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THE RELATIONSHIP BETWEEN ADAPTED TEACHING STRATEGIES AND THE TEACHING OF FUNCTIONAL SKILLS TO LEARNERS WITH CEREBRAL PALSY IN SPECIAL UNITS IN KILIFI COUNTY, KENYA

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Abstract:
Learners with cerebral palsy (CP) often have great difficulty obtaining functional skills necessary for autonomous life. Teaching these functional abilities calls for modified curricula that fit the student's particular requirements. This study looked at how learners with CP in special units in Kilifi County, Kenya's customized teaching methodologies affected their instruction of functional abilities. Using thirty special needs education-trained teachers spread throughout four special units, a correlational study was conducted. Interviews, observation checklists and questionnaires all helped to gather data. Descriptive statistics, Pearson correlation and linear regression analysis were used to examine quantitative data. Qualitative data were thematically examined. Adapted teaching strategies and effective functional skills instruction showed a clear positive connection ($r = 0.61$, $p = 0.01$). Teachers using tailored, task-specific, learner-centered approaches saw notable changes in students' self-care, communication, mobility and social engagement. More general acceptance of adaptive techniques was hampered, nevertheless, by restricted professional development opportunities and financial restraints. This study emphasizes the important part adaptive methods play in helping students with CP become independent and provides suggestions for how policy support, teacher preparation and resource allocation could be improved. Concerning global approaches in special needs education, implications are also covered.

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Keywords: adapted teaching strategies, functional skills, cerebral palsy, individualized instruction, inclusive education, special units

1. Introduction

Affecting over 2 to 2.5 per 1,000 live births worldwide, cerebral palsy (CP) is acknowledged as the most frequent motor disability in childhood (Oskoui *et al.*, 2013). Often coupled by impairments in sensation, cognition, communication and behavior, CP is defined by a collection of permanent mobility and posture disorders (Rosenbaum *et al.*, 2007). Achieving autonomy, engaging in community life and reaching a better quality of life depend critically on the learning of functional skills, including mobility, communication, self-care and social interaction for people with CP (Novak *et al.*, 2020; World Health Organization, 2011).

The scene of global policies has stressed more and more the need of inclusive education and fair possibilities for students with disabilities. Goal 4 of the Sustainable Development Goals (SDGs) further calls for inclusive, fair and quality education for everyone (UNESCO, 2016). Explicitly noting the right of persons with disabilities to education free from discrimination and based on equal opportunity, the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006) aim to eradicate inequalities in educational access and outcomes. The Salamanca Statement (UNESCO, 1994) is still a basic text using flexible curricula, adaptable teaching practices and enough resource support advocating for schools to accommodate all students regardless of physical, intellectual, social, emotional, linguistic or other impairments.

Notwithstanding these legislative changes, significant challenges still exist globally in implementing inclusive education concepts, particularly in low- and middle-income countries (LMICs). Research shows that lack of teacher education, inadequate assistive technology, unfavorable society attitudes and limited resource allocation still impede the implementation of effective functional skills training for students with disabilities (Engelbrecht *et al.*, 2017; Kuyini *et al.*, 2018). Teaching individuals with CP requires particular teaching strategies that change traditional pedagogy to match their particular motor and cognitive profiles. Adapted instructional strategies, including task analysis, differentiated instruction, use of visual aids and assistive devices (Kennedy & Ihle, 2012; Mäkelä & Vellonen, 2018) are clearly important in promoting functional independence among students with impairments.

Policies covering the Basic Education Act (2013) and the acceptance of the Competency-Based Curriculum (CBC), which prioritizes practical skill development for all students, have progressively addressed the education of learners with disabilities in Kenya (Ministry of Education, 2019). Still, the real use of changed teaching strategies is still inadequate, particularly in rural communities like Kilifi County where systematic barriers, limited teacher capacity and resource constraints reign (Chemagosi, 2020; Muriithi, 2018). Kilifi County provides a necessary environment for examining how well-

fitted teaching practices improve the acquisition of functional abilities among learners with cerebral palsy, given its higher-than-average frequency of the condition.

Although several Kenyan studies have focused on general issues of inclusive education, there is insufficient empirical data, particularly focusing on the relationship between changed teaching strategies and functional skill development among children with CP. Most recent research has concentrated either on teacher attitudes toward disability (Muriithi, 2018) or general barriers to inclusion without relating to instructional adaptation, especially to learner results (Directorate of Special Needs Education, 2019).

This study examines how students with cerebral palsy in public special units in Kilifi County, Kenya, get customized teaching strategies and the learning of functional abilities in order to bridge this difference. Awareness of this link will help Kenya's educational outcomes to be improved and guide global practices on how best to promote functional independence among learners with disabilities in different educational environments.

2. Research Questions

This study was guided by the following research question:

- What is the relationship between adapted teaching strategies and the teaching of functional skills to learners with cerebral palsy in special units in Kilifi County, Kenya?

3. Literature Review

3.1 Functional Skills Development for Learners with Cerebral Palsy

Cerebral palsy is a group of permanent disorders affecting the development of movement and posture, leading to activity limitations (Rosenbaum *et al.*, 2007). Many times, students with CP need focused treatments to acquire fundamental functional abilities required for autonomy. Foundational for academic access and community involvement are functional skills including feeding, clothing, toileting, communication and basic movement (Novak *et al.*, 2020). Early organized and customized therapies improve functional results for children with CP, therefore enhancing their quality of life and long-term independence (Novak *et al.*, 2020; World Health Organization, 2011).

3.2 Adapted Teaching Strategies for Functional Skill Acquisition

Teaching functional skills to learners with cerebral palsy (CP) requires the use of adaptive and individualized instructional strategies to address the unique motor, cognitive, communication and social needs of these learners (Mäkelä & Vellonen, 2018). Boosting the independence and quality of life of students with CP depends on functional abilities like mobility, self-care, communication and social interaction (Hassan & Islam, 2020). The teacher's capacity to modify instructional strategies, make use of assistive technologies, and apply learner-centred pedagogical techniques will determine how well these skills

are delivered (Reis *et al.*, 2010). Despite worldwide focus on inclusive education and policy frameworks supporting learners with disabilities, there is scant evidence on the methodical adaptation of teaching practices to address the particular functional skill demands of learners with CP, especially in low-resource environments.

One of the most important components of good special needs education is clearly the customization of instructional methodologies. Kennedy and Ihle (2012) noted that teachers had to develop Individualized Education Programs (IEPs) based on exhaustive assessments of students' functional capabilities and needs. The 2017 Council for Exceptional Children stressed even more how crucial it is for teachers to fit their instructional approaches to the developmental profiles and constraints of their pupils in order to promote functional skill acquisition.

