

ASSESSMENT OF DELIVERY OF COMPETENCY BASED EDUCATION TO LEARNERS WITH VISUAL IMPAIRMENTS IN INTEGRATED PRE-PRIMARY TWO SCHOOLS IN NAROK COUNTY, KENYA

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ABSTRACT

The study assessed the Delivery of Competency-Based Education (CBE) to learners with Visual Impairments in Integrated Pre-Primary Two (PP2) schools in Narok County, Kenya. While the Competency-Based Education (CBE) marks a significant educational reform in Kenya, the effectiveness of its delivery in inclusive early childhood education settings, particularly for visually impaired learners remains unknown. The study was conducted in the integrated preschools in Narok county. The study was guided by three core objectives: To establish teacher preparedness in delivering Competency-Based Education (CBE) to learners with visual impairment in Integrated Pre-Primary Two schools in Narok County. To examine the teaching methods used in the delivery of Competency- Based Education among learners with visual impairment in Integrated Pre-Primary Two schools in Narok County. To establish the availability of specialized learning equipment for the delivery of Competency-Based Education to learners with visual impairment in Integrated pre- Primary Two schools in Narok County. A total of 109 participants were selected from a population of 150. Descriptive survey design was employed, integrating both qualitative and quantitative methods. Data collection instruments included questionnaires, interview schedules and observation schedules. Pilot study was conducted in two Pre-schools in Narok County to determine the validity and reliability of the research instruments. Qualitative and Quantitative Data from the research instruments were coded and entered into SPSS software to analyse the

data in form of percentages, frequencies, means and standard deviation. The findings were presented using visual tools such as tables, bar graphs, pie charts, and line charts which provided a user-friendly summary of complex data patterns. The study revealed that: Majority of the teachers 51%(n=76) had pre-service training in handling V.I learners but still they proved less prepared to deliver CBE to the V.I learners in the integrated preschools. The teaching methods used to deliver CBE to the visually impaired learners in the integrated preschools were less effective since a greater majority of teachers 82%(n=66) used a less effective Traditional Methods of teaching/lecture method. The ratio of available learning equipment to the learners was 1:9 indicating high shortage. The study gave policy recommendations that the County government and EARC officers to provide more adaptive learning equipment to the preschools especially the Assisted Technology devices to make learning more realistic to the learners. ECDE and EARC officers should also provide more capacity building courses for teachers handling the V.I learners to equip them with more skills in using effective instructional methods. The study will offer ECDE and EARC officials and teachers localized evidence to inform planning, budgeting, and resource allocation aimed at strengthening inclusive early childhood education especially in marginalized regions like Narok County.

Keywords: Teacher Preparedness, Teaching Methods and Visually Impaired d in Integrated Pre- Primary Two schools.

INTRODUCTION

Competency-Based Education (CBE) is an ongoing reform in many parts of the globe in response to evolving workplace demands. The goal is to help learners develop and nurture knowledge and skills that align with real-life demands (Gervais, 2016). In USA CBE reforms begun in the 1960's and 1970's initially focusing on teacher training and vocational education; and in Western European countries, it begun around 1980's (Kitasse, and Ssembatya, 2024). CBE reforms begun appearing in African countries, including South Africa (1998), and Uganda (2007) and Kenya rolled out its CBE in 2017 to replace the 8.4.4 system which was more knowledge-based. (MOEST,2018). Other nations in Africa have implemented similar shifts from 2002 to 2015 and beyond. Currently, there is no universally agreed-upon definition of CBE. According to Gervais (2016), CBE is an outcome-based model that incorporates varied instructional delivery and assessment modes to evaluate the mastery of learning, evidenced by learners' demonstration of some expected competencies – knowledge, skills, values, and behaviors. The emphasis is, thus, on the ability to demonstrate their mastery of a set of competencies expected of their level. Compared to conventional education systems, CBE has been praised for its ability to offer learners personalized/individualized experiences, enhancing their engagement, motivation, and ability to solve real-world problems (Sangwa, 2025).

Competency-Based Education is particularly relevant for historically marginalized populations, such as individuals with visual impairments, who are often ignored or overlooked in policymaking and face persistent barriers to quality education (Otyola *et al.*, 2017; UNESCO, 2023). The CBE model, with its emphasis on learner-centered experiences, efficiency, and equity, is considered vital for enhancing the inclusion of learners with visual impairments (Sangwa, 2025).

Within the United States, Competency-Based Education (CBE) has been integrated into special education frameworks through the use of Individualized Education Programs (IEPs). McLaughlin and Rosenberg (2021) describe IEPs as tools for aligning instructional goals with individual learner needs, especially for students with visual impairment. The education system emphasizes measurable outcomes and mastery of skills, enabling visually impaired learners to progress at their own pace. Assistive technologies such as screen readers, braille displays, and audio-based learning platforms are incorporated within instructional design to support independent learning. Teachers receive targeted training in differentiated instruction and are supported by multidisciplinary teams, including orientation and mobility specialists. This integration facilitates the adaptation of CBE principles to the needs of learners with visual impairment across various learning environments. Finland's early childhood education is governed by a play-based, inclusive and competency-oriented national curriculum (Vuorinen, Erikson and Niemined, 2020).

Teacher training in Finland includes inclusive methods that promotes social interaction, emotional development and independence competencies among learners, which are

considered foundational in early childhood education. In many developed countries, such as Australia, Canada, Finland, Singapore, and the US, CBE has had relative success, and its implementation, especially at the tertiary education level, has coincided with notable improvements in instructional approaches, teacher preparedness, resource materials, flexibility in learner choices, learning outcomes, and workforce alignment (AnderSon-Levitt, 2017). These successes have, however, been marred by a range of issues, including uneven 2 implementation, teacher resistance, and assessment complexities (AnderSon-Levitt, 2017; UNESCO, 2023).

In Africa, with focus to Ghana, Afari and Kugbey(2022) noted that although national education policies promote inclusive practices for the visually impaired learners, delivery of CBE is affected by limited access to braille text books, under-trained teachers and use of ineffective teaching methods. In Nigeria, attempts to adopt competency-based learning frameworks face barriers in inclusive and integrated settings (Adegoke and Oladipo, 2021). Adegoke and Oladipo further observes that, despite promotion of inclusive education by the Universal Basic Education Commission (UBEC), many schools lack infrastructure and personnel to support the visually impaired learners within a CBE model. Studies from Uganda reveal a disparity between national policy support for inclusive education and actual practice in Early Childhood Institutions implementing CBE. Namubiru and Nansozi (2021), found that teachers frequently lack training specific to instructional needs of visually impaired learners and insufficient instructional materials. Oral teaching methods without tactile reinforcement limit opportunities for mastery of competencies that requires multi-sensory engagement. Reports from Tanzania indicates uneven adoption of CBE in preschools settings, particularly for children with disabilities. Mwakyusa and Mlyakado (2020) document that teachers have minimal exposure to inclusive education during training and express unpreparedness to meet the needs of visually impaired learners.

