Students' and Teachers' Perceptions of Pedagogical Strategies for Enhancing English Performance among Students with Hearing Impairment in Wajir Special Secondary School, Kenya

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ABSTRACT

This study examined learners' and teachers' perceptions of pedagogical strategies for enhancing English performance among students with hearing impairment (HI) at Wajir Special Secondary School, Wajir County, Kenya. Specifically, it investigated perceptions of the strategies used in teaching English, their contribution to learners' comprehension and classroom engagement, and the relationship between these perceptions and actual English performance. Guided by Gardner's (1983) Multiple Intelligences Theory, the study adopted an exploratory mixed-methods case study design. The target population comprised 53 participants: 50 students with HI, two English teachers and one school principal. Census sampling was employed. Data were collected using student questionnaires, semi-structured interviews, classroom observation checklists and document analysis guides. Quantitative data were analysed using descriptive statistics, while qualitative data were analysed thematically through transcription, coding and theme development. Findings were integrated through triangulation and a joint display to establish convergence, complementarity and divergence across data sources.

The findings indicated that 90.0% of students agreed or strongly agreed that sign language enhanced their comprehension of English lessons, while 84.0% reported that visual instructional materials improved information retention. Similarly, 84.0% indicated that pedagogical approaches employed by teachers enhanced classroom engagement. Teachers' interviews revealed that combining Kenyan Sign Language (KSL), gestures and written English supported vocabulary development, spelling and sentence construction. However, only 64.0% of students indicated that technology made English lessons easier. Classroom observations confirmed active participation, although understanding and task completion varied. Document analysis revealed persistent weaknesses in grammatical accuracy, sentence clarity and coherence. Examination records showed that 42.0% of students attained low performance, 46.0% average performance and 12.0% high performance.

The study concludes that KSL, total communication and visual instructional materials are perceived as important in facilitating English comprehension and learner engagement. However, positive perceptions do not necessarily translate into high academic achievement. It recommends increased provision of adapted instructional materials and accessible educational technologies, alongside continuous teacher professional development in KSL, differentiated instruction and explicit English literacy teaching.

Keywords: Learners' and Teachers' Perceptions; Pedagogical Strategies; English Performance; Hearing Impairment; Kenyan Sign Language.

INTRODUCTION

Mastery of English is essential for academic achievement, social participation, and future employment. However, students with hearing impairment (HI) face barriers to English language acquisition, including limited access to auditory information, delayed language exposure, and inadequate instructional adaptations.

Consequently, teachers' pedagogical strategies play an important role in supporting English learning and academic performance.

Globally, research highlights the importance of inclusive and bilingual approaches in improving English literacy among students with HI. In the United States, Mayer and Leigh (2010) established that integrating American Sign Language (ASL) with written English supports reading and writing development. In the United Kingdom, visual scaffolding, captioned texts, and explicit grammar instruction have been associated with improved English achievement (Herman & Roy, 2023). Similarly, Australian studies have highlighted the contribution of sign-supported instruction and digital visual aids to learner engagement and English performance (Hyde et al., 2024).

Across Africa, challenges persist in implementing appropriate instructional interventions. In South Africa, visual materials and South African Sign Language have been associated with improved literacy outcomes (Mahlobo & Magongwa, 2022). In Ghana, Obosu and Adigun (2026) advocated bilingual-bicultural approaches to support deaf learners' English literacy. In East Africa, teachers' sign language proficiency and visual instructional materials have been linked to improved reading and classroom engagement in Uganda and Tanzania (Okwaput, 2026; Mkumbo & Kisanji, 2023). In Kenya, Wangui et al. (2023) highlighted the potential of computer-assisted learning in developing writing skills among learners with HI.

Despite policies supporting inclusive education, Kenyan students with HI continue to experience challenges, including limited teacher proficiency in Kenyan Sign Language (KSL), inadequate instructional materials, and insufficient pedagogical adaptations. Previous studies have examined policy implementation (Mweri, 2022), assistive hearing devices and academic achievement (Masayi, 2024), and instructional challenges affecting inclusive learning (Atieno et al., 2024).

Nevertheless, limited empirical evidence exists on the influence of pedagogical strategies on English performance among students with HI in Wajir County. Therefore, this study examined the influence of pedagogical strategies on English performance at Wajir Special Secondary School to generate evidence that could inform effective instructional practices and resource allocation.

Statement of the Problem

Wajir Special Secondary School is the only secondary school in Wajir County serving students with hearing impairment (HI). Despite its critical role, students continue to record poor performance in English, a compulsory subject and the main language of instruction. This limits their academic progression, access to higher education, professional training and future employment opportunities, perpetuating social and economic marginalization. However, there is insufficient empirical evidence on how students with HI perceive the pedagogical strategies employed in teaching English and their perceived contribution to English learning and performance in this context. This knowledge gap makes it difficult to understand learners' instructional experiences and develop effective, context-specific teaching interventions. Therefore, the study sought to examine students' perceptions of the pedagogical strategies employed in teaching English and how they perceive these strategies to influence their English performance at Wajir Special Secondary School.

Theoretical Framework

Gardner's (1983) Multiple Intelligences Theory guided this study because it recognizes that learners possess diverse abilities and may benefit from varied instructional approaches. The theory was relevant in examining students' perceptions of the pedagogical strategies employed by teachers, including visual aids, sign language, demonstrations, collaborative activities and educational technology. It provided a framework for understanding how learners perceived the usefulness of these varied instructional approaches in supporting English comprehension, vocabulary development, information retention and classroom participation. Furthermore, the theory helped explain the importance of diversifying instructional strategies to accommodate learners' different communication and learning needs. However, since the theory does not directly explain sign language acquisition or bilingual literacy development, its application was limited to understanding learners' perceptions

of diverse pedagogical approaches rather than the linguistic processes underlying English literacy development.

REVIEW OF RELATED LITERAUTURE

Sign Language Instruction and English Literacy Development

Sign language plays an important role in providing accessible instruction and supporting English literacy development among Deaf learners. Mweri (2014) argued that Kenyan Sign Language (KSL) should be recognized as a language of instruction in schools for Deaf learners rather than relying predominantly on oral communication approaches. He observed that the limited recognition of KSL in classroom instruction restricts learners' access to knowledge and meaningful participation. Similarly, Aura, Venville, and Marais (2016), in a study involving 60 Deaf learners from four residential schools in Kenya, established a significant positive relationship between KSL proficiency and English literacy skills. Their findings suggest that competence in KSL can provide a linguistic foundation for developing written English. However, the correlational nature of their study did not establish a causal relationship between KSL proficiency and English literacy. Furthermore, the study focused on upper primary learners, leaving the experiences of secondary school learners less explored.

