysis was conducted to create a network visualization map highlighting the patterns of strong connections between the journals, with the results displayed in Figure 4. The findings indicate that

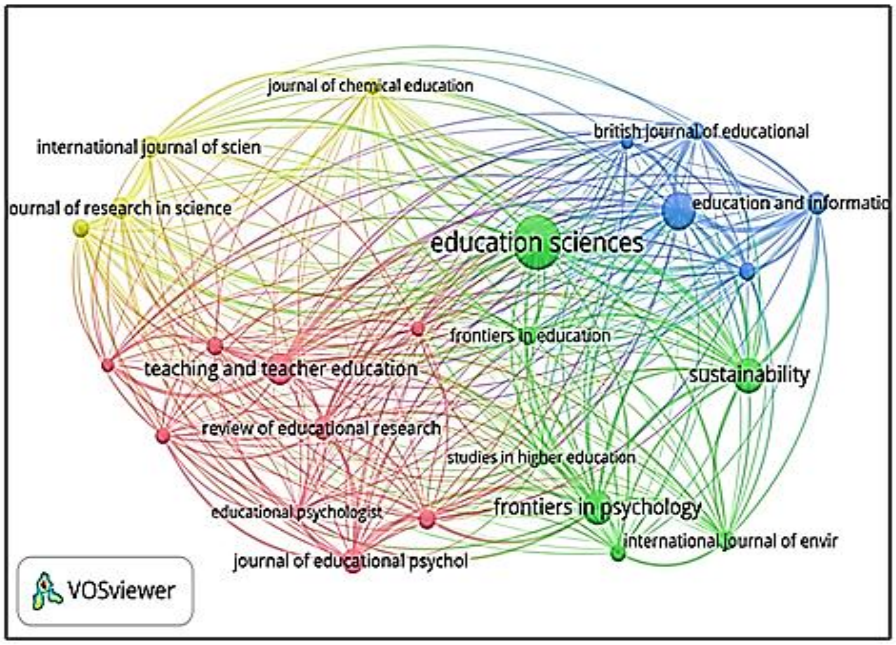

Figure 5: Network visualisation of popular journals about common pedagogies of teaching pupils with visual impairments

Organisations with the highest Co-authorship

The analysis was made based on Co-authorship and organisation relations with a minimum number of 52 citations in the organisation and 10 minimum number of the document per organisation, 16 organisations meet the thresholds out of 2320 organisation the results are presented in Figure 5. VOSviewer analysis shows that the University of Porto has the highest citations with (TLS 8, 29 documents and 60 citations), followed by the University of Granada (7 TLS, 20 documents 86 citations), Universidade Helsinki (6 TLS, 16 documents, 96 citations), Aristotle University of Thessa (5 TLS,14 documents and 63 Citations), University of Patras (4 TLS, 15 documents and 96 citations) and Monterrey institute of Technology (1 TLS, and 16 documents and 73 citations) observed as the most cited organizations. These universities are also placed at the core of the distribution network accounting for their collaboration with other universities (see Figure 5).