According to Kenya Institute of Special Education (KISE) through Kenya Integrated Education Program (KIEP) report (2018), there are 671,205 children in Kenya with visual impairment. Out of this number, 596701(88.9%) are enrolled in 158 integrated schools and 66 special schools. Out of those in the integrated programs 14% are blind while 86% have low vision. There are also estimated 10,000 teachers teaching learners with visual impairment in Kenya according to the KISE report (2018). This low figure poses a big ratio of teacher to learners in 3 the country. In Narok county, there are 22 integrated preschools with 2264 visually impaired learners and 110 teachers. EARC Narok (2026). From the statistics above, it is therefore evident that the ratio of teacher to learners in Narok county is larger than the recommended by the MOE which should be 1:15 respectively (EARC Narok,2026). Research indicates that only 19% of teachers nationwide possess disability management skills (Jelagat, 2025). In addition, there is severe shortage of specialists, with many integrated schools relying on teachers with limited formal training on handling learners with visual impairment (Jelagat, 2025)

Delivery of CBE involves adapting teaching methods, learning equipment and teacher preparedness to ensure acquisition in core competencies such as digital literacy and self-efficacy. These issues are pronounced in developing economies, where they are compounded with critical resource shortages and inadequate teacher preparedness (Sangwa, 2025). As a result, learners in these countries are not benefiting fully from the anticipated CBE gains, while those with specific disabilities, such as visual impairments, continue to have fewer learning opportunities compared to their peers without a disability, even in countries where CBE has been in place for many years (Kasongole & Muzata, 2020; Vergunst & McKenzie, 2022). It is from this background that the study sought to investigate the delivery of CBE to learners with visual impairment in the integrated preschools in Narok county.

Statement of the Problem

The government of Kenya introduced the Competency Based Education (CBE) to transform the education system from knowledge-based to skills oriented, aiming to equip learners with relevant competencies for the 21st century economy (MOE, 2017). While the CBE emphasizes learner-centered pedagogies, learning equipment and teacher preparedness which are particularly beneficial for learners with visual impairments, its delivery has encountered significant challenges in the integrated pre-schools. 4 Despite policy directives aimed at inclusion, the delivery of CBE to learners with visual impairments in pre-schools remains hindered by a profound shortage of accessible learning equipment such as slate stylus, talking computers and assistive technology. Many teachers lack adequate specialized training in adapting teaching methods to suit learners with visual impairments, forcing them to rely on traditional, teacher centred methods that do not foster the required competencies (Sangwa, 2025). Evidence from various studies indicates that learners with visual impairments are not benefitting fully from the anticipated CBE gains and are facing difficulties in navigating career pathways, particularly STEM (Science, Technology, Engineering and Mathematics) subjects due to limited specialized learning resources. Consequently, there is a gap between policy intentions of CBE and practical realities on the ground (KISE, 2023) In regard to the previous researches done on learners with visual impairment, there remains no empirical investigations focusing specifically on delivery of CBE in the Integrated Pre-schools in Narok County to the visually impaired learners in PP2 in order to unravel teacher preparedness, teaching methods used and availability of specialized learning equipment in the County. It is this gap in knowledge that formed a thrust for this study.

Research Objectives

- i. To establish teacher preparedness in delivering Competency-Based Education (CBE) to learners who are visually impaired in Integrated Pre-Primary Two schools in Narok County.
- ii. To examine the teaching methods used in the delivery of Competency- Based Education among learners who are visually impaired in Integrated Pre-Primary Two schools in Narok County.

LITERATURE REVIEW

Theoretical Framework

The study was based on Jerome Bruner's Scaffolding Theory developed in 1976. In scaffolding, teachers provide temporary structured support to learners and gradually removing it as the learners master new skills. Scaffolding promotes independence among learners. In this approach, the learners are able to accomplish tasks they cannot yet complete alone, thus learners move from assisted performance to independent proficiency.

According to Bruner, the key elements of Scaffolding include Zone of Proximal Development (ZDP), Temporary Support, Gradual fading and Tailored Assistance. Zone of Proximal Development is the gap between what the learner can do independently and what they can do with help. Scaffolding operates within this zone. The concept of Temporary Support involves the teacher removing scaffolds as the learner increases proficiency in the task, he/she is subjected to. Scaffolds are not permanent. In Gradual Fading concept, teachers reduce support as learners gain confidence and skills. Lastly, in Tailored Assistance, the teacher adjusts support to learner's current level, often described as 'I do. You do. We do' (Kirschner, Swellerand, 2006).

Examples of scaffolding techniques include Modelling, where the teacher demonstrates the task before learners attempt it. Also Breaking Tasks Down, where the teacher divides complex assignments into smaller, manageable chunks. Using Virtual Aids where the teacher provides graphic organizers, checklists or story maps. Hinting and Prompting also is another example where the teacher asks the learner guiding questions instead of giving answers directly.

The benefits of applying this theory in learning includes improved retention, where learners learn more effectively and retain information longer. Reduced frustration on the learner is another benefit. When the teacher provides immediate support, the learner is prevented from being overwhelmed by new challenges. The learner also achieves increased independence through scaffolding as the ultimate goal is for the learner to become capable of working independently.

In relation to this study, Scaffolding learning theory supports the delivery of CBE in Kenya by providing structured, temporary support (tactile aids, audio tools, tailored ICT) to learners with visual impairments within their Zones of Proximal Development (ZDP). This approach enables teachers to break down competency-based tasks, gradually removing assistance as students gain independence in practical skills, ensuring effective, inclusive and tailored learning in Kenyan schools.

In applying Bruner's concept of Zones of Proximal Development (ZDP) in Visual Impairment, teachers must identify the gap between what a visually impaired learner can do

independently and what they can do with assistance (e.g. audio books, braille, high-contrast materials). Scaffolding provides the necessary support to cross this gap, a core requirement of the CBE in 18 Kenya. The concept of Tailored Instructional Support (Scaffolding); as learners with visual impairment often struggle with traditional visual aids, scaffolding involves providing adaptive materials such as tactile maps for geography or braille mathematical instruments, which act as temporary supports until proficiency in the competency is reached. Also, for visually impaired learners, there should be Integration of ICT for Independence.