Bilingual-Bicultural Approaches to Deaf Education

Bilingual-bicultural education recognizes sign language as an accessible language of instruction while promoting written English as an additional language. Evans (2004), through case studies of Deaf learners in bilingual educational settings, found that using sign language to explain concepts and connecting meanings to written English supported literacy development. However, the author highlighted inconsistencies in implementing bilingual teaching practices. In the Kenyan context, Mweri (2023) further emphasized the importance of early KSL acquisition and adopting bilingual approaches across the curriculum. More recently, Kalla (2024), in a study involving seven schools for Deaf learners in eastern and central Kenya, found that teachers used visual resources and differentiated instructional approaches to support English reading and writing. Nevertheless, limited teacher knowledge, inadequate resources, and insufficient opportunities for learner interaction and scaffolding constrained literacy development. These findings demonstrate that recognizing KSL as a language of instruction must be accompanied by effective teaching practices that explicitly connect sign language knowledge with written English. The present study extends this discussion to secondary education by examining how teachers at Wajir Special Secondary School integrate sign language and other pedagogical strategies into English instruction.

Total Communication and Multimodal Instructional Strategies

Total communication involves using different communication modes, including sign language, gestures, speech, fingerspelling, and written language, to facilitate interaction and learning. Such approaches can provide multiple avenues for presenting English concepts and supporting learner participation. However, the effectiveness of total communication depends on the linguistic competence of teachers, consistency in communication, and the accessibility of the strategies employed. Aura et al. (2016) noted the growing emphasis on bilingual-bicultural approaches over total communication, particularly because combining communication modes does not necessarily guarantee access to complete and grammatically appropriate languages. Similarly, research by Mayer and Trezek (2020) identified limited empirical evidence on literacy outcomes in sign-bilingual programmes, highlighting the need for further investigation into effective classroom practices. Therefore, teachers need to use communication strategies purposefully to ensure that learners access meaningful linguistic input rather than merely combining different communication modes. This study examined how teachers employed sign language, gestures, visual aids, and written instruction to support English learning among students with hearing impairment.

Explicit Vocabulary Instruction and English Language Development

Vocabulary development is essential for reading comprehension, sentence construction, and written communication. Deaf learners may experience difficulties acquiring English vocabulary where exposure to

accessible language and explicit vocabulary instruction is limited. Antia et al. (2021) investigated explicit and contextual vocabulary instruction among Deaf and hard-of-hearing children and found that combining direct teaching, practice activities, reading, and meaningful language experiences improved vocabulary acquisition and the use of newly learned words. Similarly, Birinci and Sarıçoban (2021), in a study involving 80 Deaf learners in Turkey, established that combining sign language with visual materials was more effective in teaching English vocabulary than relying on sign language instruction without additional visual materials. Although these studies demonstrate the potential of explicit and visual vocabulary instruction, their findings may not be directly generalizable to Kenyan secondary school learners because of differences in language backgrounds, educational contexts, and learner characteristics. Consequently, the present study examined how teachers' use of sign language, visual materials, demonstrations, and other instructional approaches supported vocabulary development and English performance among students with hearing impairment.

English Literacy Outcomes among Deaf Learners

Despite the adoption of different instructional approaches, English literacy remains a significant challenge for many Deaf learners. Mayer and Trezek (2020), in their review of research on English literacy outcomes in sign-bilingual educational programs, identified limited empirical evidence, with only three studies meeting their inclusion criteria and reporting literacy outcomes for 127 Deaf learners. This indicates a need for more research evaluating the relationship between bilingual instructional practices and actual literacy achievement. In Kenya, nationally representative evidence reported by Piper et al. (2019) showed low English literacy outcomes among Deaf learners, with few demonstrating fluent reading comprehension. Similarly, Aura et al. (2016) demonstrated that KSL proficiency was positively associated with English literacy, suggesting the importance of accessible first-language development. These findings highlight the need for instructional approaches that address comprehension, vocabulary, grammar, sentence construction, and writing. The present study therefore investigated learners' written work and academic performance alongside questionnaire, interview, and classroom observation findings to establish how pedagogical strategies relate to English performance in a secondary school context.

RESEARCH DESIGN AND METHODOLOGY

Research Design

This study adopted an exploratory mixed-methods case study design to examine perceived instructional benefits, observed classroom practices, and English performance characteristics among students with hearing impairment (HI) at Wajir Special Secondary School.

Location of the study

The study was conducted at Wajir Special Secondary School for students with hearing impairment (HI), located in Wajir East Sub-County, Wajir County, in northeastern Kenya. The county is predominantly arid and semi-arid, with pastoralism as the main economic activity. It faces challenges including limited educational infrastructure, insecurity, and inadequate access to specialized educational services. Hussein (2025) identifies insecurity, forced migration, and limited culturally responsive educational policies as factors contributing to educational marginalization in the region. These contextual challenges, particularly their implications for learners with special educational needs, made the school an appropriate setting for the study.

Target population

According to Wajir County Government (2023), the county has 45 secondary schools with a total enrolment of 10,336 students. However, this study focused exclusively on Wajir Special Secondary School, the only secondary school in the county providing specialized education to students with hearing impairment (HI). The school had 50 students with HI, two English teachers, and one principal, making a total target population of 53 participants.

Sampling technique and sample size

This section describes the sampling procedures and sample size determination. The study involved 53 participants from Wajir Special Secondary School, comprising 50 students with hearing impairment (HI), two English teachers, and one school principal. Since the entire target population was included, census sampling was employed. The distribution of the study participants is presented in Table 1 below.

Table 1: Sample Size

	Target population	Sample Size	Sampling technique
Teachers	2	2	Census
Students	50	50	Census
Principal	1	1	Census
Total	53	53	

Research instruments

The study employed four research instruments: interview guides, classroom observation checklists, questionnaires, and document analysis guides to collect qualitative and quantitative data. Interview guides were administered to two English teachers and the school principal to obtain in-depth information on teaching strategies, experiences, and pedagogical challenges. Classroom observation checklists were used to document teaching practices, including sign language, total communication, visual aids, technology integration, learner participation, and classroom interactions during English lessons.

