

## **Experiences of Learners with Visual Impairments in Inclusive Schools in the Kingdom of Eswatini: A Scoping Review**

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### **Abstract:**

**Introduction:** This article reports on experiences of teachers and learners with visual impairments (LVI) in inclusive high schools in the Kingdom of Eswatini.

**Methods:** Qualitative research used face-to-face interviews, semi-structured questionnaires, document analysis and observation instruments for data collection. The study employed purposive sampling and the sample comprised six LVI, three high school principals and ten teachers. Data analysis included reading data, transcription, coding, interim analysis, and finding themes.

**Results:** Study findings illuminated the lack of professional training for teachers. Policies and school documents did not promote inclusive education and there was limited curriculum reform to implement IE policies.

**Discussion:** There is a need for professional capacitation of teacher(s) on IE. School documents, curriculum and national policies must embrace IE.

**Limitations:** The 19 participants representing the overall population was a limitation.

**Conclusions:** The researchers concluded that inclusive high school teachers must be trained and provided with suitable materials for teaching and learning.

**Key words:** inclusive education, inclusion, visual impairments, academic barriers, barriers to learning and learners with visual impairments.

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## **Introduction**

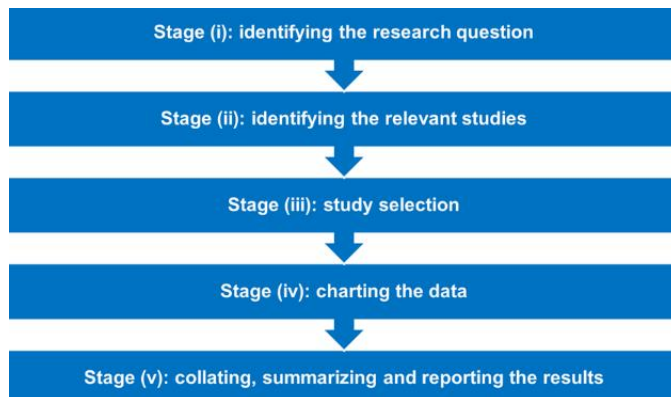
Learners with visual impairments (LVIs) are faced with a plethora of barriers in inclusive schools in the Kingdom of Eswatini. These include inadequate curriculum needs, unqualified teachers, inappropriate teaching methods, lack of assistive devices, and insufficient learning support materials (Maseko, 2021). Lack of policies and legislation on Inclusive Education (IE) exacerbates the plight of LVIs. It disadvantages them and creates the impression that they are generally underachievers (Maseko, 2021). Eswatini has a responsibility of ascertaining that the IE system does not discriminate against them.

## **1 Aim**

This study aims to illuminate the experiences of LVIs in inclusive schools in Eswatini, in order to find lasting solutions to their challenges and thus fulfil the learners' right to an equitable inclusive education system.

## **2 Method**

A scoping review is appropriate for this study because it recognises evidence on the education of LVIs in inclusive schools (Pollock, Tricco, Peters, McInerney, Khalil, Godfrey, Alexander, & Munn, 2022). This scoping review adhered to the explanation and checklist of the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). It followed a 20-point checklist for fundamental reporting items (Tricco et al., 2018) and the five-stage methodological framework set out by Arksey and O'Malley (2005).



*Figure 1.* The 5-stage scoping review (Arksey & O'Malley, 2005).

*2.1 Identifying the research question – Stage (i)*

The scoping review aimed to outline the available research on the education of LVIs in inclusive schools. The researchers hoped to address the following research questions:

- What are the experiences and challenges faced by learners with visual impairments accessing education in inclusive schools?
- What components increase the accessibility of the teaching and learning process for the learners with visual impairments in inclusive schools?

*2.2 Identifying the relevant studies – Stage (ii)*

Conceptualising a scoping review demands a clear declaration that will propel the scope of the review, as purported by Pollock et al. (2022). This study discussed how LVIs experience teaching and learning in inclusive schools.