In Kenyan classrooms, scaffolding should include training students on screen readers (JAWS/NVDA) and specialized computer-based tools. These tools act as ‘scaffolds’ that empower learners to complete tasks independently (Onejeme, 2017). Another insight is that of Role of the teacher/Teacher Aide. The teacher should act as ‘scaffolder’, providing intense support during the introduction of new skills and fading that support as the learner demonstrates mastery, aligned with the shift to learner-centered activity-based learning. Lastly, Addressing Educational Gaps. Scaffolding allows teachers to break down complex competencies into smaller, manageable steps for learners with visual impairments, ensuring they acquire practical skills rather than merely memorizing facts.

Teacher Preparedness in Delivering CBE to Learners with Visual Impairment

Teacher preparedness is the foundation to the successful implementation of Competency-Based Education (CBE) for learners with visual impairments. In the United Kingdom, Phutane *et al.* (2022) conducted interviews with 21 teachers of visually impaired learners alongside three-week diary studies, revealing that tactile educational tools such as 3D models and tactile graphics enhance understanding of spatial awareness and literacy competencies. However, the teachers reported challenges in creating, sourcing, and adapting to these tools for classroom use, indicating a disconnect between resource potential and teacher readiness. Meanwhile, in the United States, Yang and Taele (2025) explored the use of an AI-powered audio learning platform (Audemy) designed to personalize instruction for visually impaired students. Their findings highlighted that effective integration of such technology into a competency-based framework critically depends on teachers' digital literacy and familiarity with emerging instructional tools.

Turning to South Africa, Adewumi, Rembe, Shumba, and Akinyemi ,2019, as cited in Majoko, (2019) emphasized that inclusive education demands that teachers possess diagnostic and adaptive instructional skills to align lessons with learner competencies. Unfortunately, many educators lack these competencies, limiting the efficacy of competency-focused instruction. In 11 Tanzania, Pamier (2017) highlighted a similar gap: pre-service teachers, despite theoretical exposure to competency-based methods, often revert to traditional, non-competency-aligned assessment practices in inclusive classrooms, signaling a critical disconnect between training and practical implementation.

In Uganda, a 2023 assessment by the Ministry of Education and NGO reports revealed that inclusive education policies have yet to be matched with adequate teacher training in accessible pedagogy, particularly in rural areas where learners with visual impairments are often enrolled. This gap echoes findings in Kenya. In Nairobi County, Isaboke, Mweru, and Wambiri (2021) reported that 65.9% of pre-primary teachers lacked any formal training in the Competency-Based Curriculum, directly affecting classroom delivery quality. In Kitui County, Mutembei and Nyabisi (2023) found that, although many educators held certificates in special needs education, 76.7% had not attended in-service training on CBE methods tailored for visually impaired learners, undermining the translation of formal credentials into competency-based pedagogical practice. Koros and Achieng (2023) further documented that primary school teachers across several Kenyan districts perceive themselves as unprepared to implement CBE, particularly lacking in areas such as digital literacy and lesson adaptation.

In Narok County, Mary, Koech, and Kimani (2022) employed a concurrent mixed-methods design with 266 respondents. They used interviews and observations, to investigate how teacher preparedness and instructional resources influence transitions of pupils with visual impairment from pre-primary to primary school. The study found that inadequate teacher readiness in inclusive, competency-based methodologies was significantly associated with poor learner transition outcomes, thus hindering the delivery of CBE to learners with visual impairment in the county. While global, regional, and national research underscores prevailing shortfalls in teacher preparedness to deliver inclusive CBE, these studies target general educational contexts or specific stages, such as special schools or upper levels of education. Critically, there remains no empirical investigation focusing specifically on integrated pre-primary two settings where learners with visual impairment are taught alongside their sighted peers in rural-pastoral regions like Narok County.

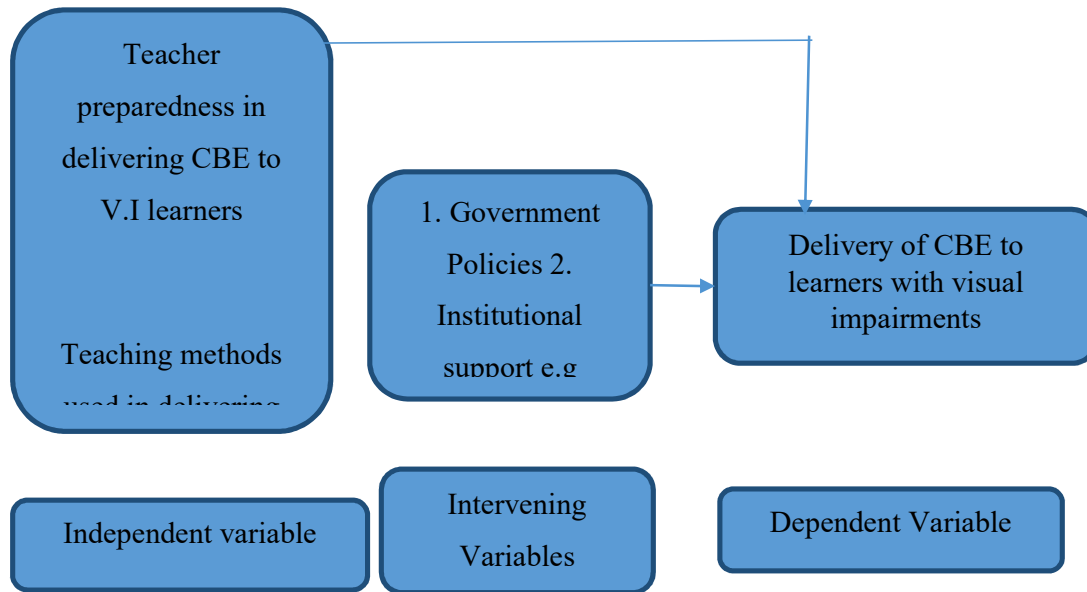
Teaching Methods Used in Delivering Competency-Based Education (CBE) to Learners with Visual Impairment (VI)

Globally, innovative teaching methods have shown promise in enhancing Competency-Based Education (CBE) outcomes for learners with visual impairment. In the United Kingdom, a study by Phutane et al. (2022) revealed through three-week diaries and teacher interviews that tactile instructional materials such as 3D models and tactile graphics substantially aid spatial understanding and literacy; however, educators frequently reported difficulties in creating, adapting, and integrating these tools within competency-based frameworks, highlighting a gap between accessibility and practical implementation. In the United States, Yang and Taele (2025) evaluated the AI-powered platform Audemy, designed to personalize audio-based instruction for visually impaired learners. Their findings emphasized that successful integration of such technology hinges on teachers' digital readiness, underscoring the essential role of educator training in realizing the full potential of technological innovations.