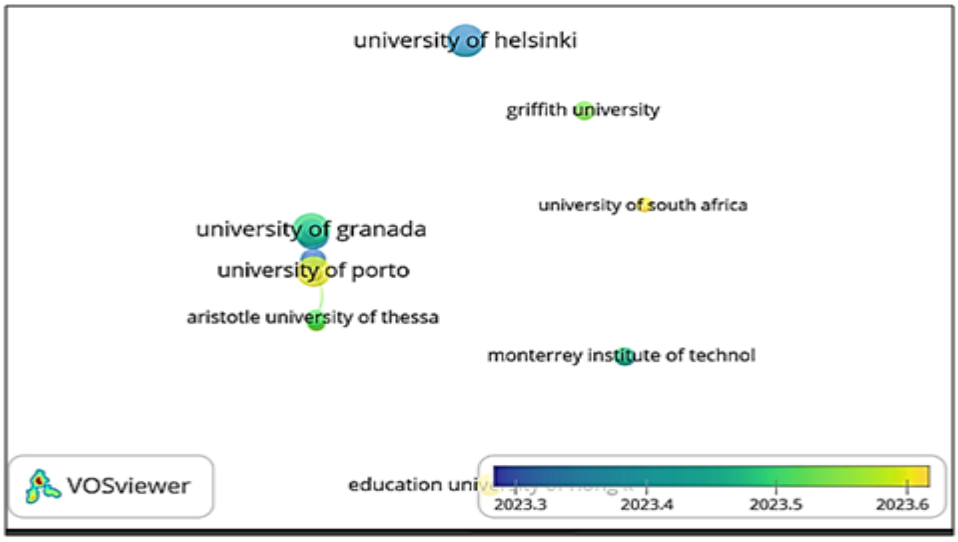

Figure 6: Overlay visualization of Patterns on organisations with the highest citation

Top five Organisations for co-authorship

As presented in Table 5 below, considering the TLS values of the citation analysis of the Co-authorship and organisations such as the University of Porto, University of Granada, Universidade Helsinki, Aristotle University of Thessa and University of Patras disclosed as the top five organisations with higher ranks in this analysis.

Table 5: List of Top five Organisation for co-authorship

Organisation	Documents	Citations	Total link strengths
University of Porto,	20	60	8
University of Granada	20	86	7
Universidade Helsinki	16	96	6
Aristotle University of Thessa	14	63	5
University of Patras	15	96	4

Co-occurrence of keywords about common pedagogies of teaching pupils with visual impairments

The co-occurrence analysis of keywords was conducted to explore the popular key areas associated with common pedagogies of teaching pupils with visual impairments. The analysis was based on 241 minimum numbers of occurrences of a term, whereby out of 42706 terms, 30 meet the threshold. For each of the 30 terms, a relevance score was calculated, based on this score, the most relevant term was selected on the default choice of 60% of the most relevant terms. The term patterns concerning typical pedagogies of teaching students with visual impairment were separated into four clusters: green, yellow, purple, and yellow-green. The term "experience" has recurrently surfaced in the academic literature reviewed. Its sophistication is mostly designed for educators who have a high level of experience in special education, specifically in teaching students with visual impairments.

The concept of experience is highly significant, as experienced teachers have been shown to have a greater degree of capacity in adopting effective pedagogical practices influencing the learning performance and academic achievement of pupils. Experience has been a central topic of the research, considering its thematic significance and influence in the discipline. The word "student" has been recognized as one of the keywords that are commonly used in various research works on general instructional strategies for individuals with disabilities. The term "student" appears to term relevant and specific, as it pertains directly to the primary participants of this research (visually impaired students). The term "student" has been mentioned time and again in research articles, which reveals its fundamental position in research works in this area. The term learning in a purple cluster was taken as access to education during searching and analysis of articles.

Learning was a core determinant output of the study about common pedagogies of teaching visually impaired students. As instructional pedagogies focus on enhancing pupils' access to education, the word was highly used in many articles (see Figure 6). Further bibliographic coupling of the co-occurrence of keywords was conducted to explore how keywords about Common pedagogies of teaching pupils with visual impairments have changed with time. Figure 6 highlights an overlay network visualization map on the co-occurrence of keywords with time. The map shows some co-occurrence keywords with the appearance in a purple color that was the latest in the literature about common pedagogies of teaching pupils with visual impairments such as learning, teacher education, and teaching style.

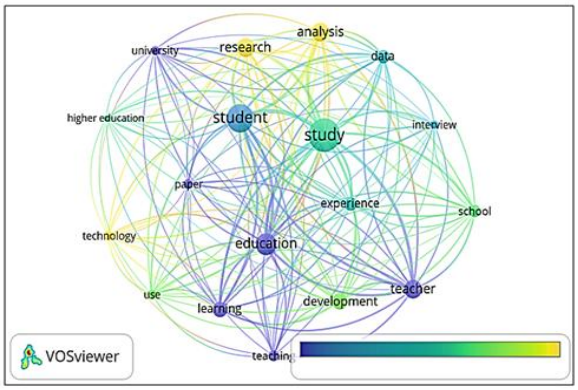

Figure 7: Bibliographic coupling of co-occurrence of keywords about Common pedagogies of teaching Pupils with visual impairments

Authors with higher citation links on common pedagogies of teaching pupils with visual impairments

Results in Table 5 show a sudden increase in publications since 2015, this is due to the global development of science and technology and the universal policy of No One Left Behind.