A literature search was administered with the aid of the researchers' personal librarian from the university library's section. A threefold approach was used, beginning with a restricted number of cross-database keywords that were gleaned from other studies that are similar to the topic as advocated by (Khalil et al., 2016). This was succeeded by a literature search in four electronic databases, namely Google Scholar, ERIC, Web of Science and Science Direct. Effective systematic research requires the use of multiple databases to broaden the scope of the study (Bramer, Rethlefsen, Kleijnen, & Franco, 2017) and it improves the credibility of the research (Vassar et al., 2017). The third leg involved selecting final keywords from the reference lists of similar studies and to hand-search paper-based journals (Tricco et al., 2018). The keywords that were used included 'learners with visual impairments', 'visual impairments', 'inclusive education' and 'inclusion'. The database search is reflected in the following reports that had an overall inceptive list of 810 results.

*Database initial search*

Number or results:

Eric 23  
Science Direct 194  
Google Scholar 295  
Web of Science 298  
Total 810

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Table 1

*Recent reviewed studies on experiences of learners with visual impairments in inclusive schools*

<u>Author(s) and year</u>	<u>Participants with visual impairments</u>	<u>Participants without visual impairments</u>	<u>Salamanca statement in discussion</u>	<u>CRC or CRPD in discussion</u>	<u>Main focus</u>
Poikola et al. (2024)	Yes	Yes	Yes	Yes	Students' views of inclusive education.
Guanoluisa et al. (2022)	Yes	Yes	No	No	Experiences of the teaching and learning process of LVIs.
Bavlı, Korumaz & Akar (2020)	Yes	Yes	No	No	Improving the professional standards and materials used in inclusive schools.
Ralejoe (2021)	Yes	Yes	No	No	Learners' perceptions about inclusive education.
Baykaldı, Corlu & Yavaş (2024)	Yes	No	No	No	Experiences of high-school mathematics teachers who taught learners visual impairments.
Subban et al. (2022)	Yes	No	Yes	No	Experiences of inclusion.

The sources were then imported into Excel to eliminate duplicates and to trim selected studies. After the initial selection, seventy-nine (79) sources remained for further enquiry.

The importance of learners' participation and opinion on IE emerged from educational research and the human rights perception provided by The Convention on the Rights of Persons with Disabilities (CRPD) (Messiou, 2019). Messiou highlights the need for learners' voices to be acknowledged and heard. Learners' needs are usually argued by professionals and adults, when the learners are the people with first hand experiences (Messiou, 2019). Table 1 revealed an imbalance in study reviews relating to their human rights perception supported by the Salamanca Statement, CRC and CRPD. The reviews included LVIs and learners without visual impairments. Finally, the reviews focused on different areas that included experiences and perceptions (Subban et al., 2022; Ralejoe, 2021), improving the professional standards and materials used in inclusive schools (Bavlı et al., 2020), and students' views on inclusion (Poikola et al., 2024).

### *2.3 Selecting the studies – Stage (iii)*

Stage (iii) yielded a total of 79 studies that were re-read and subjected to further inclusion and exclusion criteria. Disagreements on which studies to include and which to exclude were discussed by the researchers and resolved. The following were the inclusion and exclusion criteria:

1. Studies published between 2015 and 2024 – included.
2. Research not written in the English language – excluded.
3. Learners at the primary and high-school level, their teachers and parents – included.
4. Articles that explored other disabilities and excluded visual impairments – excluded.
5. Studies that explored inclusive education and learners with visual impairments – included.
6. Articles that explored visual impairments beyond the education system – excluded.
7. Articles within the education domain – included.