In sub-Saharan Africa, similar dynamics are apparent. In Ghana, Douglas et al. (2020) observed that mainstream teachers occasionally used tactile and optical aids alongside real objects to support visually impaired learners, yet limited training in adaptive pedagogy significantly muted the effectiveness of these strategies. Conversely, Kasebusha and Banda (2021) in Zambia documented improved engagement and classroom performance when teachers employed highly tailored teaching methods, including individualized audio devices and high-contrast materials, suggesting that contextually adapted instructional tools can positively shift pedagogical outcomes.

Within East Africa, gaps persist despite policy advocacy. In Tanzania, Pamier (2017) found that although pre-service teachers were familiar with competency-based methodologies, many reverted to traditional rote instruction reflecting a disjunction between theoretical preparation and applied teaching in inclusive settings. In Kenya, Isaboke, Mweru, and Wambiri (2021) reported that over 65% of pre-primary teachers in Nairobi had not received formal training in the Competency-Based Education, adversely affecting classroom instruction. Mutembei and Nyabisi (2023) further revealed that 76.7% of special education teachers in Kitui County lacked in-service CBE training tailored to learners with visual impairment, indicating significant deficiencies in translating credentials into practical competency-based pedagogy.

In Narok County, Tonui, Nyambura, and Oigara (2021) investigated the effect of teaching methods on the academic success of visually impaired learners in public primary schools under CBE. Their study found that teachers skilled in adaptive strategies such as simplified language, tactile aids, and individualized pacing demonstrated better learner performance outcomes, indicating that pedagogical competence directly correlates with improved achievement in competency frameworks. Despite the breadth of these studies, a persistent gap remains: to date, no specific empirical research explores how teaching methods are deployed to deliver CBE to visually impaired learners. Availability of Learning Equipment for Delivering Competency-Based Education to Learners with Visual Impairment learners at the pre-primary level of learning, yet this stage forms the foundation of learning. This was the interest of the researcher how such learners are taught.



RESEARCH METHODOLOGY

This study adopted a descriptive research design to assess the delivery of Competency-Based Education (CBE) to learners with visual impairment in integrated pre-primary two (PP2) preschools in Narok County, Kenya. This design was appropriate for gathering both quantitative and qualitative data from a diverse sample of teachers, school administrators, and support staff within the target educational settings. The descriptive survey approach was well-suited for investigating the three core aspects of this study: teacher preparedness, the effectiveness of teaching methods, and the availability of learning equipment used to implement CBE for visually impaired learners. According to Creswell and Creswell (2022), descriptive survey designs are effective in capturing participants' experiences, perceptions, and contextual realities in natural educational environments. This approach allows for systematic data collection across a range of integrated early childhood classrooms to reveal teacher preparedness, teaching methods applied and availability of learning equipment for the delivery of CBE in the pre-schools.

The study was conducted in Narok County, Kenya, located in the southwestern part of the country within the Rift Valley region. Geographically, Narok lies between latitudes 0°50'S and 1°50'S and longitudes 35°28'E and 36°25'E, bordering Nakuru, Bomet, Kajiado, and Tanzania to the south. The county is predominantly inhabited by the Maasai community, whose rich cultural heritage is expressed through pastoralism, beadwork, and traditional ceremonies. Pastoralism remains the dominant economic activity, complemented by agriculture, trade, and the thriving tourism sector, particularly around the Maasai Mara National Reserve. In addition to the Maasai, other ethnic groups such as the Kipsigis, Kikuyu, Kisii, and Luo are also found in the region, contributing to its demographic diversity.

The study was conducted in the entire Narok County. There are six parliamentary constituencies in Narok County which include Narok North Constituency, Narok South Constituency, Narok East Constituency, Narok West Constituency, Transmara East Constituency and Transmara West Constituency. The County has nine Sub-counties which include Narok North, Narok South, Narok East, Narok West, Narok Central, Narok Amalo, Transmara South, Transmara East and Transmara West (Narok County Government, 2026). The county also has 30 administrative wards. Narok County has about 985 ECDE centers within the 30 wards (NCG, 2021). There are approximately 52, 384 pre-school learners enrolled in these centers. According to Narok County Government report (2021), there are 843 ECDE teachers employed on permanent and pensionable terms. Over 50, 000 learning materials were distributed to these learning centers over the years (NCG 2026).

Out of the 985 ECDE centers in the county, only 22 of them practice integration of learners with visual impairment. There are also 110 teachers in these 22 integrated pre-schools handling approximately 2,264 learners with visual impairments. Narok County was selected for this study due to significant implementation gaps in delivering CBE to learners with visual impairments in the region. Studies shows that teachers in this region often lack the necessary knowledge, skills and materials to modify their curriculum and teach learners with visual impairments effectively.

The target population for this study comprised of pre-primary two (PP2) teachers, head teachers of the pre-schools, EARC officers, and County ECDE officers involved in the delivery and oversight of Competency Based Education (CBE) for learners with visual impairment in the integrated preschools in Narok County, Kenya. These categories of respondents were selected based on their direct relevance to the study's three objectives, which seek to assess teacher preparedness, examine teaching methods used, and evaluate the availability of learning equipment necessary for inclusive CBE implementation. Specifically, PP2 teachers were responsible for the day-to-day delivery of CBE in classrooms that integrate visually impaired learners with their sighted peers. Head teachers provided instructional leadership, manage learning resources, and support teachers in adapting inclusive strategies. ECDE officers oversee the broader implementation of curriculum policy, training, and monitoring across the county's early childhood education sector. The EARC officers provides professional support to teachers and provide learning equipment in schools. The estimated target population included 110 PP2 teachers, 22 head teachers, 9 ECDE officers and 9 EARC officers, bringing the total to 150 respondents. The total number of Integrated Pre-schools were 22, each with a head teacher, thus representing 22 head-teachers. This population was considered adequate for capturing varied and representative insights into the challenges and practices influencing the delivery of CBE to visually impaired learners in the integrated pre-schools with visually impairments in Narok County.