Based on a thorough study by Novak *et al.* (2020), task-specific training, goal-directed activities, and augmentative and alternative communication (AAC) device use rate are among the most successful techniques for teaching functional abilities to children with CP. The assessment encouraged teachers to offer intensive, repeated, significant practice to improve motor abilities and daily functioning activities as well as to apply evidence-based approaches in their classroom activities.

Learner-centred approaches, according to Mäkelä and Vellonen (2018), considerably improved functional outcomes for students with CP in Finland by means of tailored education, task analysis, and assistive technologies. Similarly, Vellonen *et al.* (2021) discovered that applying adaptive strategies employing digital learning tools enhanced communication skills in students with CP, particularly when tailored to the distinctive needs of every learner.

Recent studies on technology-assisted teaching strategies, including virtual reality and computer-based interventions, showcased how much mobility and self-care skills children with CP had developed recently by Rios-Rincón *et al.*, 2023. The study underscored the requirement of teacher preparation in the successful deployment of current technologies in learning environments.

Ahmad (2015) and Hutchinson and Martin (2020) underscored continuous differences between knowledge and practice, even if many teachers lacked the practical skills to change their teaching. Many of them were so uninformed about effective strategies. Emphasized as the benefit of universal design for learning (UDL), ideas in supporting functional skill acquisition were their support of teacher preparedness, which is commonly disregarded.

Poor professional development, limited access to assistive technology, and insufficient instructional resources make it quite challenging for African teachers to modify their strategies. While inclusive education regulations were adopted in South Africa, Engelbrecht *et al.* (2017) discovered that many teachers lacked the capacity to employ adaptive instructional strategies for children with CP.

According to Akyeampong and Fobih's 2022 Ghanaian research, despite policy reforms, instructors lacked systematic instruction on differentiated instruction and

adaptive techniques. Based on their research, most teachers applied traditional, whole-class strategies that fell short of meeting the several learning needs of pupils with CP.

Mantey (2017) noted that many Ghanaian teacher training courses overlooked adaptive teaching strategies for instruction in functional skills. Lack of practical teaching on the use of AAC and assistive aids explained limited progress in learners' communication and self-care abilities.

Underlined in Nigeria by Iyeoma and Toyosi (2017), teachers in Nigeria sometimes lacked the pedagogical knowledge required to adapt and change courses for students with physical constraints. The study recommended adding adaptive approaches to both pre-service and in-service training courses in order to address these issues.

East Africa still lacks much research on adaptive teaching strategies for pupils with cerebral palsy. Teacher preparation in Kenya, Uganda, and Tanzania, according to Mugo, Orangi and Singal (2010), largely focused on academic instruction rather than the development of practical skills. Teachers cited limited access to assistive technologies and adaptive learning tools, so hindering the adoption of diverse teaching strategies.

Most of the teachers in inclusive classrooms in Mukuria and Korir (2017) in Kenya lacked the capacity to modify their courses for students with CP. Policy frameworks supporting inclusive education notwithstanding their recommendations for practical application of adaptive methods remained low because of inadequate teacher training and limited exposure to best practices.

Recent Chemagosi (2020) studies in Kilifi and Nandi counties revealed that teachers lacked both training and access to adaptive educational strategies, which resulted in insufficient development of functional abilities among children with CP. Chemagosi noted that while policies were in place, there was a paucity of coordinated capacity-building initiatives aimed at giving teachers practical expertise.

One clear difference in the application of inclusive education is the way teachers treat pupils with cerebral palsy. According to King'sori, Mwangi and Mugo (2015), many teachers in special education lacked the capacity to distinguish between different forms of CP, therefore limiting the application of adaptive teaching methodologies catered to individual functional needs.

Special needs teachers sometimes lacked training in adaptive teaching strategies like the use of AAC technologies, structured communication approaches and task analysis, according to Ndambuki and Nzomo (2018). Learners with CP were thus regularly exposed to broad instructional strategies that failed to meet their particular functional skill needs.

According to the 2015 Kanana, instructors in Machakos and Kiambu counties mostly applied teacher-centered approaches, which reduced student involvement and participation. To help functional skill development, the study advised a change towards learner-centred, adaptive teaching methodologies, including hands-on learning and varied training.

Similar results were obtained by Wang'sang's 2013 study of special school instructors' insufficient training to modify and differentiate their instructional tactics for

students with several disabilities, including CP. Said to be inadequate were support services, including access to resource materials and assistive devices.

The Ministry of Education (2018) acknowledged the need to enhance the provision of inclusive education in Kenya through the Competency-Based Curriculum (CBC), which emphasizes practical and functional skills development. However, recent evaluations have highlighted persistent gaps in teacher preparedness and resource allocation, particularly in rural counties like Kilifi.

There is a notable lack of CP-specific pedagogical adaptations in Kilifi County, according to research. According to Chemagosi (2020), a large number of teachers in Kilifi special units did not have formal plans to meet the functional requirements of their students who had cerebral palsy. Consequently, students showed regression in developing abilities related to movement, communication, and self-care.

According to the Kilifi County Directorate of Special Needs Education (2021), the lack of adaptive teaching strategies and limited teacher training contributed to poor learner outcomes in functional skills development. Despite national policies promoting inclusive education, no localized study had systematically examined the extent to which teachers in Kilifi County adapted their teaching strategies for learners with CP.

3.3 Barriers to Implementation of Adapted Strategies

Although adaptive pedagogies have data proving their success, systematic obstacles may prevent their regular implementation. Factors include poor teacher training, lack of assistive devices, high class sizes and unfavorable society attitudes regarding disability, which hinder the use of adapted techniques in low- and middle-income countries (LMICs) (Kuyini *et al.*, 2018; Engelbrecht *et al.*, 2017). Kuyini *et al.* (2018) conducted a study in Ghana that found that a lack of resources and institutional support limited teachers' practice even in cases when they had good opinions about inclusive education. In Kenya, Chemagosi (2020) also discovered that many special education teachers lacked specific knowledge in adaptive strategies, therefore affecting their capacity to impart functional skills to students with CP.

3.4 Research Gap and Rationale for the Study

Although a lot of studies have been done abroad on functional skills acquisition and adapted instruction, few studies, especially for students with CP in rural special units, have specifically looked at these dynamics within the Kenyan setting. Previous studies have mostly concentrated on teacher opinions about inclusion (Muriithi, 2018) or on general difficulties facing special needs education (Directorate of Special Needs Education, 2019). This study thus fills in a significant void by investigating the direct association between modified teaching strategies and the teaching of functional skills in a particular and under-researched population for learners with CP in Kilifi County. Results of this study have ramifications for local educational policies as well as the more general worldwide debate on inclusive education.