Questionnaires comprising structured questions were administered to 50 students with HI to gather information on the pedagogical strategies used, their perceived effectiveness, and challenges experienced in learning English. A Kenyan Sign Language interpreter and parental or guardian assistance were provided where necessary. Additionally, document analysis guides were used to examine students' exercise books, assignments, test papers, and progress reports to assess writing accuracy, sentence structure, vocabulary, coherence, and trends in English performance. The use of these instruments facilitated data triangulation and strengthened the reliability of the study findings.

Questionnaire Development

The student questionnaire was developed based on the study objectives, research questions, and relevant literature on pedagogical strategies for teaching students with hearing impairment. The items focused on sign language instruction, visual aids, educational technology, total communication, and learner engagement in English lessons. A four-point Likert scale was used, comprising Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD), to obtain students' views on the use and perceived effectiveness of the identified teaching strategies.

Piloting of the study instrument

The pilot study was conducted at Garissa Special Secondary School, which has characteristics similar to those of the study area. The pilot sample comprised twelve participants: one principal, one teacher, and ten students with hearing impairment. The pilot study was conducted to assess the clarity, suitability, and relevance of the research instruments, identify ambiguous questions, and establish the reliability of the student questionnaire. Feedback obtained during the pilot exercise informed revisions to the instruments before the main data collection exercise.

Validity and Reliability of Research Instruments

Content validity was established through expert review by the study supervisor in the Department of Special Needs Education at Kenyatta University. The supervisor assessed the research instruments for clarity, relevance, and alignment with the study objectives and recommended necessary improvements.

The reliability of the student questionnaire was assessed using Cronbach's alpha coefficient based on responses from the ten students who participated in the pilot study. The analysis yielded a Cronbach's alpha coefficient of 0.77, indicating acceptable internal consistency, as it exceeded the recommended minimum threshold of 0.70. The interview guide, observation checklist, and document analysis guide were also piloted, and necessary adjustments were made to improve their clarity and suitability for the study.

Data collection technique

To ensure accessibility, Kenyan Sign Language (KSL) interpretation was provided to all participants. Each questionnaire item and its corresponding response options were explained in KSL. Equivalent explanations were provided to all students to ensure consistency in the interpretation and understanding of the questions. Students were then given an opportunity to select their responses independently.

On the same day, semi-structured interviews were conducted with the two English teachers and the school principal. The interviews sought detailed information about the pedagogical strategies employed in teaching English, their perceived influence on students' comprehension, participation and academic performance, and the challenges encountered in implementing the strategies. The interviews also explored the participants' experiences with sign language, visual aids, educational technology, and total communication.

Classroom observations were conducted on the second day using a structured observation checklist. A total of two English lessons, each lasting 40 minutes, were observed, giving a total observation period of 80 minutes. The observations focused on the use of sign language, visual aids, educational technology, total communication, and content modification. They also examined students' participation in classroom activities, interest in lessons, understanding of instructional content, successful completion of learning activities, and ability to express themselves using the teaching strategies employed.

The observation checklist employed a four-point frequency rating scale consisting of Always (4), Often (3), Sometimes (2), and Never (1). Ratings were assigned according to the frequency with which the specified teaching practices and learner behaviors were observed during each lesson.

Document analysis was also conducted to examine students' written English skills and academic performance. The documents reviewed included students' exercise books, written assignments, and academic progress records. The written work covered Term One and Term Two of the 2026 academic year. The examination results were obtained from existing academic progress records, where they had been assessed and scored by the respective English teachers before the study.

Students' written work was examined using a structured document analysis guide based on four indicators: spelling and punctuation accuracy, grammatical correctness and sentence clarity, vocabulary use, and coherence and organization of ideas. Each indicator was assessed using a four-point rubric comprising Excellent (4), Good (3), Fair (2), and Poor (1). The same assessment indicators and rating descriptions were applied consistently when examining the students' written work to promote uniformity in scoring.

Academic performance was examined using the English examination scores recorded in students' academic progress records for Term One and Term Two of 2026. The examinations were set according to students' respective class levels and had been assessed and scored by their English teachers. The recorded scores were classified into three performance categories: High (60–100%), Average (50–59%), and Low (0–49%). Since students sat examinations appropriate to their respective class levels, the analysis focused on their performance categories rather than direct comparisons of raw scores across different class levels. The researcher relied on the existing examination records and did not administer an additional examination.

The use of these four data collection methods facilitated triangulation by enabling the researcher to compare students' questionnaire responses, teachers' and principal's interview accounts, classroom observation findings, and documentary evidence of English performance. This provided a broader understanding of the influence of pedagogical strategies on the English learning and performance of students with hearing impairment.

Data Analysis

Quantitative data from student questionnaires were analyzed using descriptive statistics, including frequencies, percentages, and mean scores. Qualitative data from teacher and principal interviews were analyzed thematically through transcription, coding, and theme development. Classroom observation data were analyzed using both numerical summaries and thematic coding, while document analysis involved content analysis and descriptive statistics to identify trends in students' written work and academic performance.

Following the separate analysis of data from each research instrument, the findings were integrated through triangulation to identify areas of convergence, complementarity, and divergence. A joint display was developed to bring together questionnaire findings, classroom observation results, interview themes, and evidence from students' written work and academic performance. This integration enabled comparisons across the different data sources, highlighting areas where findings supported one another, provided complementary insights, or differed. The integrated findings enhanced the credibility and comprehensiveness of the study by providing a broader understanding of pedagogical strategies, their influence on English performance, and the challenges experienced by students with hearing impairment.

Ethical Consideration

Ethical principles were upheld through informed consent, voluntary participation, confidentiality, anonymity, secure data storage, and the right to withdraw without penalty. The study minimized potential harm and disruption, respected participants' cultural values and diversity, and promoted gender equity. Data were retained for three years in accordance with Kenyatta University policy before secure destruction. Findings were shared with relevant stakeholders to support improved educational practices for learners with hearing impairment.

RESULTS

Response Rate

The study targeted a total of 53 respondents comprising 50 learners with hearing impairment, 2 teachers of English, and 1 school principal at Wajir Special Secondary School. All the targeted respondents participated in the study, as shown in Table 2.

Table 2: Distribution of Respondents and Response Rate

Category of Respondents	Targeted	Actual Participants	Response Rate (%)
Learners with hearing impairment	50	50	100
Teachers of English	2	2	100
School Principal	1	1	100
Total	53	53	100

Source: Field Data (2026)

As indicated in Table 2, the study achieved a 100% response rate, with all 50 learner questionnaires completed and returned, both English teachers and the principal participating in interviews, and all 50 learners' academic records reviewed. Additionally, two English lessons were observed. Full participation was attributed to prior consent, close cooperation with the school administration and the small school population.