The study employed a stratified sampling technique to ensure fair and representative inclusion of key stakeholder groups involved in delivering of Competency-Based Education (CBE) to pupils with visual impairment in integrated pre-primary two schools across Narok County. The sample size was obtained from the entire Narok county because of the availability of few Integrated school with V.I learners in the county. Some sub-counties in Narok had no integrated schools, while others had only one integrated school. Thus, this situation necessitated the researcher use samples from the entire county. The population for the study consisted of 110 preschool teachers handling visually impaired learners, 22 head teachers heading the integrated schools with V.I learners, 9 ECDE officers, and 9 EARC officers in Narok county totaling 150 participants. These figures were obtained from the Narok County Government Early Childhood Development Education (ECDE) Department (Narok County Government ECDE Department, 2025). Narok county has nine sub-counties. A representative sample of 109 participants was obtained from the target population of 150 individuals.

To collect data that is both reliable and contextually relevant, this study employed questionnaires, interview schedules, and observation checklists. Questionnaires were administered to pre-primary school teachers to gather quantitative data on the implementation of CBE. The questionnaires were also administered to Head teachers to gather information on teachers' preparedness and availability of learning equipment in the preschools. The use of structured questionnaires allows for efficient data collection from a broad sample while ensuring consistency in responses (Alhassan & Abubakar, 2021).

Data analysis in this study focused on providing a detailed and contextual interpretation of findings related to the delivery of Competency-Based Education (CBE) to learners with visual impairment in integrated pre-primary two schools in Narok County. The study utilized both qualitative and quantitative data analysis methods to comprehensively address the objectives. Qualitative data from observations and interviews were analyzed using thematic analysis, a systematic approach that involves coding, categorizing, and identifying key patterns and themes (Nowell et al., 2017). Observation data was examined to capture teacher preparedness, teaching methods and learning equipment used in the classroom to deliver CBE to the visually impaired learners. Similarly, interview transcripts from teachers, head teachers, ECDE offices, a EARC officers were coded to reveal themes related to teacher preparedness, teaching methods, and availability of learning equipment. The qualitative findings were presented through detailed narrative descriptions, supported by illustrative participant quotes to provide depth and context to the experiences and perceptions of stakeholders (Braun & Clarke, 2021).

Quantitative data collected through questionnaires was analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics including frequencies, percentages, means, and standard deviations summarized the data, offering insights into patterns such as the levels of teacher preparedness, adequacy of learning equipment, and

teaching methods to determine the effectiveness of CBE delivery to the visually impaired learners.

To enhance the clarity and impact of findings, graphical representations such as bar charts, pie charts, and line graphs were used. These visual aids helped convey distributions, comparisons, and trends related to teacher preparedness, resource availability, and learner outcomes, making the results accessible to a wide audience. Overall, the combination of qualitative thematic analysis and quantitative statistical methods provided a robust, triangulated understanding of how Competency-Based Education is delivered to learners with visual impairment in Narok County's integrated pre-primary two learners, fulfilling the study's objectives comprehensively.

Results and Findings

A total of 96 questionnaires were presented to the respondents to give their responses. Teachers were to fill 80 and Head-teachers were to fill 16. All of the questionnaires were filled in and returned to the researcher. The high response rate was considered to be adequate for analysis. Mugenda and Mugenda (2013) and Kothari (2014) indicated that for a descriptive study, a response rate of 70% or above is considered appropriate for data analysis.

The interviews included 32 respondents i.e. 16 Teachers, 4 Head Teachers, 7 ECDE officers and 6 EARC officers. All the respondents scheduled for interviews were interviewed. The researcher also scheduled 16 teachers for physical observation as they conducted their lessons in the classroom. All the 16 teachers were available and observed.

Data on demographic profile of respondents indicated that from the 80 teachers who were participants of the study. It is evident that there were more female teachers(n=46) than their male counterparts (n=34) in the schools. This is translated in their general preparedness in handling the visually impaired learners in terms of choice of teaching method, learner involvement in the lessons and use of appropriate learning equipment in class. The female gender is generally seen to be motherly and having a general concern of the welfare of the children compared to their male counterparts. This can contribute to effective delivery of CBE to the learners with visual impairments in the school.

Data On academic qualification indicated that among the 80 teachers, 7 had a bachelor's degree of education while 47 had diploma in education and 26 had certificate in education. The higher the academic qualification in education, the more prepared the teacher was in delivering CBE to the learners with visual impairments in terms of the teaching methods they use in class and the use of learning equipment they choose to deliver the lessons. From the data, it was therefore notable that majority of the teachers had adequate knowledge in delivery of CBE.

Data on teaching experience indicated that a high number of respondents had experience of 6-10 years (n=29, 36%), followed by those with between 11 and 15 years(n=26), 32%, the next was between 0-5years (n=13, 17%) while the least was over 15 years (n=12, 15%). The higher the experience, the more adaptable the teacher was to the changes in curriculum and to improve on teaching methods and materials that enables effective delivery of CBE to the learners.

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Teacher Preparedness

Interpretations from Lesson Observations

Teachers (80 in number) were asked in the questionnaires to rate their level of preparedness in delivering CBE to the V.I learners. They were to state whether they were very prepared or less prepared. The findings revealed that a higher majority of teachers(n=51,64%) believed that they were very prepared while only a paltry of 36%(n=29) indicated that they were less prepared. The confidence of the teachers in believing in their abilities to offer effective instruction with use of proper learning equipment was appealing. This affirmation of the majority would send signals that actually they were very prepared in delivery of CBE and that CBE was effectively being delivered to the V.I learners in terms of lesson adaptations, use of adaptive teaching methods and learning equipment; and that the learners were acquiring necessary competencies that would promote their survival in future endeavours. However, what the researcher found as a result of physically observing the lessons offered by teachers in the classrooms revealed contradictory findings. These findings stated that actually, majority of the teachers were not effectively prepared contrary to their statements. Lesson observations were conducted on a total of 16 selected teachers. Key indicators listed in the lesson observation schedules that teachers had to exhibit to prove their level of preparedness included: Teaching methods used, availability and use of learning equipment, Innovativeness and creativity of the teacher, content delivery, learner

involvement and use of professional documents i.e. lesson plan and lesson notes. The findings were as presented on the table 1 below.