Table 6: Authors with the highest citation links

Rank	Author	Document	Citations	Total link strength
1	Huwer, Johannes	10	58	4
2	Du, Xiangyun	6	14	3
3	Singh, Chandralekha	6	13	11
4	Vanderlinde, Ruben	5	9	0
5	Paas, Fred	6	8	2
6	Vergara, Diego	6	8	1
7	Akisela, Maija	5	6	1
8	Anton-sancho, `Alvaro	5	6	1
9	Davidovitch, Nitza	6	5	2
10	Mesquita, Isabel	5	3	1
11	Bautista, Alfredo	5	2	0

Overlay visualization of Authors with the highest citation links

The findings of authors with higher citations in Figure 7 were analysed by reflecting the minimum number of 30 citations and the results show that Huwer, Johannes had the highest citations of (58). In contrast, Singh, Chandrasekhar had the highest total link strengths of (11)

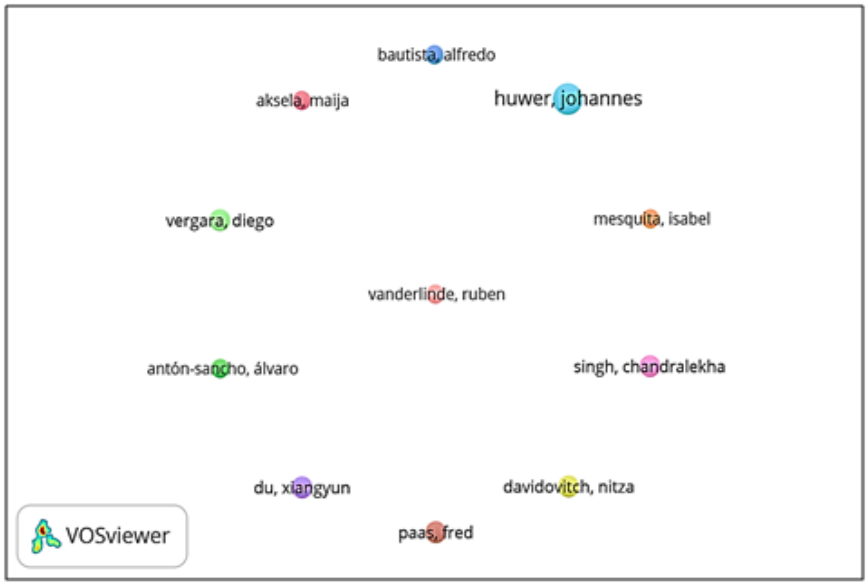

Figure 8: Overlay visualization of Authors with the highest citation links

Productivity of authors and collaborations

In addition, bibliometric analysis was made to explore authors with the highest citations and collaboration with other authors in publishing in common teaching pedagogies for pupils with visual impairments. Figure 8 shows that Lo and Akiba were the most cited authors in common pedagogies of teaching pupils with visual impairments

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from the articles retrieved from the dimension database whereas Michel-Villarreal and Akiba have the highest links based on collaboration. Also, results indicate that the publication collaboration rate increased in 2023 on common pedagogies of teaching pupils with visual impairments. Similarly, geographical location strongly influences the collaborations of authors as indicated in Figure 8, this is evidenced by Michel-Villarreal, Akiba, and Lo having solid collaboration due to their closeness. Nevertheless, Figure 8 highlights the patterns of most quoted authors and strong collaboration with other authors in publishing common teaching pedagogies for pupils with VI.