Demographic Characteristics of Respondents

The study sought background information on the respondents, since demographic attributes such as gender, age and class level can shape learners' classroom experiences, communication preferences, and engagement with instructional strategies.

Gender of Student Respondents

The study aimed to explore the gender distribution of the student respondents in order to establish whether both male and female students with hearing impairment were adequately represented in the study. The results were presented in Table 2.

Table 3: Gender of Student Respondents

Gender	Frequency	Percent
Boy	26	52%
Girl	24	48%
Total	50	100%

Source: Field Data (2026)

Table 3 shows that 26 (52%) of the 50 learners with hearing impairment were boys, while 24 (48%) were girls, indicating a nearly balanced gender distribution with a slight male majority.

Age of Student Respondents

The study aimed to establish the age distribution of the student respondents in order to determine whether learners from different age groups were adequately represented in the study. The results were presented in Figure 1

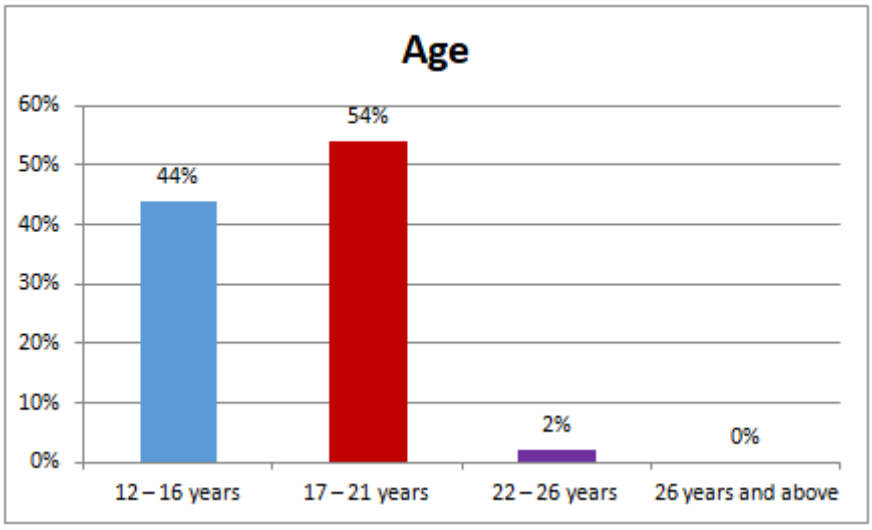


Figure 1: Age Distribution of Student Respondents

Source: Field Data (2026)

Results in Figure 4.1 indicate that 22 (44%) of the respondents were aged 12–16 years, 27 (54%) were aged 17–21 years and 1 (20%) were aged 22–26 years. The majority of learners fell within the 17–21 age bracket, which is older than the typical secondary-school age range.

Class Level of Student Respondents

Table4: Level of Student Respondents

Class Level	Frequency	Percent
Grade 10	16	32%
Form 3	20	40%

Form 4	14	28%
Total	50	100%

Source: Field Data (2026)

As shown in Table 4, 20 (40%) of the 50 Deaf learners were in Form 3, 16 (32%) in Grade 10, and 14 (28%) in Form 4. Although Form 3 had the highest representation, the distribution covered all three class levels. This enabled the study to capture diverse perspectives from learners with varying levels of exposure to English instruction and the pedagogical strategies used at Wajir Special Secondary School for the Deaf.

Profile of Teacher and Principal Respondents

The study interviewed two English teachers, one with three years and the other with five years of teachingexperience. Both held Bachelor of Education degrees in Special Needs Education. The school principal had served in the position for six years.

Effect of pedagogical strategies on English Performance.

The objective examined the influence of teachers' pedagogical strategies on English performance among students with hearing impairment at Wajir Special Secondary School, using questionnaires, interviews, classroom observations, and document analysis.

Students' response on effect of pedagogical strategies on English Performance.

Table 5: Students' Perceived Effect of Pedagogical Strategies on English Performance

Statement	**SA %**	**A %**	**D %**	**SD %**
Sign language assists me in comprehending English lessons	56	34	8	2
Visual aids enable me to retain what is taught	44	40	12	4
Technology makes English lessons easier	28	36	26	10
I remain engaged due to the methods used by the teacher	46	38	12	4

Source: Field Data (2026)

The findings in Table 5 indicate that 90.0% of learners agreed or strongly agreed that sign language improved their understanding of English lessons. Similarly, 84.0% reported that visual aids enhanced information retention, while 84.0% indicated that the teaching methods used kept them actively engaged during lessons. However, only 64.0% agreed or strongly agreed that technology made English lessons easier, making it the least endorsed strategy. Additionally, 10.0% strongly disagreed with the statement on technology use.

Observation checklist findings on the effects of pedagogical strategies on the performance.

Table 6: Observation Checklist Ratings on Effect of Pedagogical Strategies

Indicators	Always	Often	Sometimes	Never
Students active in classroom activities	1 (50%)	1 (50%)	0 (0%)	0 (0%)
Students active and interested in lesson	0 (0%)	1 (50%)	1 (50%)	0 (0%)
Learners indicate understanding of taught material	1 (50%)	0 (0%)	1 (50%)	0 (0%)
Students accomplish activities successfully	1 (50%)	0 (0%)	1 (50%)	0 (0%)
Students express themselves properly using the strategies applied	1 (50%)	0 (0%)	1 (50%)	0 (0%)

Source: Field Data (2026)

Table 6 indicates that learners were rated as active in classroom activities in 100.0% of observations, while interest in lessons was recorded in 50.0% of observations. Demonstration of understanding was rated as always

or often in 50.0% of observations. Successful completion of activities was rated as always in 50.0% and sometimes in the remaining 50.0%. Similarly, proper self-expression using the strategies applied was rated as always in 50.0% of observations and sometimes in the other 50.0%.

Interview findings on the effect of pedagogical strategies

Regarding how the pedagogical strategies had influenced learners' comprehension and performance, the first teacher observed,

"I have noticed that learners who are taught using a combination of signing, gestures and writing perform

noticeably better in written work than when I rely on the chalkboard alone. Their vocabulary especially improves when I pair a signed word with its written form repeatedly."

The second teacher added,

"The improvement is clear when I use total communication consistently over a term. Learners' sentence construction and spelling get better, though vocabulary remains a weak area for most of them, since English vocabulary has no direct one-to-one sign equivalent for many words."