Behavior/Competency to observe	Behavior observed		Behavior not observed	
	Number	Percentage	Number	Percentage
Appropriate Teaching method used	7	44	9	56
Varied teaching methods	8	50	8	50
Availability and use of learning equipment	6	38	10	62
Innovation and creativity	7	44	9	56
Learner involvement	4	25	12	75
Content delivery	13	81	3	19
Availability and use of lesson plan and notes	9	56	7	44

From the findings, it was revealed that majority of teachers(n=9) constituting 56% were less prepared in delivering CBE to the V.I learners based on the use of appropriate teaching methods. The teaching methods that the researcher considered appropriate were those which actively engages learners in the classroom e.g. individualized learning and peer tutoring. It was observed that lecture method dominated the instructional process, with teachers mainly relying on chalk and talk in the entire lesson. These practices indicated that the V.I learners in the integrated schools were getting raw deal in terms of getting the best adaptive classroom instructional practices from the teachers that would promote the acquisition of proper knowledge and skills in the learners. Consequently, the delivery of CBE to the V.I learners was less effective.

Regarding learner involvement in the lesson, it was observed that 75%(n=12) of teachers did not actively involve learners in the lessons. Learner involvement is a key component in CBE curriculum that enables the acquisition of desired competencies like communication and collaboration, critical thinking and problem solving. Based on observations, Teachers hardly gave out tasks, rarely used peer-assisted learning and group work to encourage learner involvement and interaction. Teachers rarely called out students by name frequently and letting them involve in discussions, and providing them with early notices to prepare. Data from questionnaires also supported this claim by revealing that 82%(n=66) of the teachers mainly relied on lecture method of teaching which rendered learners as passive participant in the learning process. The wanton disregard of the learners as active participants in the lesson was therefore a big obstacle in the delivery of CBE as it was denying the learners an opportunity to acquire the key competencies of CBE in the best manner.

Regarding possession of professional documents, the study revealed that 56%(n=9) of the teachers had lesson plan and notes. This was very good on the part of the teachers as

possession of these documents was a sign of good preparation. However, there was a contradiction on how a majority of teachers who possessed these documents failed the test of passing as a well prepared teacher in terms of lesson delivery, use of appropriate teaching methods and learning equipment. Preparation of professional documents by teachers for use in classroom instruction is a key requirement of CBE curriculum as it helps the teacher to plan well for instructional methods, learning materials and learning activities in the classroom. Teachers must have these documents as a sign of effective preparation for their lessons. A teacher who teaches in class without these documents is deemed not well prepared to deliver that lesson. The lesson plan enabled the teachers to plan for time, resources and instructional approaches in a manner that enabled them to administer their lessons well in line with the CBE curriculum requirements. However, it was worth noting that possession of these documents alone was not helpful in making the teachers adequately prepared to deliver the lessons. Preparation amount to quality of the documents and how effectively their contents are implemented in classroom, a manifestation that was not observed among the majority of teachers. Consequently, this finding was an indicator that CBE was not being effectively delivered to the V.I learners.

Regarding innovation and creativity of the teachers, it was revealed that majority of teachers (56%, n=9) lagged behind in proving that they were innovative and creative in teaching their lessons. This was a big concern especially where data from questionnaires revealed that learning equipment available in the schools were inadequate in respect to the total number of learners in the preschools i.e. one learning equipment was shared against eight learners (ratio of 1:8). In the shortage of learning equipment, teachers were expected to be creative and improvise some of the materials/equipment, however, this was not the case. What was observed included teachers relying more on traditional/lecture methods of teaching. This information was corroborated with data from the questionnaires which also revealed that 82%(n=66) relied on lecture method. This lack of creativity led to treatment of all learners the same way despite their varied learning styles, abilities and interests. Thus, many learners seemed disengaged from learning. This inadequacy in creativity and innovation was taken as a big hinderance to effective delivery to the V.I learner. Creativity also implied use of varied instructional equipment/materials. However, this was not the case of half of the teachers 50%(n=8) who never exhibited adequate use of varied instructional materials/equipment in the classroom. Teachers were seen to verbalize everything/ explicitly describing everything written on the board or performed during a demonstration. In addition, half of the teachers (50%, n=9) could not use real 3D models to represent abstract concepts e.g. tactile maps and physical models instead of drawings. This limitation in variations in instructional methods showed that indeed these categories of teachers were ineffectively delivering CBE to the V.I learners as requirement of CBE curriculum that postulates that teachers should use varied learning materials/equipment that greatly promote learner involvement and understanding of the concepts taught. The absence of varied instructional equipment in the classroom as exhibited by half of the teachers clearly demonstrated that the learners under their instruction were being ill-prepared in acquiring the key competencies advocated by CBE.

On a positive note, concerning teacher preparedness, data from lesson observations showed that 81%(n=13) of the teachers had good mastery of lesson content compared to a paltry number (n=3, 19%) of their counterparts who showed inadequate mastery of content. Teachers were able to explain complex concepts simply, accurately and effectively to the V.I learners. Teachers also were able to predict where the learners struggled and built scaffolds to support them. The display of mastery of content by the teachers was good in that learners were at least able to acquire some knowledge and skills that are benefitable to their lives.

For further clarification on the response above on teacher preparedness, teachers were asked to give reasons why they either felt prepared or not prepared in delivering CBE to the V.I learners. In response to this question, teachers stated reasons like classroom dynamics, negative attitudinal barriers, time constraints, limited institutional support, inadequate training and resource constraints. Almost all of their responses leaned toward reasons of unpreparedness rather than reasons for preparedness. A majority of teachers (n=69, 86%) had challenge of classroom dynamics as a factor limiting their level of preparedness. They said that, high population to textbook ratios and the challenge of managing visually impaired learners alongside regular class tasks greatly strained them to effectively prepare for lessons for V.I learners. This scenario depicted a sad state for the V.I learners as integration with normal students in the classroom could make teachers to give less attention to them in terms of lesson preparation. Only a small percentage (14%, n=11) had no challenge on classroom dynamics. To these teachers, they had the capability to prepare their lessons to suit both the V.I learners and the normal learners in the integrated classrooms. This indicated that truly CBE was effectively delivered to the V.I learners but to a lesser extent.

Time constraints had a play in determining teacher preparedness. Majority of the teachers (n=62, 78%) viewed time availability as an impediment to their preparedness. These teachers indicated that they often lack enough time to prepare specialized materials, adapt curriculum content or to offer one-on-one attention to learners in the classroom. Proper management of available time is one of the key training teachers are given as part of their pre-service training. Therefore, teachers were expected to plan for their lessons well to enable them utilize the lesson allocated well, however this was not a case of these majority teachers. In view of these findings, majority of the teachers were not effectively delivering CBE under the cover of time constraints. However, a paltry number of teachers (n=18, 22%) proved effective in the delivery of CBE by having the ability to plan for their lesson instruction in light to the available time. Thus, learners under their instructions were able to benefit a lot and improve on their abilities and potentials.