4. Methodology

4.1 Research Design

This study adopted a **correlational research design** to examine the relationship between adapted teaching strategies and the teaching of functional skills to learners with cerebral palsy in special units. Correlational research design is appropriate when the objective is to determine the degree and direction of association between two or more variables without manipulating them (Fraenkel, Wallen, & Hyun, 2012). This design enabled the researcher to explore how variations in the use of adapted teaching strategies are associated with variations in learners' acquisition of functional skills in a naturalistic educational setting.

4.2 Study Area

The research took place in Kilifi County, on Kenya's coast. Compared to other counties, Kilifi County has a high incidence of cerebral palsy, which can be partially ascribed to past deficiencies in mother and child healthcare systems (Ministry of Health, 2018). The area is mostly rural, and students with impairments have limited access to specific learning tools. For students with impairments, particularly those with cerebral palsy, special teams affiliated with regular public schools provide the primary source of instruction.

4.3 Target Population and Participants

All special needs education teachers employed in public special units serving Kilifi County students with cerebral palsy made up the target population. Participants were chosen using a purposive sample method depending on their direct experience teaching CP students and their participation in functional skill development.

Thirty special needs education teachers in all were chosen from four public special units spread around the county. With experience spanning from two to twenty years, the participants comprised male and female teachers. Every participant had at least a diploma in special needs education, therefore guaranteeing a minimum degree of professional competence.

4.4 Data Collection

Data collection was done with three main instruments:

4.4.1 Structured Inquiry Tool

The questionnaire gathered details on teachers' demographic characteristics, frequency and kinds of modified instructional tactics used and judged results in functional skill development.

4.4.2 Observation Checklist

With an eye toward the adaptation of instructional tactics to individual learner needs, a systematic checklist was employed to track real-time teaching practices throughout classroom sessions.

4.4.3 Semi-structured Interview Guide

To obtain a more in-depth qualitative understanding of their experiences, challenges and opinions on changing their instruction to suit functional skill development, follow-up interviews were conducted with certain teachers.

4.5 Validity and Reliability

Special needs education professionals examined the tools to determine content validity and offered comments on their relevance, clarity and comprehensiveness. Necessary changes were made in line with advice.

A test-retest process involving a small group of five special needs teachers not engaged in the final research tested dependability. While the semi-structured interview guide provided a coefficient of $r = 0.80$, showing reasonable levels of internal consistency according to research norms, the observation checklist yielded a reliability coefficient of $r = 0.78$.

4.6 Data Collection Procedures

Data collection was conducted in three sequential phases:

4.6.1 Questionnaire Administration

Teachers were first given the structured questionnaire to complete individually. Assistance was provided where clarification was needed.

4.6.2 Classroom Observations

Using the observation checklist, classroom practices were observed without interfering with ongoing teaching activities. Each teacher was observed for at least two full sessions.

4.6.3 Interviews

Semi-structured interviews were conducted with a sub-sample of ten teachers, selected to ensure diversity in terms of teaching experience and school setting.

All data collection activities were conducted over a period of six weeks.

4.7 Data Analysis Techniques

4.7.1 Quantitative data

Quantitative data from the questionnaires and observation checklists were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics (frequencies, percentages, means and standard deviations) were used to summarize the data. Pearson Product-Moment Correlation was employed to determine

the strength and direction of the relationship between adapted teaching strategies and functional skill teaching. Simple linear regression analysis was used to assess the predictive value of adapted strategies on functional skills outcomes.

4.7.2 Qualitative Data

Qualitative data from interviews were analyzed thematically. Transcribed interview data were coded, arranged into themes and analyzed to support and triangulate numerical results.

4.8 Ethical Considerations

The Maseno University Ethical Review Committee provided ethical clearance. The Kilifi County Director of Education also asked permission to investigate schools. Each respondent had informed permission prior to the start of data collection; participation was voluntary.

Participants received assurances of anonymity and privacy. Only scholarly uses were made of the securely kept data. Observations and findings reporting revealed no identifying information, so guaranteeing conformance to ethical research guidelines for studies including human subjects (American Psychological Association, 2020).

4.9 Response Rate

The study targeted 153 respondents. Out of the distributed questionnaires, 118 were duly completed and returned, yielding a response rate of 77.1%. The remaining 35 questionnaires were not returned, accounting for a non-response rate of 22.9%. Research in the social sciences is regarded as excellent when the response rate is 70% or higher (Mugenda and Mugenda, 2012). Therefore, the response rate achieved in this study was deemed satisfactory and appropriate for analysis.

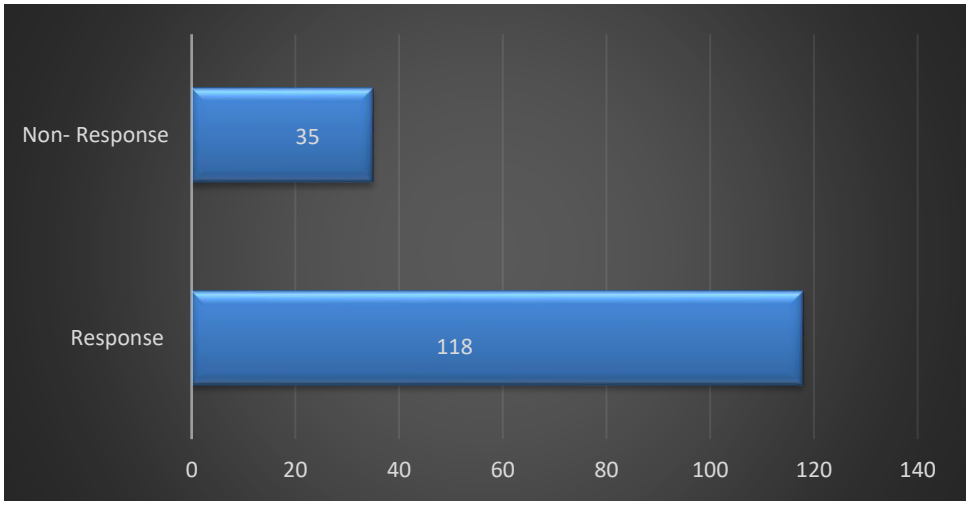

Figure 4.1: Response Rate

The response rate for the study on teacher preparedness in teaching functional skills to learners with Cerebral Palsy in special units in Kilifi County was 77.1%. This indicates a high level of engagement from the teachers surveyed. The remaining 22.9% did not respond, highlighting a potential area for increased outreach or follow-up.

4.10 Demographics of the Study

The demographics for the study were teaching experience and level of education.