Subsequent to the selection of the relevant studies, four (4) different themes emerged: “perceptions or perspectives”, “teaching materials and professional development”, “support”, and “content of topic”. Under the theme of “perceptions or perspectives”, studies that pertained to the perspectives and perceptions of learners, their teachers and their parents on IE were included. The sub-theme “perceptions or perspectives of teachers and parents about the inclusion of LVIs” emerged under “perceptions or perspectives”. The theme “teaching materials and professional development” concerned studies about the materials used in the teaching process. “Professional development” referred to the professionalism and professional growth of their teachers. The theme “support” entailed all forms of support made available to LVIs that ultimately propelled them to a successful IE. The theme “content of topic” dealt with academic subjects taught within the curriculum of the inclusive school.

#### *2.3.1 Results of studies from databases and registers*

Results of recorded:       Databases (n=728)  
                                     Registers (n=0).

#### *2.3.2 Records removed before screening*

Duplicate records: (n=39)  
Records marked as ineligible by automation tools: (n=266)  
Records removed for other reasons: (n=325)  
Records screened: (n=79)  
Records excluded: (n=19)  
Reports sought for retrieval: (n=79)

Records not retrieved: (n=0)

Reports assessed for eligibility: (n=79)

#### 2.3.3 Reports excluded

Not addressing: (n=27)

Wrong domain: (n=23)

New studies included in review: (n=29)

Reports on new included studies: (n=29)

#### *2.4 Data charting – Stage (iv)*

Data extraction is described as the process of capturing, standardising, and structuring data from book chapters, journals, and dissertations. (Schmidt, Olorisade, McGuinness, Thomas & Higgins, 2021). The researchers of this study developed a data-extraction instrument to assist them in attaining and extracting independent and consistent data reports. The instrument for data extraction encompassed author(s), year of publication, country, participants, number of participants, focus of the study and data collection instruments. Data was extracted independently by the two authors and the first author reviewed 100% of the extracted studies.

#### *2.5 Collating, summarising and reporting the results – Stage (v)*

The data was extracted and thematically analysed. The authors conducted the initial data coding inductively (Creswell & Creswell, 2018). A critique of the 100% studies was performed by the first author and then thematic analysis was used for the data analysis. This process yielded insightful and systematic data recognition and classification into relevant themes, with the aim of addressing the objectives of the scoping review (Nowell et al., 2017).

### **3 Results**

The scoping review reports were displayed in a tabular format and included a total of 29 studies. The identified and reviewed studies portrayed the experiences of LVIs in inclusive schools. The studies reviewed were published between 2015 and 2024. Data was collected from studies from the following countries: United Kingdom, Turkey, Ghana, Zambia, Indonesia, Lesotho, Thailand, Japan, the United States of America, Ecuador, Ethiopia, South Africa, Poland, and Eswatini, and they were all from the field of education. Study participants varied from one (1) to 1525 participants and all the articles were organised according to author, country, year, participants, number of participants, focus of the study and data collection instruments.

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*3.1 Summary of eleven (11) reviewed articles under the theme Perspectives or perceptions of LVIs and their teachers*

Table 2

*A summary of the eleven (11) reviewed articles under the theme “Perspectives or perceptions of LVIs and their teachers”*

<u>Author, country, year</u>	<u>Participants</u>	<u>Number of participants</u>	<u>Focus of the study</u>	<u>Data collection instruments</u>
Attachoo & Sitthitikul. Thailand. (2020)	Learners with visual impairments.	9	To investigate the fundamental meaning of English Language Learning (ELL) in inclusive classrooms as deduced from the perceptions of LVIs.	Data was collected from in-depth interviews.
Guanoluisa, Claudio, Cevallos, Colcha, Taipe & Pilatasig. Ecuador. (2022)			To contribute to the professional development of teachers of English as a Foreign Language, since they work with LVIs, and to analyse the perceptions of two LVIs and their teacher of the teaching and learning process in a public school.	Data were collected through observation and interviews.
Haegle & Lieberman. United States of America. (2016)	Physical education teachers who teach LVIs.	51	To comprehend the recent experiences of physical education teachers who teach LVIs in the United States of America.	Questionnaires were used for data collection.
Ralejoe. Lesotho. (2021)	Learners with visual impairments and learners without visual impairments.	8	To investigate the conceptions of learners about inclusive education in relation to learners with visual impairments.	Two focus-group discussions and individual interviews were conducted.
Belay & Yihun. Ethiopia. (2020)	Learner with visual impairments.	1	To explore the opportunities and challenges in an inclusive school for LVIs in Bedlu.	Interviews and observation were used.
Tonegawa. Japan. (2022)	Learners with visual impairments, learners without visual impairments, parents of learners with visual impairments, teachers, principals, officers and former director of the	47	To examine and analyse the inclusive education of learners with impairments, particularly learners with visual impairments juxtaposing them with learners in special schools.	Semi-structured individual interviews, focus-group discussion, school observations, and document reviews were used for data-collection.