Negative attitudinal barriers played a key role in determining teacher preparedness in administering the classroom lessons to the V.I learners. This was attested by the greater number of teachers (n=53, 66%) who exhibited fear, uncertainty and low expectations regarding the ability of V.I learners. The impact of this great number was immense to the

delivery of CBE. This was because such teachers were not able to offer proper support to the V.I learners both in classroom and in out of classroom activities. Evidently, CBE was not being effectively delivered to the majority of V.I learners based on these findings. In contrary, there existed a small number of teachers who exhibited positive attitude in handling the V.I learners both in and out of the class activities. This was great, bearing in mind that the V.I learners were more fragile than the normal learners without V.I and thus required greater care and assistance in the school. This care and assistance could only be provided by the teachers in school.

Pre-service Training to handle V.I Learners

Head teachers were asked to state the number of teachers who were directly involved in teaching learners with visual impairments in the schools and whether those teachers possessed pre-service training on handling V.I learners. Data from the questionnaires revealed that 150 teachers were directly involved in teaching the V.I learners in the preschools. Out of these 150 teachers, it was revealed that those with pre-service training in teaching V.I learners were slightly higher in number at 76(51%) than those with no formal training in handling V.I learners which constituted almost half of the total number of teachers sampled at 74(49%).

Equipping teachers with relevant training to handle the V.I learners is a key component in CBE curriculum. Teachers with relevant training are able to teach learners effectively using relevant teaching equipment, instructional methods and use adaptive innovations and creativity in the classroom. However, with almost half of the teachers (n=74, 49%) not having relevant training to handle V.I learners, the effective delivery of CBE to the learners under these teachers with inadequate training becomes less effective. A huge chunk of learners was therefore not benefiting from the CBE just their counterparts who were handled by teachers with relevant training. It was also worth noting that having pre-service training among the majority of the teachers did not automatically translate to them effectively prepared in handling their lessons in classroom. Data from lesson observations revealed that even these categories of teachers who had pre-service training still exhibited no meaningful competency in effectively delivering their lessons.

Capacity Building for V.I Teachers

From the questionnaires, Head teachers (16 in number) were asked how they frequently took their teachers for in-service training.

With nearly half of the teachers (n=74, 49%) not having pre-service training on handling V.I learners, it was also important to ascertain if this portion of teachers were subjected to on-the job capacity building/in-service courses to equip them with knowledge and skills in handling the V.I learners. Thus, head teachers were asked to state how they frequently subjected their teachers handling the V.I learners to in-service training/capacity building. The findings were shocking in that a greater percentage of the Head teachers (56%, n=9) indicated that they rarely subjected the teachers handling the V.I learners to in-service

training; while a significant minority of Head teachers (n=3, 19%) indicated that they never subjected their teachers to in service training. With nearly half of the teachers inadequately trained, and also not being subjected to on-the-job in-service training to handle the V.I learners, it was disastrous to the key objective of delivery of CBE which aimed inculcating desired competencies to the learners. Even to those teachers who had relevant training on handling V.I learners, they required constant in-service training to equip them with new pedagogical approaches in handling the V.I learners. These would enable them embrace more adaptive learning equipment and teaching methods in the classroom that promotes learner involvement, consequently ensuring fulfilment of learner capabilities and desires. However, positive responses were obtained from 25%(n=4) of the head teachers who stated that they were constantly subjecting their teachers to capacity building courses. This category represented head teachers who truly understood the importance of having teachers who were effectively prepared in handling the learners, as these teachers would have up-to-date knowledge and skills necessary for handling V.I learners.

Interviews from the teachers, Head teachers, ECDE officers and EARC officers provided further insights in understanding teacher preparedness in terms of having relevant training for the V.I learners in the preschools. Teachers were asked to state whether or not they had any pre-service, in-service or continuous professional development training on handling V.I learners. The findings revealed that majority of the teachers (n=9, 57%) had no relevant training related to in-service and pre-service. Their responses corroborated those of the head teachers who revealed in the questionnaires that majority of the teachers (51%) had no pre-service training. Due to inadequate in-service training offered to the teachers, it was worth noting that the majority of V.I learners missed a lot in terms of getting access to improved teaching methodologies and instructional skills that would have been offered to them by the teachers who had been subjected to in-service training. With inadequate exposure to in-service training, the teachers' skills in using modern equipment and digital resources in the teacher's lessons could also not be improved. This lack of improvement would consequently render learners merely as passive participants in the learning process thus hindering the delivery of CBE. To expound further, in-service training equips the teachers with new skills in meeting the specialized need of the learners with V.I. Regular training also offers teachers confidence and job satisfaction. If this was missing among the majority of the teachers, then it probably translated to teachers with burn out who could not effectively teach to deliver CBE to the learners in the expected manner.

From the interviews, ECDE and EARC officers were asked to state the measures that they were undertaking to assist teachers handling the V.I learners in terms of capacity building. Majority of these officers gave nearly same answers. The most dominating answer was providing in service training to the teachers on how to handle the V.I learners in the preschools. The trainings, as they said, covered the use of adaptive pedagogies, use of adaptive teaching and learning technologies and equipment, creating a conducive learning environment among other aspects. The EARC officers even stated further that, they collaborated with Kenya Institute of Special Education (KISE) to enroll some teachers for

a three-month course at KISE. This course aimed at enhancing teachers' capacity in using assistive technology and adaptive curriculum to enable the teachers to effectively deliver CBE to the learners with V.I. However, what remained unclear was the frequency to which they provide these trainings to the teachers, as findings of this study revealed that a majority of the teachers were not being subjected to capacity building courses. Thus, the sentiments of the ECDE and EARC officers that they provided capacity building to teachers were found to be assertions which had no greater impact in improving the capacity of the teachers to effectively handle the V.I learners.

In the interviews, the EARC officers also stated that they placed learners in schools based on the teacher's capacity to handle the learners. Probed further for clarity to this statement, the EARC officers stated that majority of the V.I learners were placed in schools which had teachers with relevant training to handle the V.I learners. Though this was a good step by the EARC officers to ensure that the V.I learners benefit from the delivery of CBE using teachers with relevant training, it was still shocking that such numbers of teachers with relevant training was still inadequate. Consequently, this would lead to scenario where the few teachers with relevant training were overwhelmed by the high number of learners in the classroom. The end result would be a CBE with constraints in its delivery to the learners in respect to qualified teachers.