The principal, reflecting on overall academic trends, stated,

"Over the years we have seen that classes taught with a mix of sign language, visual charts and total communication tend to record better grades in English than in subjects where teachers rely mostly on spoken instruction. Where we still lag behind is in exposing learners to technology-based learning, which I believe would further boost their vocabulary and comprehension."

Themes

Theme 1: Sign Language and Total Communication

The interviews revealed that combining sign language, gestures and written English supported students' comprehension and written expression. Teacher 1 observed that learners taught through a combination of signing, gestures and writing performed better in written work than when instruction relied on the chalkboard alone. The teacher further explained that repeatedly pairing signed vocabulary with its written English equivalent supported vocabulary development.

Similarly, Teacher 2 reported that consistent use of total communication over a term improved students' sentence construction and spelling. These findings suggest that integrating different communication approaches can support English learning among students with hearing impairment.

Theme 2: Vocabulary Development and Written English Skills

Vocabulary development and written language skills emerged as important aspects of English performance. Teacher 1 associated repeated exposure to signed and written vocabulary with improved word learning. Teacher 2 also reported improvements in sentence construction and spelling but noted persistent vocabulary difficulties because many English words do not have direct one-to-one equivalents in sign language.

This suggests that although multimodal communication supports written English development, vocabulary instruction remains an important area requiring targeted attention.

Theme 3: Visual Instruction and Academic Performance

The principal reported that classes taught using a combination of sign language, visual charts and total communication tended to record better English grades than classes where teachers relied mainly on spoken

instruction. This observation highlights the perceived importance of visual and multimodal instructional approaches in supporting English learning among students with hearing impairment.

Theme 4: Limited Access to Educational Technology

Limited exposure to technology-based learning emerged as an institutional challenge. The principal observed that inadequate technology exposure constrained opportunities to enhance students' vocabulary and comprehension. This finding suggests that technology could provide additional instructional support, particularly through accessible digital learning materials.

JOINT INTERPRETATION OF THE QUALITATIVE FINDINGS

The interview findings indicate that sign language, total communication and visual instructional approaches were perceived by participants as important in supporting English comprehension, vocabulary development and written expression. However, vocabulary difficulties and limited access to educational technology remained challenges. These findings can be compared with the questionnaire results, classroom observations and students' written work to establish whether the different sources support or differ from one another.

Document Analysis Rating on indicators of writing

Table 7: Document Analysis Ratings on Indicators of Writing Skills

Indicator of Writing Skills	Excellent %	Good %	Fair %	Poor %
Accuracy (spelling and punctuation)	10.0	30.0	40.0	20.0
Clarity and grammatical correctness of sentence structure	8.0	26.0	42.0	24.0
Use of vocabulary (scope and suitability)	12.0	34.0	38.0	16.0
Coherence and organisation (logical flow of ideas)	6.0	24.0	44.0	26.0

Source: Field Data (2026)

Table 7 indicates that the majority of learners' written work was rated as fair across all four writing indicators. Accuracy and vocabulary use recorded comparatively higher proportions of good and excellent ratings. However, clarity and grammar, and coherence recorded the highest proportions of poor ratings at 24.0% and 26.0%, respectively.

Document Analysis Ratings on performance Record and academic trends

Table 8: Trend

Performance Category	Frequency	Percentage (%)
High (60 - 100%)	6	12
Average (50 - 59%)	23	46
Low (0 - 49%)	21	42
Total	50	100

Source: Field Data (2026)

Table 8 indicates that 46.0% of learners were in the average English performance category, 42.0% were in the low-performance category, while only 12.0% attained high performance.

DISCUSSION

The findings demonstrate that pedagogical strategies, particularly Kenyan Sign Language (KSL), total communication and visual instructional materials, played an important role in supporting English learning among students with hearing impairment at Wajir Special Secondary School. However, their contribution to measurable English performance was not uniform. Questionnaire findings revealed that 90.0% of learners

agreed or strongly agreed that sign language assisted their comprehension of English lessons, while 84.0% reported that visual aids enhanced information retention. Similarly, 84.0% indicated that the instructional approaches used by teachers maintained their engagement during lessons. These findings suggest that accessible visual and signed communication approaches were important in facilitating learners' access to English instruction.

The positive perception of sign language is consistent with Mweri (2014), who argued that Kenyan Sign Language should be recognized as a language of instruction in schools for Deaf learners rather than relying predominantly on oral communication. Similarly, Aura et al. (2016) established a positive relationship between KSL proficiency and English literacy among Deaf learners in Kenyan residential schools. Their findings sugg-

est that a strong foundation in sign language can support the development of written English skills. Mayer and Leigh (2010) also observed that integrating sign language with written English provides opportunities for Deaf learners to develop literacy through accessible linguistic instruction. The present study reinforces these findings by demonstrating that learners themselves recognized the contribution of sign language to their understanding of English lessons.

Interview findings further explained how sign language supported English learning. One English teacher reported that learners performed better in written work when signing, gestures and written English were combined rather than relying on chalkboard instruction alone. The teacher particularly emphasized repeatedly pairing signed vocabulary with its written English equivalent. The second teacher observed similar improvements in sentence construction and spelling when total communication was used consistently. These findings suggest that the educational value of sign language extended beyond immediate comprehension to supporting learners' engagement with written English. They also demonstrate the importance of explicitly connecting signed concepts with their corresponding written English forms. This interpretation is consistent with Evans (2004), who found that using sign language to explain concepts and connecting meanings to written English supported literacy development in bilingual educational settings.

However, the findings also highlight an important distinction between using sign language as a means of accessing instruction and developing proficiency in written English. Although 90.0% of learners reported that sign language improved comprehension, documentary analysis revealed continuing weaknesses in written English. Specifically, 42.0% of learners' written work was rated as fair in sentence clarity and grammatical correctness, while 24.0% received poor ratings. Similarly, 44.0% were rated as fair in coherence and organization, with 26.0% receiving poor ratings. This suggests that improved access to classroom explanations does not automatically translate into grammatical accuracy and coherent written expression. Sign language therefore needs to be complemented by systematic English literacy instruction, including sentence construction exercises, grammar teaching, guided writing and opportunities for repeated practice. This interpretation supports Mayer and Trezek's (2020) observation that evidence on literacy outcomes in sign-bilingual program remains limited and that the relationship between bilingual instructional practices and measurable literacy achievement requires further investigation.