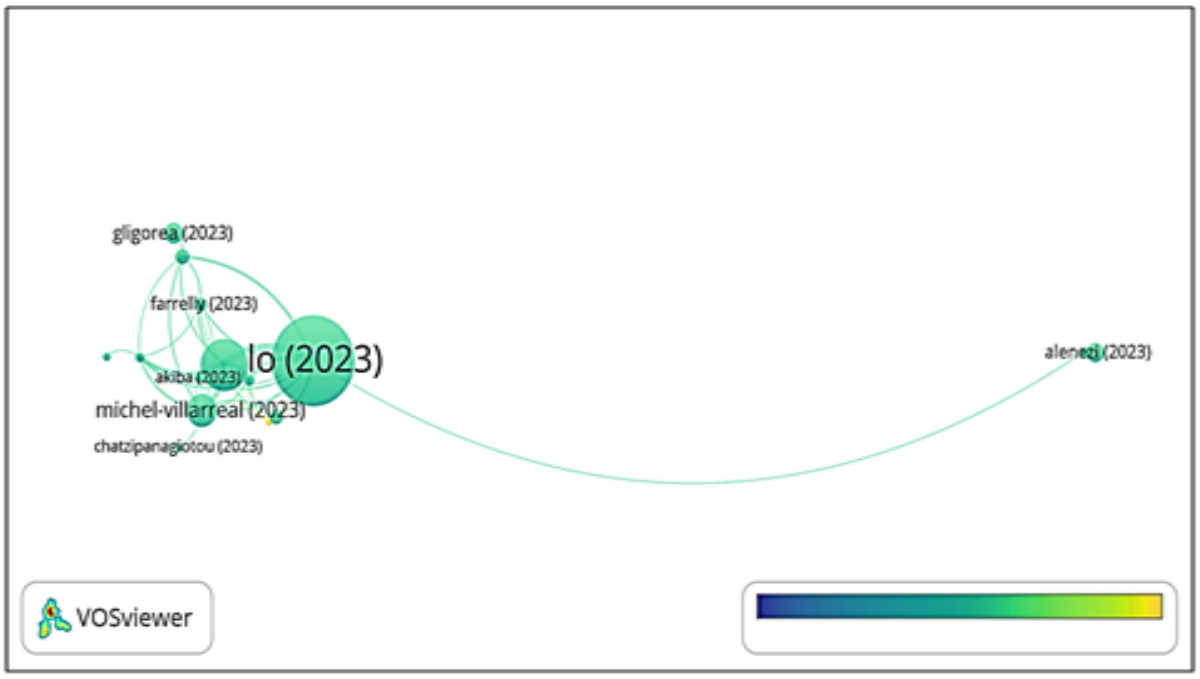

Figure 9: Productivity of Authors and Collaborations

DISCUSSION

The findings show that there has been an increase of publications on common pedagogies of teaching pupils with visual impairments in integrated primary schools since 2010. The growing of these publications on common pedagogies of teaching PwVI witnessed with the rapid increased use of technological integration in teaching pedagogies from 2015 to 2024. The findings of the recent study align with the study results by Kisanga et al (2020). Moreover, a bibliometric analysis by Kana & Hagos (2024) highlight an increased research topic related to common pedagogies of teaching PwVI which includes group discussion, peer tutoring, participatory pedagogies, role play pedagogies, sports and games, music, storytelling, and lecture pedagogy.

Other scholars on bibliometric analysis employing different scientific database have shown similar results (Kisanga et al., 2020; Kızılaslan, 2020; Nabeel et al., 2021; Alsolami & Vaughan, 2023). Whereas the findings of the current study revealed Spain, United States, UK and Greece to be the greatest countries in publishing research articles on common pedagogies of teaching PwVI in integrated schools, most sub-Saharan countries seem to lag behind. Findings in most of developing countries indicated the challenges that affect the use of pedagogies of teaching PwVI such as time management during teaching PwVI, lack of technological tools to teach PwVI, overcrowded classes, poor community support, shortage of teaching and learning resources, lack of in-service training for teachers and shortage of specialized teachers for special education.

The presence of these challenges increases alarms aligning the possibilities of exploring common pedagogies of teaching PwVI in integrated primary schools in less developed countries. This incident reveals that while less developed nations have fallen far behind in the utilization of common pedagogies in teaching pupils with visual impairments, there has been a recent increase, which is alarming, in publication shortly, which signals a good prospect in assisting pupils with visual impairments in integrated primary schools.