Training Methods Mainly Used

From a checklist provided in the questionnaire, teachers (80 in Number) were asked to indicate the teaching methods that they mainly used in the delivery of CBE to the V.I learners. The methods listed in the checklist included: Lecture/traditional method, Multisensory approach, Auditory instruction, Individualized learning and peer tutoring.

Table 2: Training Methods Mainly Used

No.	Teaching Method	No. of Teachers	Percentage
1	Lecture/traditional	66	82
2	Multisensory Instruction	30	38
3	Auditory Instruction	65	81
4	Individualized learning	32	40
5	Peer tutoring	19	24

The use of appropriate teaching methods in classrooms is key in enhancing student engagement, boosting retention and catering to diverse learning styles. The CBE curriculum also emphasizes on the choice of teaching methods that enables the learners to acquire the key competencies such as imagination and creativity, self-efficacy citizenship and digital literacy. In the questionnaires, teachers were asked to state the teaching methods that they mainly used in the delivery of CBE to the V.I learners. From the list of teaching methods listed in the questionnaires, the teachers were to select the teaching method(s) that they mainly used in the delivery of CBE to the learners with V.I. The findings revealed that the most dominant teaching methods used were Lecture/Traditional method at 82%(n=66) and

Auditory Instruction at 81%(n=65)). On the other hand, more effective teaching methods like Individualized Learning, Multisensory Instruction and Peer Tutoring were less dominant at 405(n=32), 38%(n=30) and 24%(n=24) respectively.

It was worth noting that, the lecture method which was started by the teachers as one of the dominantly used, is always considered as least effective method of teaching and therefore should not have constituted a greater percentage of the lesson time in the classroom. To corroborate this statement of teachers on the dominancy of lecture as an instructional method, data from lesson observations also was in concurrence. In the lesson observations, 56%(n=9) of the teachers were found to be using inappropriate teaching methods. The researcher considered a teaching method as inappropriate if it rendered the learners mostly as a passive listener in the learning process. The dominant use of lecture method meant that most learners were treated as passive listeners with little engagement. This would lead to boredom and reduced retention of information among the learners. In this perspective CBE could not effectively be delivered to the V.I learners. The dominancy of this method in the instructional process also meant that majority of the teachers could not properly gauge student comprehension during the lecture, making it hard for the teacher to adjust his/her teaching as the lesson progresses. Thus, when teachers could not effectively gauge student comprehension due to over-relying on lecture, then it meant the acquisition of the core competencies by the learners as outlined in the CBC curriculum was under jeopardy.

Conversely, peer tutoring 24%(n=19) and individualized learning 40%(n=32) which were considered as most effective and should be used were found to be the least used by the teachers. These methods were considered effective by the researcher as they have been found to actively engage learners in the learning process. When learners are actively engaged in the learning process, learning becomes more meaningful and interesting to them hence they develop more capability to acquire the key competencies of the CBC. Data from lesson observations also added more insight on the issue of learner engagement in the learning process. Based on the observations, majority of the teachers 75%(n=12) inadequately engaged the learners in their lessons. There was less use of projects, group discussions, peer tutoring, individualized learning among others in the teachers' lessons. The absence of these active learning methods therefore indicated that the CBE was not being effectively delivered to a majority of learners who were under these teachers not using active learning methods of teaching.

On a positive note, majority of the teachers (82%, n=66) indicated that they were using auditory instruction method to deliver the lessons. If this was to go by, then it meant that at least CBE was to some limited extent being effectively delivered to the V.I learners. In auditory instruction, teachers use consistent verbal descriptions, audio books, screen readers, and sound based cues to enhance learning and independence. The wide use of this method among the teachers was interpreted as beneficial to the learners and would effectively promote their acquisition of key competencies outlined in the CBE. Thus, CBE was effectively being delivered to the learners based on this parameter.

In the interviews, asked to give reasons why they preferred the teaching methods that they indicted they mainly used to the other teaching methods they did not use mainly, the teachers gave varied statements that were summarized as follows: Key statements that were captured included faster delivery of content to utilize the limited time allocated for the lessons, lack of experience in using other teaching methods for example peer tutoring, shortage of learning equipment need for some methods of teaching hence going for the easiest route like lectures, and lastly learners reluctance to embrace some teaching methods like individualized learning and peer tutoring. From the statements, it was realized that most of the factors listed by the teachers as an impediment to selecting a teaching method could easily be managed and wholly depended on proper planning and creativity on the side of the teacher. Teachers who planned well were able to use learner centered methods within the limited allocated time. Creative teachers could be able to improvise learning equipment to counteract the shortage of such equipment in the school. Teacher's approach to a learner should be able to make the learner to like a particular teaching method.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Concerning teacher preparedness in delivering CBE to the V.I learners, the researcher concludes that though majority of the teachers (64%, n=51) believed that they were very prepared, data from lesson observations proved that they were inadequately prepared in terms of teaching methods and use of learning equipment. Concerning teaching methods mainly used, the study revealed that less effective teaching methods such as lecture dominated the instructional process at the expense of more effective teaching methods. Thus, CBE was not effectively being delivers with the dominant use of less effective teaching methods. Regarding availability of learning equipment, the study revealed that the learning equipment available in the schools was inadequate. This is because the ratio of learning equipment to the learners was found to be 1:9 depicting a serious shortage.

Recommendations of the Study

This part provides the recommendations that the county government and other education stake holders need to implement so as to promote effective delivery of CBE to learners with visual impairments. Further the part suggests areas of interest that more research is required so as to provide relevant information for improving learning for the students having visual impairment and other special needs.

Recommendations for Policy

(a) There is need for county governments to employ more teachers with relevant training in handling the V.I learners in the integrated preschools, especially those preschools with shortages, so as to equip such schools with teachers who are effectively prepared to handle the V.I learners.

(b) There is need for the county ECDE officers and other stake holders like the EARC officers to come up with strategies to provide capacity building for teachers teaching the V.I learners through seminars, in-service training and workshops in order to empower them with up-to-date knowledge needed in handling V.I learners.

(c) The county government and the EARC department should conduct more resource mapping in the integrated preschools, identify the gaps and facilitate access to specialized instructional materials and equipment tailored to learners with V.I especially in schools with dire shortage to this equipment. This would help the teachers to improve on their instructional approaches thus promoting effective delivery of CBE.

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