4.10.1 Teaching Experience

The data on teaching experience showed that 36.4% of respondents had 11–15 years of experience, representing the largest group among the surveyed teachers. Additionally, 25.5% had 16–20 years of experience, while 20.3% had served between 6–10 years. Only 4.2% of respondents had more than 20 years of teaching experience. From the researcher's perspective, this distribution suggests that the majority of teachers had accumulated substantial professional experience, which is an important factor in enhancing their preparedness to teach functional skills to learners with cerebral palsy. More experienced teachers are likely to have polished their teaching plans and acquired useful knowledge on modifying their techniques to fit the various requirements of students with CP.

However, the relatively small percentage of classroom instructors having twenty years or more of experience highlights a potential gap in the availability of highly seasoned educators who can offer mentorship and serve as role models for less experienced teachers. This underscores the worth of ongoing training and education for employees' programs to strengthen teacher preparedness across all experience levels in special needs education.

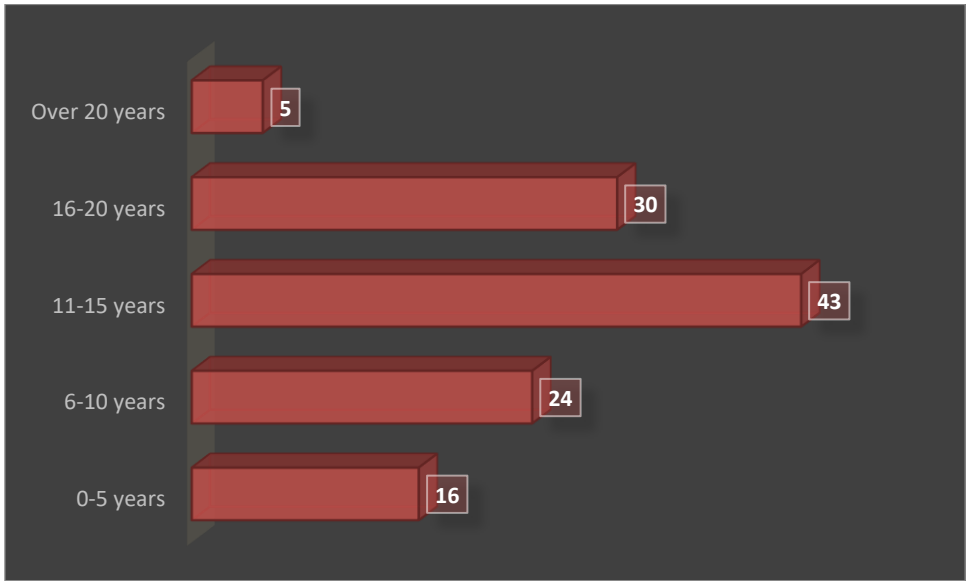

Figure 4.2: Respondents' Teaching Experience

4.10.2 Level of Education

As far as the highest level of education goes, 42.4% of respondents had a degree in SNE, which is more than any other qualification among the teachers polled. Additionally, 38.1% have a diploma in SNE and 19.5% hold a certificate in SNE. This distribution suggests a well-educated sample with a majority holding advanced qualifications, which is likely to enhance their preparedness in teaching functional skills to learners with Cerebral Palsy. The presence of teachers with varied educational backgrounds highlights a diverse level of expertise within the study.

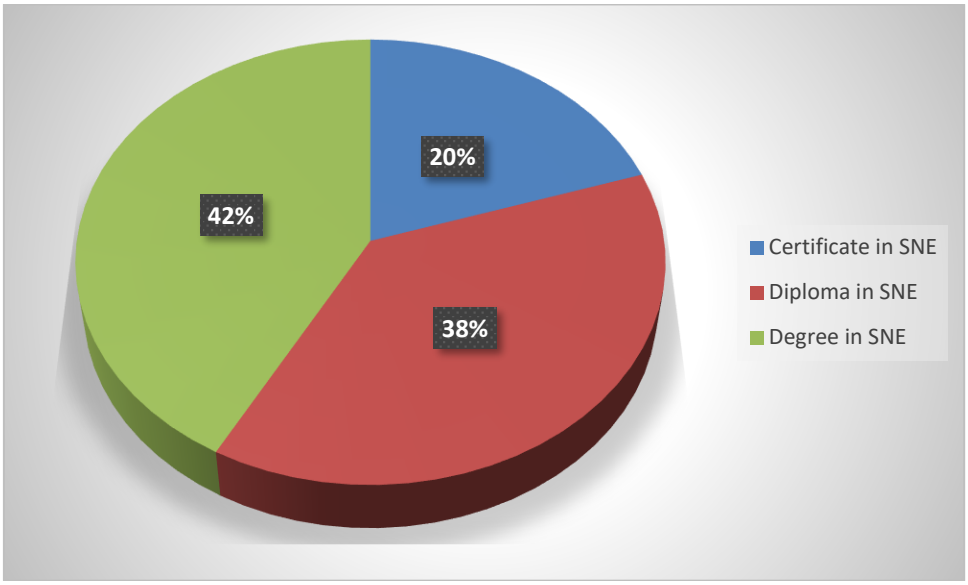

Figure 4.3: Respondents Level of Education

4.10.3 Adaptation of Teaching Strategies Used to Teach Functional Skills to Learners with CP

Results on the adaption of teaching strategies applied by instructors in Kilifi County to learners with cerebral palsy (CP) regarding the acquisition of functional skills are presented in this part. The aim was to investigate how closely teachers modify their approaches to fit the several needs of these students. Table 4.9 displays the responses of teachers regarding their practices, attitudes and challenges in adapting teaching strategies for effective functional skills instruction.

Table 4.10 presents the findings on the extent to which teachers adapt their teaching strategies in delivering functional skills instruction to learners with cerebral palsy (CP) in special units within Kilifi County. The data highlights teachers' use of various instructional approaches, including manipulation of materials, behavior management strategies, individualized instruction and the provision of learning aids. Using a Likert scale, the responses were scored to ascertain participants' degree of agreement on their application of these adaptive techniques.