Total communication also emerged as an important instructional approach. The study established that combining sign language, gestures, fingerspelling and written language provided learners with different means of accessing English instruction. This was reflected in the teachers' accounts of improved spelling and sentence construction when different communication approaches were consistently integrated. The findings are consistent with Mayeye et al. (2023), who examined the application of Kenyan Sign Language in teaching English writing skills in special schools for learners with hearing impairment in Kenya. They also correspond with Mkumbo and Kisanji (2023), who highlighted the importance of inclusive instructional strategies in promoting participation among learners with hearing impairment.

Nevertheless, total communication should not be interpreted as simply combining different communication modes without considering their linguistic effectiveness. Aura et al. (2016) noted the importance of developing strong sign language proficiency, while Mayer and Trezek (2020) highlighted the need for more empirical evidence on the literacy outcomes of sign-bilingual approaches. The present findings similarly indicate that the effectiveness of total communication depends on how teachers connect signed concepts to written English and

provide opportunities for learners to practice language structures. Therefore, the use of multiple communication approaches should be purposeful and supported by explicit language instruction.

Visual instructional materials also emerged as an important component of English teaching. Questionnaire findings showed that 84.0% of learners agreed or strongly agreed that visual aids enhanced their retention of taught content. The school principal further observed that classes taught using sign language, visual charts and total communication tended to record better English grades than those in which teachers relied mainly on spoken instruction. These findings suggest that visual materials provided additional opportunities for learners to understand and retain English concepts. They are consistent with Birinci and Sarıçoban (2021), who established that combining sign language with visual materials was more effective in teaching English vocabulary to Deaf learners than relying on sign language instruction without additional visual support. Similarly, Mahlobo and Magongwa (2022) highlighted the contribution of visual materials and sign language to literacy development among Deaf learners in South Africa.

The classroom observation findings provided additional evidence of learner participation. Students were rated as active in classroom activities in all the observed lessons. However, their interest demonstrated understanding and successful completion of learning activities varied. Interest was rated as often in 50.0% of observations and sometimes in the remaining 50.0%. Similarly, successful completion of activities was rated as always in 50.0% of observations and sometimes in the other 50.0%. These findings indicate that although visual and multimodal strategies encouraged classroom participation, their contribution to understanding and task completion was not consistent. This distinction is important because active participation should not automatically be interpreted as mastery of English content. Rather, visual instructional materials need to be accompanied by appropriate explanations, guided practice and assessment to establish whether learners have understood and can independently apply what has been taught.

Vocabulary development emerged as another important aspect of English performance. Although teachers reported that repeatedly pairing signed vocabulary with written English supported word learning, they acknowledged that vocabulary remained a challenge for many learners. One teacher explained that several English words did not have direct one-to-one equivalents in sign language, making it difficult for some learners to acquire their meanings through direct translation alone. Documentary findings partly supported this observation: 38.0% of learners' written work was rated as fair in vocabulary use, while 16.0% received poor ratings. Although 46.0% received good or excellent ratings, the findings indicate that vocabulary development was not uniform among the learners.

These findings are consistent with Antia et al. (2021), who established that combining explicit vocabulary instruction, practice activities, reading and meaningful language experiences improved vocabulary acquisition among Deaf and hard-of-hearing children. Birinci and Sarıçoban (2021) similarly demonstrated the value of combining sign language with visual materials when teaching English vocabulary. The present study extends this understanding by showing that vocabulary difficulties can persist even where teachers use sign language and total communication. This suggests the need for explicit vocabulary instruction through visual illustrations, contextualized sentences, demonstrations, reading activities and repeated application of new words in written English. Teachers should also avoid assuming that a signed equivalent alone sufficiently explains the meaning and grammatical use of an English word.

Technology-supported learning received comparatively lower endorsement from learners. Only 64.0% agreed or strongly agreed that technology made English lessons easier, while 36.0% disagreed or strongly disagreed. This was the least positively rated instructional approach among the strategies examined. The principal's interview further revealed that learners had limited exposure to technology-based learning, which restricted opportunities to use digital resources to improve vocabulary and comprehension. These findings suggest that technology had not been integrated consistently into English instruction. However, the relatively low endorsement should not be interpreted as evidence that educational technology was ineffective. Rather, it may reflect limited exposure and opportunities for learners to interact with accessible digital learning resources. Wangui et al. (2023) highlighted the potential of computer-assisted learning in developing writing skills among learners with hearing impairment in Kenya. Similarly, Hyde et al. (2024) emphasized the contribution of digital visual resources and inclusive pedagogical approaches to language learning among Deaf students. The

findings therefore point to the need for greater access to captioned educational videos, interactive vocabulary exercises, digital reading materials and Kenyan Sign Language resources to complement existing classroom strategies.

Despite the positive perceptions of instructional strategies, documentary analysis revealed that overall English performance remained a concern. The examination records showed that 46.0% of learners attained average performance, 42.0% were in the low-performance category, while only 12.0% achieved high performance. These findings demonstrate that positive classroom experiences and perceived improvements in comprehension did not necessarily translate into high academic achievement. The results are consistent with Piper et al. (2019), whose nationally representative study in Kenya reported low English literacy outcomes among Deaf learners, with few demonstrating fluent reading comprehension. Similarly, Aura et al. (2016) established a positive relationship between KSL proficiency and English literacy, suggesting that accessible language development is important for English achievement. The present study adds to this evidence by demonstrating that, even where learners report positive experiences with sign language and visual instructional approaches, substantial difficulties in written English and overall academic performance may persist.

The difference between positive perceptions of teaching strategies and the relatively modest examination outcomes may be explained by several interconnected factors. First, comprehension during classroom instruction does not necessarily indicate the ability to independently construct grammatically correct sentences or organize written ideas. Second, the effectiveness of pedagogical strategies may depend on the consistency with which teachers implement them and the opportunities learners receive to practice newly acquired language skills. Third, limited access to adapted instructional materials and educational technology may restrict opportunities for additional language exposure. These interpretations are consistent with Kalla (2024), who identified inadequate resources, limited teacher knowledge and insufficient opportunities for interaction and scaffolding as challenges affecting English literacy development among Deaf learners in Kenyan schools. They also correspond with Mweri (2022), who highlighted the challenges of translating inclusive education policies into effective classroom practices in Kenya.