The findings have shown an increase in research on common pedagogies of teaching PwVI from 2022 to 2024

with a strong link between the advancement of science and technology in education and significant pedagogies of teaching PwVI. The findings of the current study are coherent with the findings from other researchers who argue technological advancement in education has a greater impact on the access to education by PwVI which affect the use of pedagogies of teaching during lesson development (Kapur, 2018; Mulenga & Muzata, 2020; Kisanga et al., 2020; Erin, 2021; Nazir et al,. 2021; Kana and Hagos, 2024). The current studies revealed that the keywords used for analysis on the common pedagogies of teaching PwVI have a strong link to the factors that affect selection of pedagogies for teaching PwVI such as lack of resources, overcrowded, poor infrastructures, poor parental perceptions to mention a few.

In response to the distribution of key words in recent years, revealed that experience as strong total links compared to others as it affect the method of teaching PwVI as shown in figure 7, this implies that as experienced teachers have been shown to have a greater degree of capacity in adopting effective pedagogical practices influencing the learning performance and academic achievement of students, experience has been a central topic of the research. Literatures show that teachers who lacked experience on teaching PwVI faced challenge on selecting a suitable approach of teaching pupils with visual impairments (Habulazi, 2016; Possi & Milinga,2017; Skinku, 2018; Mubarak & Syamsi, 2019; Kızılaslan, 2020; Munir et al., 2024).

The finding revealed that there is a strong link between technology and teacher's ability and adoption of effective method of teaching PwVI. Poor use of technology has contributed to ineffective selection of good method of teaching that foster access to education by PwVI. Study by Kapur (2018) found that teachers with technological illiteracy failed to integrate technology during teaching activities for pupils with visual impairments. Most of integrated primary schools which had limited technological expertise faced a number of challenges on selecting best pedagogies of teaching during lesson development in schools (Munir et al., 2024). Further findings indicated that pupils reported with total blind had a little chance of access to education because most of teachers unable to choose the best approach of teaching them resulting to incompetent of respective teachers to teach PwVI (URT, 2019).

This shows that most of pedagogies used in teaching PwVI in integrated primary schools are less inclusive and participatory which might hinder in achieving Sustainable Development Goals (SDGs) agenda of 2030 which emphasize on No one Left Behind in developing societies (Ruhagaze et al., 2018; Hewett et al., 2022). It is noted that technological illiteracy among teachers in teaching is viewed as one of the challenges to successful access to education by pupils with visual impairments, but one could notice the presence of little evidence, which demands the need for unceasing research about it.

Unlike the results from a current study, Kana and Hagos (2024) indicated that the majority of studies from 2010 to 2020 focus on the challenges facing students with VI and enhancement of learning materials for PwVI however give little attention to the best pedagogies of teaching PwVI. Findings from a few studies on bibliometric analysis highlight the domination of students with disability in general publications while students with visual impairments significantly lagged behind (Posi and Milinga 2017; Kisanga et al., 2020; Alsolami and Vaughan, 2023). It is noticed the increased publications from 2022, Munir et al., 2024 revealed that the majority of studies identify the dominance of poor-quality papers, and a low percentage of peer-reviewed papers have good reporting standards.

This highlights the need for authors and publishers to make an effort to produce good-quality papers. Furthermore, this study's findings indicate a strong association in co-authorship collaboration among organisations geographically close to one another. It was reported that researchers on pedagogies of teaching PwVI in integrated primary schools in Spain, the United States, the United Kingdom and Greece have strong link. The findings of the current study are in line with Alphonsine and Faustin (2024) who revealed that universities from Spain, the United States, and the United Kingdom are the most productive for publications with the highest citations and H-index on pedagogies of teaching pupils with visual impairments.