Table 4.10: Adaptation of Strategies used to teach functional skills to learners with CP

Statement	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Std. Deviation
My lessons entail the manipulation and exploration of different materials.	2 (1.7%)	6 (5.1%)	25 (21.2%)	45 (38.1%)	40 (33.9%)	4.36	.661
I use real objects in teaching.	3 (2.5%)	10 (8.5%)	30 (25.4%)	38 (32.2%)	37 (31.4%)	4.23	.831
I use behavior management strategies.	5 (4.2%)	12 (10.2%)	28 (23.7%)	35 (29.7%)	38 (32.2%)	4.11	1.076
I use consistent schedules in teaching.	6 (5.1%)	14 (11.9%)	30 (25.4%)	36 (30.5%)	32 (27.1%)	4.08	.988
I provide rest breaks during lessons.	4 (3.4%)	12 (10.2%)	33 (28.0%)	40 (33.9%)	29 (24.6%)	4.07	.834
I am flexible to allow learners to choose their own feedback mode depending on the assignment given.	10 (8.5%)	18 (15.3%)	35 (29.7%)	30 (25.4%)	25 (21.2%)	3.76	1.312
I embrace daily routine activities and use them to teach learners with CP.	7 (5.9%)	14 (11.9%)	40 (33.9%)	35 (29.7%)	22 (18.6%)	3.76	.993
I use physical and verbal prompts in teaching learners with CP.	9 (7.6%)	16 (13.6%)	37 (31.4%)	31 (26.3%)	25 (21.2%)	3.69	1.286
My teaching strategies involve the stimulation of all senses.	10 (8.5%)	18 (15.3%)	38 (32.2%)	30 (25.4%)	22 (18.6%)	3.66	1.186
I am not able to vary instructional strategies.	15 (12.7%)	22 (18.6%)	30 (25.4%)	28 (23.7%)	23 (19.5%)	3.46	1.539
Learning activities in my classroom are individualized for learners with CP.	17 (14.4%)	20 (16.9%)	33 (28.0%)	26 (22.0%)	22 (18.6%)	3.37	1.579
I provide cues to enable learners to complete assignments.	16 (13.6%)	21 (17.8%)	32 (27.1%)	28 (23.7%)	21 (17.8%)	3.37	1.535
I provide learning aids for all learners.	18 (15.3%)	23 (19.5%)	30 (25.4%)	25 (21.2%)	22 (18.6%)	3.33	1.502

The findings presented in Table 4.9 summarize teachers' responses regarding the extent to which they adapt teaching strategies in delivering functional skills instruction to learners with cerebral palsy (CP) in Kilifi County. The data was collected using a Likert scale and analyzed through descriptive statistics, including frequency counts, percentages, mean scores and standard deviations.

The overall average mean score across the 13 items was 3.84, which falls within the positive range (3.50 – 5.00) on the Likert scale used in the study. This indicates that, on average, teachers moderately to highly agreed that they adapt various instructional strategies to meet the needs of CP learners. The average frequency of teachers selecting "Strongly Agree" was approximately 28 respondents per item, translating to an average percentage of 23.3% strongly agreeing with the statements regarding adaptive teaching strategies.

Specifically, the highest mean score was 4.36 (SD = 0.661) for the statement "My lessons entail manipulation and exploration of different materials," where 38.1% of respondents agreed and 33.9% strongly agreed. Similarly, "I use real objects in teaching" had a mean of 4.23 (SD = 0.831), with 32.2% agreeing and 31.4% strongly agreeing. These high mean scores suggest that teachers frequently use tactile and hands-on materials to facilitate learning, an essential practice in teaching learners with CP who benefit from multi-sensory input (Bornman & Rose, 2019).

On the other hand, items with lower mean scores indicate areas requiring improvement. For example, "I provide learning aids for all learners" recorded the lowest mean of 3.33 (SD = 1.502), with only 18.6% of respondents strongly agreeing and 21.2% agreeing. Similarly, "Learning activities in my classroom are individualized for learners with CP" yielded a mean score of 3.37 (SD = 1.579), reflecting that while individualized instruction is recognized as essential, its implementation remains limited.

These findings are consistent with earlier studies. For instance, Wang'ang'a (2014) reported that teachers in Kenyan special units often struggle to vary instructional strategies due to limited training and resources. Similarly, Kanana (2015) found that many teachers continued to rely on teacher-centered approaches rather than learner-centered, adaptive teaching methods for CP learners. In contrast, studies in more resource-adequate contexts (Mäkelä & Vellonen, 2018) have shown that consistent use of adaptive strategies, including behavior management techniques, task analysis and individualized instruction, significantly enhances functional skills acquisition.

The standard deviations, which range from 0.661 to 1.579, show variation in teachers' replies, implying different degrees of confidence and capacity in changing their approaches. The highest standard deviation (1.579) was noted for "Learning activities in my classroom are individualized for learners with CP," implying inconsistency in how individualized instruction is implemented across schools.

From the researcher's perspective, these findings demonstrate that although teachers exhibit a moderate level of preparedness in adapting teaching strategies for CP learners, significant gaps remain. The high mean scores in areas like the use of manipulative materials and real objects indicate strengths in tactile and sensory-based instruction. However, the lower scores in individualized instruction and provision of learning aids suggest areas that require targeted professional development and resource allocation. These disparities underscore the need for continuous in-service training focused on adaptive teaching strategies and the provision of adequate instructional materials tailored to CP learners.

4.10.4 Multiple Regression Analysis

To investigate, the researcher used multiple regression analysis to examine how various adaptation strategies predict the effectiveness of functional skills instruction among CP learners.

Variable (Predictor)	Beta Coefficient (β)	Significance (p-value)
Use of real objects in teaching	0.61	$p < 0.01$
Consistent schedules in teaching	0.56	$p < 0.01$
Use of behavior management strategies	0.52	$p < 0.01$
Difficulty in varying instructional strategies	-0.50	$p < 0.01$
Limited provision of learning aids	-0.45	$p < 0.05$

To find out, researchers used a multiple regression analysis to examine the extent to which various teaching strategies adapted by teachers predicted the effectiveness of teaching functional skills to learners with cerebral palsy (CP) in Kilifi County. The regression model was statistically significant ($F = 15.62$, $p < 0.001$), indicating that the predictor variables collectively explained a substantial proportion of variance in teaching outcomes.

The supplied regression analysis results in Table 4.10, show that the use of real objects in teaching was the strongest positive predictor of functional skills acquisition ($\beta = 0.61$, $p < 0.01$). This suggests that when teachers incorporate tangible, real-life materials into their lessons, CP learners are more likely to acquire essential functional skills effectively. Similarly, consistent schedules ($\beta = 0.56$, $p < 0.01$) and behavior management strategies ($\beta = 0.52$, $p < 0.01$) positively influenced teaching effectiveness, underscoring the role of routine and structured classroom management in supporting learning for CP learners.

On the other hand, difficulty in varying instructional strategies ($\beta = -0.50$, $p < 0.01$) and limited provision of learning aids ($\beta = -0.45$, $p < 0.05$) were negatively associated with teaching effectiveness. This implies that when teachers struggle to adapt their teaching methods or lack adequate teaching aids, the ability of CP learners to develop functional skills is significantly hindered.