The findings also have implications for Gardner's (1983) Multiple Intelligences Theory, which guided the study. The positive responses to sign language, visual materials, demonstrations and multimodal instruction support the importance of providing diverse instructional experiences that accommodate learners' different abilities and learning needs. The theory helps explain why relying on a single instructional approach may not adequately address the learning needs of students with hearing impairment. In this study, the use of visual and signed communication provided alternative avenues through which learners could access English content, participate in classroom activities and retain information. However, the persistent difficulties in vocabulary, grammar and written expression suggest that diversifying instructional approaches alone may not be sufficient to achieve improved English literacy. Learners also require explicit language instruction, structured practice and appropriate assessment. It is therefore important to recognize the limitations of Multiple Intelligences Theory in explaining the linguistic processes involved in sign language acquisition and the development of written English.

An integrated interpretation of the findings reveals convergence, complementarity and divergence across the different data sources. Convergence was evident in the positive perceptions of sign language and visual instruction reported by learners and the teachers' accounts of improved comprehension and written expression. The classroom observations further demonstrated consistent learner participation during English lessons. Complementarity was evident where interview findings explained the documentary evidence, particularly regarding persistent vocabulary and grammatical difficulties despite the reported benefits of multimodal instruction. Divergence was also apparent between positive learner perceptions and active classroom participation on the one hand and the relatively low levels of overall English achievement on the other. This divergence demonstrates the importance of examining pedagogical effectiveness through multiple sources of evidence rather than relying exclusively on learners' perceptions or classroom participation.

Overall, the findings indicate that KSL, total communication and visual instructional materials are important in facilitating access to English instruction, supporting comprehension and promoting classroom participation among students with hearing impairment. Nevertheless, their contribution to overall English performance

depends on the quality, consistency and appropriateness of their implementation, as well as the availability of adapted instructional resources and opportunities for sustained language practice. The study therefore suggests that effective English instruction for students with hearing impairment should move beyond facilitating comprehension during lessons to systematically developing vocabulary, grammatical accuracy, sentence construction, reading comprehension and coherent written expression. This requires an integrated approach combining accessible communication, explicit English language instruction, differentiated teaching strategies and appropriate educational technology.

CONCLUSION

The study established that Kenyan Sign Language (KSL), total communication and visual instructional materials were perceived by learners as important in supporting access to English instruction, comprehension, information retention and classroom participation. This was reflected in the questionnaire findings, where 90.0% of learners reported that sign language assisted their comprehension, 84.0% indicated that visual aids enhanced retention, and 84.0% reported that the instructional approaches used maintained their engagement. Teachers' interviews and classroom observations further supported the importance of combining signed communication, gestures and written English in teaching learners with hearing impairment.

However, these positive perceptions and classroom experiences did not correspond to uniformly high demonstrated academic performance. Documentary analysis revealed persistent weaknesses in vocabulary, grammatical accuracy, sentence construction and coherence. Furthermore, examination records showed that 42.0% of learners were in the low-performance category, 46.0% attained average performance and only 12.0% achieved high performance. The findings therefore suggest that while the instructional strategies supported learners' access to English lessons, their contribution to measurable academic achievement remained limited and uneven. The study does not establish that the strategies caused improvements in English performance but demonstrates their perceived instructional usefulness within the participating school.

Considering these findings, the study recommends increased access to appropriate assistive and educational technologies, including captioned videos, interactive digital learning resources and Kenyan Sign Language materials. This recommendation is informed by the limited technology exposure reported by the principal and the relatively lower learner endorsement of technology-supported instruction (64.0%). The emphasis should therefore be on improving access, availability and meaningful integration rather than if technology alone will improve academic outcomes. The study also recommends developing and providing adapted English learning materials, including visual vocabulary resources, structured reading activities, grammar exercises and guided writing tasks. This recommendation responds directly to the weaknesses identified in learners' written work, particularly in vocabulary, grammatical accuracy and coherence.

Furthermore, continuous professional development for English teachers is necessary to strengthen their capacity to use KSL, total communication, visual instructional approaches and differentiated literacy instruction effectively. Teachers should be supported to connect signed concepts systematically with written English and provide learners with regular opportunities for vocabulary development, sentence construction and guided writing. This recommendation is supported by the teachers' interview accounts, which highlighted the benefits of combining signing, gestures and writing, while also identifying persistent challenges in learners' written English.

Overall, the study concludes that effective English instruction for learners with hearing impairment requires more than accessible classroom communication and active participation. It also requires sustained, explicit and appropriately supported literacy instruction aimed at developing measurable English competencies. Since the study was conducted in one school, involved only two English teachers and employed a descriptive case study approach, its findings should be interpreted within the context of the participating school rather than generalized to all schools for learners with hearing impairment. Further research involving multiple schools and longitudinal or intervention-based designs is recommended to establish whether, and to what extent, these instructional approaches lead to sustained improvements in English academic performance.

RECOMMENDATION

Based on the study findings and conclusions, the following recommendations are made:

i. The Ministry of Education and relevant stakeholders should provide assistive technology and adapted instructional materials to improve English instruction.
ii. School administrators should organize continuous teacher training in sign language, total communication, and differentiated English teaching strategies.
iii. Quality assurance officers should strengthen supervision to ensure consistent implementation of inclusive pedagogical practices in special schools**.**