Naples (2017) indicated that United States had high publications compared to other countries, this is in line with Yoon et al., 2024 who found a strong collaboration in publications about pedagogies of teaching pupils with visual impairments among researchers from Australia with neighbours from Chile, Israel, Indonesia, Japan, Norway, and Saudi Arabia. It is noticed that most European countries had a strong emphasis on collaboration

with one another compared to sub-Saharan Africa. While Africa's agenda of 2063 which emphasizes on development of human capital and innovations by fostering access to education in Africa. It is noticed that there is little effort to achieve the goal. This is because the innovations, research, and collaborations that enhance good pedagogies of teaching PwVI are limited. Nazir et al (2021) recommends that new authors be encouraged to work together with experienced authors inside and outside the institution.

Findings show that the top ten journals on pedagogies of teaching PwVI are from developed countries in which Education Sciences, Computer and Education, Frontiers in Psychology, and Teaching and Teacher Education have remained top in publishing articles associated with the method of teaching PwVI in integrated primary schools for years and have countless effect in terms of citations (Nazir, 2021). Other authors have indicated that Education Sciences and Computer and Education be the most popular productive journals on pedagogies of teaching pupils with Visual impairments in integrated primary schools (Jamwal & Kumar, 2022). Based on this argument, it's reported that most reputable journals are from Spain, the United States, and the United Kingdom (Hewett et al., 2023).

This shows that for those researchers who wish to publish on pedagogies of teaching PwVI in journals with high impact factors, the best-recommended journal for publications. Ndibalema (2024) highlighted the best journals that are indexed and found in scientific databases such as Dimension, PubMed, web of Science, and Scopus. Most of these journals are found in developed countries which are highly cited and add value to the University for Academic Staff to publish in them. It brings alarm for developing countries that made little investment in publications. This is noticed by all top ten journals from developed countries, notifying that developing countries lack clear strategies, framework and policies for research governance and publications.

The bibliometric analysis of the top journals that focus on pedagogies for pupils with visual impairments highlights the necessity for an increase in competitive journals to improve publication rates, particularly in developing countries. The recognition of the leading journals with high citation effect offers researchers a number of platforms on which to gauge and compare their publication options effectively.

CONCLUSION AND RECOMMENDATIONS

This study reviewed global research trends in Common pedagogies for teaching Pupils with visual impairments in integrated primary schools from 2015 to 2024. It was indicated that there was an increase of publications on pedagogies of teaching PwVI from 2022 where there was integration of technology in teaching PwVI; this shows the researchers were interested in publishing about pedagogies of teaching PwVI. Different clusters were revealed during bibliometric analysis using keywords, which indicated that there is a need for researchers to conduct further investigation to explore the determinants and impacts of best pedagogies of teaching pupils with visual impairment in society knowledge and its contexts.

The findings of this bibliometric analysis show that most developing countries are in the infant stage of publications which indicates that have little investment in enhancing pupils with visual impairments in integrated primary schools. This is an indication that integrated primary schools need to reform, rethink, and invest in the best pedagogies of teaching pupils with visual impairment. Moreover, the findings of the study report limited innovations and partnerships that explore pedagogies of teaching visually impaired pupils in integrated primary schools. This study calls for researchers to collaborate worldwide widely in research publications to enhance a comprehensive understanding of the best pedagogies of teaching PwVI.

Findings from the bibliometric analysis revealed that world perspectives would harmonize the gap between developed and developing countries Bibliometric analysis of the research papers was carried out solely using the Dimension database. It is further recommended that subsequent studies on the same subject are pursued by employing additional scientific databases such as PubMed, Scopus, and Web of Science, to name a few. The study gave room to other researchers to conduct a systematic review to explore the topic related to pedagogies of teaching visually impaired pupils. Further, the current study employed empirical articles only; other researchers may employ non-empirical papers such as books, dissertations, book chapters, and Monographs to explore the common pedagogies of teaching Pupils with visual impairments.

Declarations

Ethics approval and consent to participate

The study adhered to the institution's guidelines and the Institutional Humanities and Social Sciences Research Ethics Committee - IRB (HSSREC IRB) approved it with an approval letter referenced HSSREC -2024-NOV-006 of the University of Zambia.

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Availability of data

Data will be available under special request at

Consent for publication

Not applicable

Competing interest

All authors mentioned in this work declare that they have no competing interest

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