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	Regional Education Office.			
Morelle & Tabane. South Africa. (2019)	Teachers of learners with visual impairments, parents of learners of visual impairments, a specialist teacher, and principals.	13	To explore the barriers experienced by LVIs in South African mainstream township schools, with the aim of illuminating the specific support that can benefit visually impaired learners in their daily classroom activities.	Semi-structured interviews and observations were used.
Szumski, Smogorzewska & Grygiel. Poland. (2020)	Learners without disabilities.	1525	To explore whether the principled identification of learners in middle school enable us to envision their perspectives toward learners with impairments.	Questionnaires were applied.
Kantavong, Sujarwanto, Rerkjaree & Budiyanto. Thailand. (2017)	Buddhist teachers in primary schools in Thailand and Muslim teachers from Indonesia.	337	To contrast the working conditions of inclusive education teachers in mainstream classrooms in Thailand; and to determine teachers' opinions on the management of inclusive classrooms.	A set of questionnaires were used to gather data.
Soeharto, Singh & Afriyanti. Indonesia. (2024)	Pre-service teachers from private and public universities across Indonesia took part.	459	This research explores the relations between attitudes of pre-service teachers' towards inclusive education, and teaching for innovation.	The Inclusive Education Scale and the Teaching for Creativity Scale (Indonesian version) were used to gather information.
Asamoah, Ofori-Dua, Cudjoe, Alhassan & Nyarko. Ghana. (2018)	Learners with visual impairments, learners without visual impairments and teachers in inclusive schools.	69	This research aimed to explore the perceptions of the LVIs, other learners without impairments, and teachers within an inclusive school.	Semi-structured in-depth interviews were conducted.

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*3.2 Summary of seven (7) reviewed articles under the theme “Teaching materials and professional development”*

Table 3

*A summary of the seven (7) reviewed articles under the theme “Teaching materials and professional development”*

<u>Author, country, year</u>	<u>Participants</u>	<u>Number of participants</u>	<u>Focus of the study</u>	<u>Data collection instruments</u>
Bavli, Korumaz & Akar (2020)	Teachers, a principal and learners with visual impairments.	16	To upgrade the resources and devices used in an inclusive school and to improve teachers' skills and professionalism.	Two semi-structured focus-group interviews, one focus-group interview, and a face-to- face interview.
Ali. Ghana. (2021)	Participants.	5	The research aimed to introduce student teachers with visual impairments to basic assistive technology materials.	Semi-structured interviews.
Keleş, Uzun & Yalçın. Turkey (2023)	Learners with visual impairments.	2	To map out a lesson plan that captivates the learners in an inclusive classroom and to embrace their unique individual learning needs.	Semi-structured interviews were conducted.
MacKenzie, Owaineh, Bower & Ozkaya. United Kingdom (2023)	Mothers and women.	23	This study explored how mothers and teachers encounter the inclusive education of learners with impairments in schools and vocational training centres.	Semi-structured interviews and focus groups.
Simalalo, Gasa & Muzata. Zambia (2022)	Teachers.	22	This research investigated the barriers in the training of teachers for learners with visual impairments for the expanded core curriculum.	Semi-structured interviews and semi- structured questionnaires.
Baykaldi, Corlu & Yabaş. Turkey (2024)	Mathematics teachers with experience in teaching learners with visual impairments.	8	This research explored the actions and perceptions of mathematics teachers as they taught LVIs.	Semi-structured interviews were conducted.
Loveys & Butler. United Kingdom (2023)	Teachers of learners with visual impairments and learners with visual impairments.	9	To explore the role of studying emerging technologies in special educational needs, education, like screen readers, other Braille forms and tablets.	Data were collected by face-to-face interviews.