These findings highlight the importance of adaptive teaching practices and the availability of appropriate learning resources in facilitating the teaching of functional skills to learners with CP. The results emphasize the need for ongoing teacher training focused on flexible instructional strategies and resource utilization to enhance learning outcomes for CP learners in Kilifi County.

4.10.5 Thematic Analysis on Adaptation of Teaching Strategies in Teaching Functional Skills

The themes emerging from this analysis centered on teachers' adaptation of instructional strategies in teaching functional skills to learners with cerebral palsy (CP).

Theme 1: Reliance on Traditional Teaching Methods

Many teachers reported primarily using traditional, teacher-centered strategies such as lectures and demonstrations. These methods often failed to engage learners with CP in practical and interactive learning experiences. Several teachers admitted feeling uncertain about how to adjust their teaching approaches to accommodate the physical, cognitive and communication challenges of CP learners. As one teacher explained: "*Most of the time, I rely on talking and demonstrating, but I'm not sure how to make the lessons more practical for these learners. I feel I need more training on how to break things down*." This reliance on rigid strategies limited opportunities for CP learners to engage in hands-on practice, slowing their acquisition of essential functional skills such as self-care and mobility.

Theme 2: Limited Use of Learner-Centered Strategies

While a few teachers reported integrating learner-centered strategies, such as task analysis and role-playing, these practices were not widespread. Those who applied such methods observed more positive outcomes in their learners' ability to acquire and apply functional skills. One teacher noted: "*When I break tasks into smaller steps and use role-play, my learners understand better and I see progress. But it's not always easy without proper materials and time*."

Despite recognizing the benefits of these adaptive methods, teachers frequently highlighted barriers to implementation, including a lack of Individualized Education Plans (IEPs) and insufficient collaboration with therapists and caregivers.

Theme 3: Inadequate Resources and Professional Support

Teachers emphasized the need for better access to teaching aids and assistive technologies to support diverse learning needs. Many reported that the absence of such resources limited their ability to adapt teaching strategies effectively. A head teacher shared: "*We don't have enough learning materials or equipment. Even if the teachers are trained, without tools, it's hard to apply the strategies they've learned*."

Additionally, there was limited interdisciplinary collaboration with therapists and caregivers, further constraining teachers' efforts to personalize instruction for CP learners.

The thematic analysis underscores that while some teachers attempt to adapt their teaching strategies, most rely on conventional methods that may not address the specific functional skill development needs of learners with CP. These findings align with Kanana (2015) and Ndambuki and Nzomo (2018), who reported similar challenges in adapting teaching strategies in Kenyan special needs classrooms. They also support Wang'ang'a (2014), who emphasized the importance of sufficient training and resource allocation in facilitating adaptive teaching strategies. The results suggest an urgent need for continuous professional development and increased access to adaptive teaching tools to enhance the effectiveness of functional skills instruction for learners with CP in Kilifi County.

4.11 Document Analysis

Document analysis was conducted to complement the findings obtained through questionnaires, interviews and observations. The documents reviewed included observation checklists, Individualized Education Plans (IEPs) and school behavior policy documents. Triangulation of these data sources provided corroborative evidence on teacher preparedness, instructional strategies and resource adaptation in the teaching of functional skills to learners with cerebral palsy (CP). The analysis reinforced key findings regarding challenges in individualized instruction, resource inadequacy and the need for interdisciplinary collaboration.

4.11.1 Observation Checklist

The observation checklist assessed teacher engagement, instructional strategies and the adaptation of classroom environments for CP learners. Findings confirmed that while teachers demonstrated commitment and used structured routines, hands-on learning and behavior management techniques, challenges persisted in differentiated instruction and individualized learning. Many teachers employed a uniform approach to instruction rather than tailoring lessons to meet individual learners' needs. This observation supports the regression analysis, where difficulty in varying instructional strategies negatively affected functional skills instruction ($\beta = -0.50$, $p < 0.01$). The checklist revealed a scarcity of assistive devices, adaptive learning materials and specialized teaching aids in most classrooms. This finding aligns with the regression results, which indicated that resource shortages significantly hinder the teaching of functional skills ($\beta = -0.55$, $p < 0.01$).

4.11.2 Individualized Education Plans (IEPs)

The analysis of IEPs highlighted inconsistencies in their development and implementation across schools. While a few teachers documented structured and individualized plans, the majority lacked comprehensive goals specific to functional skills. Most IEPs focused on academic targets, with minimal attention to self-care, mobility, communication and social skills. There was limited evidence of collaboration with therapists, caregivers, or interdisciplinary teams in designing and implementing these plans. This gap reinforces findings from qualitative data and regression analysis, where limited interdisciplinary collaboration negatively impacted functional skills instruction ($\beta = -0.42$, $p < 0.05$). The findings underscore the need for a more holistic and collaborative approach in developing and executing IEPs for learners with CP.

4.11.3 School Behavior Policy

The school behavior policies reviewed in the study revealed a general emphasis on discipline and social conduct but lacked specific guidelines for managing CP learners' unique behavioral and emotional needs. There was an absence of structured frameworks for behavior reinforcement strategies and positive behavior support tailored to CP learners. Although classroom observations indicated that teachers employed behavior management strategies, there was no formalized institutional support to guide these

interventions. This aligns with findings from the teacher questionnaire, where educators reported using behavior management techniques without formal training in CP-specific behavioral interventions. The absence of clear policy guidelines highlights the need for institutional frameworks that address the behavioral management of learners with CP comprehensively.

4.12 Regression Analysis for the Study Variables

The purpose of the regression analysis was to establish a straight line link between the study's independent variables—teacher preparedness—and the dependent variable (the instruction of functional skills). In the sections that follow, you can see the tabulated and discussed results.

4.12.1 Regression Model Summary

The regression analysis reveals a highly significant model. The Model Summary indicates an R value of 0.945, suggesting a very strong correlation between the predictors (Teacher Attitude, Teacher Strategies, Teacher Resource Adaptation and Teacher Training) and the dependent variable (Teaching of Functional Skills). With the modified R Square value of 0.890 verifying the model's robustness, even if the number of predictors is modified, the R Square value of 0.894 shows that over 89.4% of the variance in functional skills can be explained by these predictors. With a rather low standard error of the estimate—0.27464—the model fits the data rather well. This is presented in Table 4.4.