REFERENCES

1. Antia, S. D., Catalano, J. A., Rivera, M. C., & Creamer, C. (2021). Explicit and contextual vocabulary intervention: Effects on word and definition learning. The Journal of Deaf Studies and Deaf Education, 26(3), 381–394. https://doi.org/10.1093/deafed/enab002
2. Atieno, O. L., Ouko, O., & Onchari, I. B. (2024). Instructional strategies and challenges faced by teachers in promoting inclusive learning for learners with hearing impairments at Oriang' Inclusive Primary School, Homa-Bay County, Kenya. International Journal of Research and Innovation in Social Science, 8(4), 2027–2036. https://doi.org/10.47772/IJRISS.2024.804137
3. Aura, L. J., Venville, G., & Marais, I. (2016). The relationship between Kenyan Sign Language and English literacy. Issues in Educational Research, 26(2), 165–181.
4. Birinci, F. G., & Sarıçoban, A. (2021). The effectiveness of visual materials in teaching vocabulary to deaf students of EFL. Journal of Language and Linguistic Studies, 17(1), 628–645.
5. Evans, C. J. (2004). Literacy development in deaf students: Case studies in bilingual teaching and learning. American Annals of the Deaf, 149(1), 17–27. https://doi.org/10.1353/aad.2004.0011
6. Gardner, H. (1983). Frames of mind: The theory of multiple intelligences. Basic Books.
7. Gonzalez, M., & Martin, P. (2021). Language delay and academic achievement among learners with hearing impairment. Journal of Educational Psychology, 113(5), 987–1001. https://doi.org/10.1037/edu0000508
8. Guo, Y. (2021). Teacher scaffolding in English as a foreign language classrooms and its effect on learners' comprehension and engagement. Journal of Language Teaching and Research, 12(4), 567–575. https://doi.org/10.17507/jltr.1204.10
9. Herman, R., & Roy, P. (2023). Literacy instruction and assessment for deaf learners in the United Kingdom. Deafness & Education International, 25(2), 89–104. https://doi.org/10.1080/14643154.2023.2176845
10. Hyde, M., Punch, R., & Power, D. (2024). Inclusive pedagogies and language outcomes for deaf students in Australian schools. International Journal of Inclusive Education, 28(4), 512–528. https://doi.org/10.1080/13603116.2023.2239017
11. Kalla, J. (2024). Teaching English literacy skills to deaf learners in primary schools in eastern and central Kenya [Doctoral dissertation, University of Birmingham].
12. Klieve, S., Douglas, J., & West, J. (2025). Explicit vocabulary instruction for deaf children: A multimodal approach. Australian Journal of Special Education, 49(1), 32–47. https://doi.org/10.1017/jse.2024.12
13. Li, X. (2024). Instructional strategies and reading comprehension among English learners. TESOL Quarterly, 58(2), 389–410. https://doi.org/10.1002/tesq.3278
14. Magaji, Y. U., Awori, B. B., & Muthee, J. M. (2023). Career aspirations as a predictor of academic achievement of learners with hearing impairment in special secondary schools in North Eastern Nigeria. International Journal of Science and Research Archive, 9(2), 760–767. https://doi.org/10.30574/ijsra.2023.9.2.0664
15. Mahlobo, M. G., & Magongwa, L. (2022). Teachers' use of South African Sign Language and literacy development among deaf learners. South African Journal of Education, 42(3), 1–10. https://doi.org/10.15700/saje.v42n3a2041

16. Masayi, D. (2024). Relationship between utilization of assistive hearing devices and academic achievement of learners with hearing impairment in Kenya. Journal of Scientific Research and Technology, 2(11), 13–17. https://doi.org/10.61808/jsrt148
17. Mayer, C., & Leigh, G. (2010). The changing context for sign bilingual education programs: Issues in language and the development of literacy. International Journal of Bilingual Education and Bilingualism, 13(2), 175–186. https://doi.org/10.1080/13670050903474085
18. Mayer, C., & Trezek, B. J. (2020). English literacy outcomes in sign bilingual programs: Current state of the knowledge. American Annals of the Deaf, 164(5), 560–576. https://doi.org/10.1353/aad.2020.0003
19. Mayeye, T. O., Omoke, C., & Mwebi, B. (2023). Application of mother tongue (Kenyan Sign Language) when teaching English writing skills in special schools for learners with hearing impairment in Kenya. Sarc Journal of Arts and Literature, 2(3), 6–19. https://doi.org/10.5281/zenodo.8066090
20. Mkumbo, K. A., & Kisanji, J. (2023). Inclusive teaching strategies and participation of learners with hearing impairment in Tanzania. International Journal of Disability, Development and Education, 70(4), 543–558. https://doi.org/10.1080/1034912X.2022.2087924
21. Miller, D., & Thompson, R. (2022). Barriers to instructional access for deaf students in inclusive classrooms. Journal of Deaf Studies and Deaf Education, 26(3), 245–260. https://doi.org/10.1093/deafed/enab012
22. Mohamed, H. A. (2025). Pedagogical challenges affecting academic performance of learners with hearing impairment in arid and semi-arid regions of Kenya. African Journal of Special Needs and Inclusive Education, 8(1), 1–15.
23. Mwangi, L. W. (2025). Challenges in teaching learners with hearing impairment in inclusive secondary schools in Kenya. Journal of Research Innovation and Implications in Education, 9(3), 160–170. https://doi.org/10.59765/jriie.9.3.16
24. Mweri, J. G. (2014). Diversity in education: Kenyan Sign Language as a medium of instruction in schools for the deaf in Kenya. Multilingual Education, 4, Article 14. https://doi.org/10.1186/s13616-014-0014-1
25. Mweri, J. (2022). From policy to practice: Inclusion and the education of the deaf child in Kenya. International Journal of Science and Research Archive, 7(1), 186–197. https://doi.org/10.30574/ijsra.2022.7.1.0045
26. Nyongesa, G. (2024). Relationship between proficiency in Kenyan Sign Language and Signed Exact English and performance in English by learners with hearing impairment. Humanities & Language: International Journal of Linguistics, Humanities, and Education, 1(2), 75–96. https://doi.org/10.32734/ev1pqa59
27. Obosu, G. K., & Adigun, O. T. (2026). Inclusive education for deaf learners in Ghana: Contestation between social and linguistic values. In Policies and issues in deaf studies and education (Chapter 7, pp. 177–203). IGI Global. https://doi.org/10.4018/979-8-3373-4317-4.ch007
28. Ohba, A., & Malenya, F. L. (2022). Addressing inclusive education for learners with disabilities in the integrated education system: The dilemma of public primary schools in Kenya. Compare, 52(1), 19–36. https://doi.org/10.1080/03057925.2020.1726727
29. Okwaput, S. (2026). Teacher proficiency in sign language and reading skills development of learners with hearing impairment. International Journal of Research and Innovation in Social Science, 10(8), 112–125. https://doi.org/10.47772/IJRISS.2026.100809
30. Osman, D. M., Oracha, P. A., & Joel, O. (2020). Assessment of availability and use of teaching and learning resources for retention of learners with special needs in regular primary schools in Dadaab Sub-County, Kenya. IRA International Journal of Education and Multidisciplinary Studies, 16(2), 112–122. https://doi.org/10.21013/jems.v16.n2.p4
31. Piper, B., Bulat, J., Kwayumba, D., Oketch, J., & Gangla, L. (2019). Measuring literacy outcomes for the blind and for the deaf: Nationally representative results from Kenya. International Journal of Educational Development, 69, 1–8. https://doi.org/10.1016/j.ijedudev.2019.05.002
32. Wajir County Government. (2023). Wajir County education sector statistical report. Government Printer.
33. Wangui, V. W., Muriithi, F., & Karia, M. (2023). Computer assisted learning on language writing skills among learners with hearing impairments in Kiambu County, Kenya. European Journal of Special Education Research, 9(3), 1–16. https://doi.org/10.46827/ejse.v9i3.5068