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3.3 Summary of four (4) articles reviewed under the theme “Content of topic”

Table 4

*A summary of the four (4) articles reviewed under the theme “Content of topic”*

<u>Author, country, year</u>	<u>Participants</u>	<u>Number of participants</u>	<u>Focus of the study</u>	<u>Data collection instruments</u>
Ediyanto, Zulkipli, Sunandar, Subanji, What & Iliško. Indonesia (2023)	17 selected articles on mathematics learning for learners with vision impairments, autism, and hearing impairment.		This study aimed to investigate strategies for learning mathematics for learners with hearing impairments, autism and visual impairments.	This research was executed by selecting and categorising scientific articles published in journals from 2011 to 2022.
Piper, Bulat, Kwayumba, Oketch & Gangla. Kenya (2019)	Principals, Teachers, and learners with visual impairments.		To investigate the distribution of literacy skills in inclusive and special schools	Interviews.
Zaki & Khan. India (2021)			To analyse the criticality of inclusive education in English as a Second Language (ESL) and shed light on the learning mechanisms of teaching ESL to learners with visual impairments, particularly the state of inclusive education in India.	A comparative investigation of the learning procedures of LVIs and other learners without impairments.
Hayes & Proul. United Kingdom (2023)	Qualified teachers of learners with visual impairments.		To explore how the access of LVIs to the learning of mathematics and science can be advanced in mainstream classrooms.	Data were collected through two interviews.

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3.4 Summary of seven (7) articles reviewed under the theme “Support”

Table 5

*A summary of the seven (7) articles reviewed under the theme “Support”*

<u>Author, country, year</u>	<u>Participants</u>	<u>Number of participants</u>	<u>Focus of the study</u>	<u>Data collection instruments</u>
Yuwono, Kamil, Rahardja & Juma Abdu. Indonesia (2017)	Teachers and counsellors in inclusive schools and learners with visual impairments.		The study investigated the purpose and consequences of guidance and counselling programmes on the education of LVIs in inclusive schools.	Questionnaires, interviews, and observation were employed to collect data.
Tseeke. Lesotho (2021)	Teachers.	6	To investigate teachers’ understanding of self-efficacy regarding the education of the LVIs in mainstream secondary schools.	Data were collected through classroom observation and face-to-face interviews.
Manitsa & Doikou. United Kingdom (2020)		17 academic articles	To synthesise articles which investigated the social support for learners with visual impairments in schools.	
Manitsa. United Kingdom (2023)	Teenagers between the ages of 12 and 14 years with and without visual impairments participated in the study.	37	This study investigated the various characteristics of social inclusion in school, in order to enhance the social inclusion of adolescents with visual impairments.	A questionnaire was used to collect the data.
Alraddadi & Zebehazy. Canada (2023)	Learners with and without visual impairments, Mainstream teachers.	25	To explore the scope which mainstream teachers implement practices that advance inclusive education of LVIs using self-regulated learning (SRL) as a framework.	Data were collected using questionnaires and observation.
MacKenzie, Bower & Owaineh. United Kingdom (2020)	Mothers with children with impairments who used an education centre for children with impairments. Mothers who used the vocational training centre were also included.	12	This study was included the inclusive education of learners and the youth with impairments in schools and vocational centres in Palestine.	Two semi-structured focus groups.
Le Fanu, Schmidt &			Eleven countries had their education management	Observation, focus-group discussion,

Virendrakumar.  
United Kingdom  
(2022)

information systems  
probed. They included  
Cameroon, Ghana, Kenya,  
Liberia, Malawi, Mali,  
Nigeria, Senegal, Sierra  
Leone, Uganda and  
Zambia.

semi-structured  
interviews,  
questionnaires and  
document analysis  
were used to gather  
data.