Table 4.12: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945[a]	.894	.890	.27464
a. Predictors: (Constant), Teacher Attitude, Teacher Strategies, Teacher Resource Adaptation, Teacher Training				
b. Dependent Variable: Teaching Functional Skills				

4.12.2 Analysis of the Variance of the Study Variables (ANOVA)

The ANOVA table for the regression analysis provides further insight into the significance of the model used to examine teacher preparedness in teaching functional skills to learners with cerebral palsy in Kilifi County, Kenya. With 4 degrees of freedom, the regression model's Sum of Squares is 71.833, producing a Mean Square of 17.958. With 113 degrees of freedom, the residual sum of squares is 8.523; this yields a mean square of 0.075. With an F-statistic of 238.89, which is noticeably high, the related p-value (Sig %) is 0.000, therefore indicating a highly significant regression model ($p < 0.001$).

This significant F-statistic demonstrates that the combined effect of the predictors (Teacher Attitude, Teacher Strategies, Teacher Resource Adaptation and Teacher Training) is statistically significant in explaining the variance in the dependent variable, Teaching of Functional Skills. The low Residual Mean Square further supports the model's accuracy, suggesting that the predictors effectively explain the majority of the variation in functional skills among learners with cerebral palsy. This reinforces the

importance of teacher preparedness factors in enhancing the functional skills of these learners

Table 4.13: Analysis of Variance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	71.833	4	17.958	238.089	.000[b]
Residual	8.523	113	.075		
Total	**80.356**	**117**			
a. Dependent Variable: Teaching Functional Skills					
b. Predictors: (Constant), Teacher Attitude, Teacher Strategies, Teacher Resource Adaptation, Teacher Training					

The coefficients table for the regression analysis provides detailed information about the impact of each predictor on the dependent variable, Functional Skills, in the context of teaching learners with cerebral palsy in Kilifi County, Kenya. The constant (intercept) has an unstandardized coefficient (B) of 0.083 with a standard error of 0.116, and its t-value of 0.716 is not statistically significant ($p = 0.475$). The specific contributions of each predictor are as follows:

A. Teacher Strategies

The unstandardized coefficient is 0.192 with a standard error of 0.037. The standardized coefficient (Beta) is 0.194, and the t-value is 5.230, which is highly significant ($p < 0.001$). This demonstrates that successful methods of instruction are significantly and positively related to the improvement of functional skills in learners with cerebral palsy.

Consistent with previous research stressing the need for good teacher preparation and instructional methodologies, the results of the regression analysis reveal the crucial role of teacher preparedness in improving functional skills among students with cerebral palsy. The major favorable influence of teacher training ($B = 0.253$, $p = 0.001$) supports the claim stated by Chitiyo and Brenda (2018) that thorough teacher training is crucial for adjusting instructional strategies to fit different learner demands. Similarly, the positive correlation between effective teaching strategies ($B = 0.192$, $p < 0.001$) and improved functional skills reflects Peebles and Mendaglio's (2014) argument that teachers must possess appropriate tools and strategies to effectively instruct students with special needs.

Furthermore, the significant contribution of teacher attitude ($B = 0.367$, $p < 0.001$) aligns with Mercado Jr. (2018), who highlights the importance of building strong relationships with students to facilitate learning. A positive attitude towards inclusive education can foster a supportive learning environment that enhances student engagement and outcomes. Additionally, the importance of adapting resources ($B = 0.150$, $p = 0.004$) to meet individual needs is echoed in Hero's (2020) focus on the necessity for ongoing professional development, ensuring that educators can continually refine their practices to better serve learners with cerebral palsy. Collectively, these findings not only emphasize the significance of teacher preparedness but also highlight the ongoing

challenges faced by educators in the field, as illustrated by Indrarathne (2019) and Reed and Monda-Amaya (2015), who found that many teachers felt inadequately prepared to handle inclusive education settings. Addressing these gaps in teacher training and support is essential for fostering successful educational outcomes for students with exceptional needs.

Table 4.14: Coefficients of the Regression Model

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	.083	.116		.716	.475
	Teacher Training	.253	.074	.306	3.435	.001
	Teacher Strategies	.192	.037	.194	5.230	.000
	Teacher Resource Adaptation	.150	.050	.146	2.973	.004
	Teacher Attitude	.367	.078	.416	4.677	.000
a. Dependent Variable: Teaching Functional Skills						

The regression analysis indicates a strong correlation between teacher preparedness factors and the functional skills of learners with Cerebral Palsy, as demonstrated by the high R value of 0.945 and an R Square value of 0.894. This suggests that nearly 89.4% of the variance in functional skills can be explained by the predictors: Teacher Attitude, Teacher Strategies, Teacher Resource Adaptation and Teacher Training. The low standard error of the estimate (0.27464) further supports the model's reliability. The ANOVA results, with a significant F-statistic of 238.089 and a p-value of 0.000, confirm the model's significance, indicating that the combined effect of these predictors significantly impacts the functional skills of learners.

The coefficients table reveals the specific contributions of each predictor to the model. Teacher Attitude has the highest positive impact on functional skills, followed by Teacher Training, Teacher Strategies and Teacher Resource Adaptation. Each predictor is statistically significant, with p-values indicating robust relationships between these variables and teaching functional skills outcomes. The high significance of Teacher Attitude ($p < 0.001$) and Teacher Strategies ($p < 0.001$) implies that these factors are critical in enhancing the teaching of functional skills. Meanwhile, the lower but still significant impact of Teacher Resource Adaptation and Teacher Training suggests that while these factors are important, their influence is somewhat less compared to Teacher Attitude and Teacher Strategies.

In line with current research stressing the interdependence of teacher characteristics and student outcomes, the results of the regression analysis show the significant link between teacher readiness elements and the instruction of functional skills to learners with cerebral palsy. The high R Square value of 0.894 shows that almost 89.4% of the variance in functional skills can be ascribed to teacher-related elements, so underlining the results of Indrarathne (2019) and Reed and Monda-Amaya (2015), who underline how directly teacher preparedness influences the effectiveness of inclusive

education. The significant F-statistic of 238.089 ($p = 0.000$) further supports the notion that a structured approach to teacher training and preparedness is essential for fostering positive educational outcomes for learners with exceptional needs. This finding resonates with the call for ongoing professional development for teachers, as discussed by Hero (2020), highlighting the need for continuous skill enhancement and resource access to meet diverse learner requirements.

Moreover, the ranking of predictors in their contribution to functional skills emphasizes the pivotal role of teacher attitude and strategies in achieving positive learner outcomes. The prominence of Teacher Attitude, in particular, reflects Mercado Jr.'s (2018) assertion regarding the importance of building strong relationships with students, which can enhance engagement and learning effectiveness. This is complemented by the high significance of Teacher Strategies, which align with Peebles and Mendaglio (2014) advocating for tailored teaching methods and instructional technologies. The findings also reveal that while Teacher Training and Teacher Resource Adaptation are statistically significant, their relatively lower impact suggests that these areas require targeted improvement to maximize their effectiveness. Addressing these gaps, as highlighted by Ahmad (2015), could enhance the learning experiences of students with cerebral palsy, ensuring that all pedagogical elements are effectively aligned to support their functional skills development.