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## 4 Discussion

### *4.1 How the literature maps the experiences and challenges faced by learners with visual impairments and their teachers in inclusive schools in the Kingdom of Eswatini*

A total of eleven (11) studies looked into the experiences of LVIs and their teachers in an inclusive school under the theme of “perceptions, perspectives or attitudes of LVIs, their teachers and their parents in an inclusive school”. Out of the eleven (11) reviewed studies, four (4) (Guanoluisa, Claudio, Cevallos, Colcha, Taïpe, & Pilatasig, 2022; Haegele & Lieberman, 2016; Kantavong et al., 2017; and Soeharto, Singh & Afriyanti, 2024) were concerned with teachers’ attitudes towards the education of LVIs. Only one (1) (Szumski, Smogorzewska, & Grygiel, 2020) dealt with the attitudes of LVIs in the inclusive classroom. The remaining six (6) studies were all concerned with the perceptions and experiences of LVIs in an inclusive school. Out of the 11 studies, 6 were qualitative and 5 were quantitative.

#### 4.1.1 Theme 1 – The perceptions or perspectives of LVIs and their teachers about inclusive education

A quantitative study that aimed to gain intuition into the perspectives and experiences of 51 teachers who taught physical education to LVIs in 35 schools in the United States was conducted (Haegele & Lieberman, 2016). This study collected data with questionnaires using closed-ended and short-response open-ended questions. The study applauded the schools for employing teachers who were trained in physical education and for using a curriculum that is at par with national standards. The schools offered sports to learners after school, thus increasing the chances for learners to perfect their extra-curricular skills. It illuminated insufficient authentication on assessments in adapted physical education, thus highlighting a necessity for supplementary teacher training to teach LVIs and other forms of disabilities. Study findings disclosed that the schools offered a wide range of sports which allowed the LVIs a chance to choose sports which suited them. The need for teacher training was noted.

The researchers further reviewed a qualitative study that aimed to determine the perceptions about the inclusion of eight (8) LVIs into the mainstream in a secondary school in Lesotho (Ralejoe, 2021). The participants were LVIs and learners without visual impairments. One focus group for learners without visual impairments was formed, and another for LVIs. These were succeeded by interviews. It was found that all the participants were undecided about the transition of LVIs into the school. They cited barriers such as inadequate resources and inaccessible infrastructure that was not universally designed to meet the needs of the learners with impairments as factors that deterred integration. The LVIs, on the other hand, cited exclusion from extra-curricular activities and random exclusionary words used by some teachers in the school as a barrier, thus implying that they would be better placed in special schools. On the contrary, the learners also cited advantages of having LVIs in a mainstream school. They recognised peer tutoring, a slower teaching pace and improved social interactions with peers as some of the advantages. As far as these benefits were concerned, the learners embraced the inclusion of LVIs in the mainstream. This study made it clear that the absence of resources and accessible infrastructure, exclusive language and a lack of sports can deter and derail the integration of LVIs into inclusive classrooms.

*Sub-theme 1. How teachers and parents of LVIs experience inclusion in inclusive schools?*

Another study investigated how the mothers and teachers of LVIs and other impairments experienced inclusion in schools in Palestine (MacKenzie, Owaineh, Bower & Ozkaya, 2023). Data were collected using semi-structured interviews and focus-group discussions with 17 participants. The study findings revealed that successful inclusion depended on sufficient resources, trained teachers, professional development, and the absence of shame and stigma associated with disability. The fundamental conclusion was that capability could be achieved given conditions of equality, structural and systematic justice that hugely relied on the mothers' and teachers' efforts to ensure successful inclusion into the schools.

**4.1.2 Theme 2 – Teaching materials that help in the effective teaching and learning of LVIs**

Assistive technologies are widely used for the education of learners with impairments. There are various perspectives on the services provided by the assistive devices for LVIs. A mixed-method study investigated the significance of emerging technologies for learners in inclusive schools, in the form of screen readers, multiple Braille forms, and tablets – all of which granted independence to LVIs (Loveys & Butler, 2023). The participants in this study comprised four

(4) learners and five (5) teachers and the focus of the research was to comprehend learners' and teachers' perceptions of the limits of assistive technologies in granting independence to LVIs in the inclusive process. The conclusion unearthed constructive perspectives on the inclusion of assistive technologies for LVIs that awarded them with freedom and the need for all stakeholders to be constantly kept abreast of all new trends.

All teachers should ideally be taught teaching strategies and methods for generating educational materials that will meet the unique needs of LVIs (Keleş, Uzun, & Yalçın, 2023). A study that aimed to design lesson plans and to meet their unique needs in the study of plant life science was conducted in an inclusive class. In this reviewed study, the teachers and the LVIs had a workshop to determine the learning outcomes of the subject area. Unique individual teaching materials were designed by the teachers and the LVIs participated in this stage. Finally, the LVIs were taught according to the designed materials in line with the 5E learning model. Study findings proved that the educational materials successfully contributed to the unique needs of the LVIs.

#### 4.1.3 Theme 3 – Professional development

A qualitative Erasmus research project intended to upgrade the professional and personal skills of the teachers engaged 16 LVIs, their teachers and their principal as participants in focus-group discussions and interviews was undertaken (Bavlı, Korumaz & Akar, 2020). Study findings were marked by empathetic and mindful teachers towards the LVIs. These teachers had also improved communication towards the LVIs and gained confidence in using teaching materials, assessments, teaching methods, and improved their life skills. This was the result of the exposure of the teaching staff, as they shadowed and observed other teachers, and experienced various teaching materials in other schools. This inspiration led them to begin creating teaching materials for learners with disabilities and, in turn, improving their professionalism and skills. The teachers and learners with disabilities were also motivated to work together towards a successful IE system.

#### *4.2 How the literature maps the components that increase accessibility of the teaching and learning process for LVIs in inclusive schools*

##### 4.2.1 Theme 1 – Support

The shortage of educational materials like computers, large print materials, tape recorders and Braille derails the learning process and tends to breed emotions of doubt, low self-worth and failure in teachers. A study on teachers' perceived self-efficacy in responding to LVIs unique needs in mainstream secondary schools, collected data from six (6) teachers through interviews and classroom

observation (Tseeke, 2021). This revealed that substantial experience of teaching LVIs in inclusive schools resulted in high self-worth levels among the teachers, whilst low self-worth levels could be accredited to insufficient materials, training, knowledge, and support. This implied that persons with high self-worth levels were more successful in the IE process. The findings disclosed that teachers' perceptions had an impact on their beliefs and on their potential to teach LVIs. A lack of adequate knowledge led to insufficient self-worth among the teachers.

LVIs usually have emotional challenges and struggle building and maintaining relations. Support rendered to the LVIs have a constructive influence on their performance and their holistic beings (Manitsa & Doikou, 2020). LVIs sought and valued social support, hence they valued practical assistance, empathy and cooperation which ultimately has a positive bearing on their academic success and inclusion. The implementation of social programmes and interventions in school for LVIs is ideal and mobilises towards successful IE.

The CRPD endorses the entitlement of children with impairments to an education that is environmentally, consequentially, locationally, longitudinally, and educationally inclusive (United Nations, 2006). Policies and legislation on the inclusion of learners with disabilities is a commendable form of support. A study that sought to determine to what extent LVIs in designated sub-Saharan African settings access IE, as perceived by General Comment 4 on Article 24 of the CRPD was carried out (Le Fanu, Schmidt & Virendrakumar, 2022). The study provides substantiation that LVIs in various sub-Saharan African settings fail to receive such provisions. To advance this circumstance, developers need to applaud the unique educational needs of these learners and inculcate learner-centred, contextually adequate levels of delivery. This will necessitate constant educational investments, together with variations to developmental formats and arrangements. In Ghana (Asamoah et al., 2018) and South Africa (Morelle & Tabane, 2019), LVIs communicated insufficient or absent individual attention from IE teachers. Often, the teachers opted to delegate this sensitive task to other learners, who either failed to help, or did it reluctantly. On the contrary, Ceralli (2019) found cooperative learning in primary schools. On the contrary, a study found cooperative learning in primary schools in Senegal whilst some teaching staff in Senegal volunteered their free time to teach the learners, in this way granting them access to an expanded curriculum, (Ceralli, 2019).

Data revealed that females with visual impairments were unreasonably omitted from primary schools in some countries. Census data from 13 countries (Wodon, Male, Nayihouba, & Smith, 2019) indicated that LVIs were less likely to enrol in school than their peers and, if enrolled, there were higher chances of them dropping out of primary school early. Female LVIs, although less likely than males to enrol in education, generally fared better once enrolled. Wodon et al.

(2019) discovered an alarming disability gap between LVIs and other non-impaired. The inadequacy in the implementation of IE legislation and policies led to these shortfalls, which gave rise to an inefficient education system. Support from governments on the implementation of all inclusion policies and legislation could spell a successful IE system globally.

#### 4.2.2 Theme 2 - Content of topic or academic subjects

Mathematics and science are often inaccessible to LVIs and this often leads to their underperformance. A study, related that LVIs often performed below average in these subjects, causing them to ultimately be underrated in science, technology, engineering and mathematics (STEM) careers (Hayes & Proul, 2023). Their research aimed at exploring how LVIs access the Mathematics and Science curriculums in mainstream schools. Data was collected from two interviews with trained teachers of LVIs and the findings revealed the significance of classroom modifications, such as extra time and hands-on experience, to propel LVIs to succeed in Mathematics and Science. Since these discoveries are deliberated in unison with policy and practice, this implied that teachers in mainstream schools should be trained in handling LVIs.

IE places learners with Special Educational Needs (SEN) alongside learners without impairments and expects them to meaningfully participate in the education process. A study that aimed to investigate mathematics strategies for learners with SEN confirmed that LVIs should be accommodated by providing them with learning media and vivid instructions (Ediyanto et al., 2023). SEN teachers can offer support to mathematics teachers by alerting them of the strengths, weaknesses and development stage of each individual learner, to aid in effectively learning mathematics. This sums up the dire need of support from teachers and the need of teachers to be equipped with SEN training.

### **Conclusions**

This research harmonised the findings of 29 articles published from 2015 to 2024, that were reviewed on “The experiences and challenges faced by learners with visual impairments accessing education in inclusive schools” and “The components that increase the accessibility of the education process for LVIs in inclusive schools”. It emerged that the perceptions of LVIs and their teachers lacked support and this led to an unsuccessful IE because most LVIs were motivated by support. Insufficient resources, inaccessible infrastructure, exclusive language and the lack of proper budgets derail and delay IE. Ideally, parents with children with visual impairments must be educated on their children’s disability to understand how best they can help and support them. Professional development must be incorporated into tertiary level curriculum because all teachers will possibly teach LVIs within their careers. Inadequate



teacher-training, lack of basic knowledge on assistive devices lead to low levels of self-worth for the teachers. Teachers should be capacitated on orientation and mobility, and Braille as a way of preparing them for supporting the LVIs. The subject teachers should be acquainted with learning instructions, so as to be able to craft relevant learning materials that suit LVIs unique needs. Teachers qualified in SEN must be encouraged to help the other teachers with training on the strengths, weaknesses and developmental stages of LVIs. Teachers should also be able to make curriculum modifications to accommodate all learners.

Finally, guidance and counselling principles make positive contributions for the teachers and LVIs. The empathy, cooperation and social support they gain through Life Skills positively impact(s) on them.

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