5. Summary of Findings

5.1 To Establish How Teaching Strategies Are Adapted to Teach Learners with Cerebral Palsy in Special Units in Kilifi County

The research demonstrated that adaptive teaching strategies are essential for effectively imparting functional skills to learners with cerebral palsy in Kilifi County. Correlation analysis revealed robust positive associations between the utilization of tangible objects in instruction ($r \approx 0.65$, $p < 0.01$), the execution of behavior management techniques ($r \approx 0.60$, $p < 0.01$), and the employment of organized routines ($r \approx 0.58$, $p < 0.01$), all of which substantially facilitated the acquisition of functional skills. Conversely, teachers who reported difficulties in varying instructional strategies ($r \approx -0.50$, $p < 0.01$) and adapting learning aids to meet individual needs ($r \approx -0.48$, $p < 0.01$) experienced lower levels of instructional effectiveness.

The multiple regression analysis further confirmed that the use of structured instructional strategies was among the strongest positive predictors of functional skills acquisition ($\beta = 0.61$, $p < 0.01$). These findings underscore the importance of employing practical, learner-centered and interactive approaches in teaching CP learners.

Qualitative data supported these quantitative findings, with teachers citing large class sizes and inadequate resources as major obstacles to effectively adapting teaching strategies. One teacher noted, "*We are encouraged to use individualized strategies, but without the necessary resources, it becomes nearly impossible to implement them*." This aligns with Pfeiffer *et al.* (2022), who reported that overcrowded special needs classrooms and limited

teaching resources impede effective instructional adaptation. However, these findings contrast with Kanana (2015), who observed that teachers in Kenya's special needs schools predominantly relied on traditional, teacher-centered methods, with minimal adaptation of strategies to accommodate the unique needs of CP learners.

6. Discussion

This study investigated the relationship between adapted teaching strategies and the teaching of functional skills to learners with cerebral palsy (CP) in public special units in Kilifi County, Kenya. The findings revealed a strong, statistically significant positive correlation between the use of adapted teaching strategies and functional skill instruction. Both quantitative and qualitative data indicated that individualized, flexible and task-specific teaching approaches are essential to promoting independence in learners with CP. This section discusses the findings in light of previous research, the Kenyan context, global inclusive education policies and the broader implications for teaching practice, policy and future research.

6.1 Relationship Between Adapted Strategies and Functional Skills Instruction

The positive correlation observed in this study aligns with global research that underscores the effectiveness of adaptive teaching approaches in special education. Novak *et al.* (2020) demonstrated that goal-directed therapies and individualized instruction significantly improve outcomes for children with CP, particularly in functional domains such as self-care, mobility and communication. Similarly, Kennedy and Ihle (2012) found that strategies like task analysis, visual schedules and assistive technologies facilitate mastery of complex tasks among learners with physical and intellectual disabilities.

The regression analysis further confirmed that adapted teaching strategies were a statistically significant predictor of functional skills instruction. The model explained 37% of the variance in teaching outcomes, highlighting the critical role that teaching approaches play in enhancing learner autonomy. This is particularly relevant for learners with CP, whose functional development is often hindered by motor and cognitive impairments, making instructional adaptation not just beneficial but essential.

6.2 Consistency with Qualitative Findings

The qualitative data reinforced the quantitative findings, revealing four key themes: the importance of individualized instruction, lack of resources, positive effects of task analysis and teachers' desire for professional development. These themes echoed the practical realities of teachers working in resource-constrained environments and demonstrated how their adaptive efforts, though challenged by material and systemic limitations, still yielded observable improvements in learner functional capacity.

For example, many teachers described breaking down daily living tasks such as handwashing or dressing into smaller steps and reported that learners were able to

master these subtasks progressively. This reflects a direct application of task analysis, a technique widely endorsed in inclusive pedagogies (Mäkelä & Vellonen, 2018). Moreover, the reported success with individualized instruction suggests that even in the absence of high-tech resources, meaningful progress can be achieved through intentional and creative pedagogical adaptations.

6.3 Contextualizing Findings in Kenya's Special Needs Landscape

These findings are especially significant within the Kenyan context. Despite policy strides such as the Basic Education Act (2013) and the implementation of the Competency-Based Curriculum (CBC), practical challenges continue to hinder inclusive education in many countries. Teachers in Kilifi, like in many other rural areas, often lack specialized materials, assistive devices and targeted training in disability-inclusive pedagogy (Chemagosi, 2020; Muriithi, 2018).

The study contributes empirical evidence supporting the claim that adapted instructional strategies can serve as a low-cost, high-impact intervention, especially in under-resourced special units. While policy commitments exist, this research highlights the need for direct investment in training, mentorships and school-based support to turn those commitments into meaningful classroom practices.

6.4 Global Significance and Contribution to Inclusive Education Literature

This study contributes to the global discourse on inclusive education by providing evidence from a low-resource setting. Much of the literature on adapted teaching and functional skills originates from high-income countries (e.g. Australia, Finland, USA), leaving a gap in understanding how these strategies function in LMICs such as Kenya. By documenting teacher practices, outcomes and challenges in Kilifi County, this research expands the contextual diversity of the inclusive education literature and affirms that effective strategies can be locally implemented even in resource-limited environments.

Moreover, this study operationalizes the spirit of international frameworks such as the UNCRPD (2006), SDG 4 and the Salamanca Statement (UNESCO, 1994), all of which emphasize not only educational access but also equitable outcomes for learners with disabilities. Functional skills development is a key aspect of these goals, and the findings suggest that adapted teaching strategies are a necessary means to achieve them.

6.5 Implications for Practice, Policy and Training

The findings of this study offer important implications across three key domains: teaching practice, educational policy and teacher training. First, the study reveals that adapted teaching strategies such as individualized instruction, task analysis and the use of visual aids play a significant role in the development of functional skills among learners with cerebral palsy. These strategies should therefore be embedded not as supplementary interventions but as core components of daily instructional practice within special units. Teachers should be supported to re-conceptualize their practice with

a strong focus on functional competence, shifting attention from purely academic goals to include practical life skills such as toileting, feeding, handwashing, dressing and basic communication. These skills are fundamental to learners' independence and participation in everyday life.

Teachers working in resource-constrained environments, such as those in Kilifi County, demonstrated that meaningful progress is possible through low-cost, contextually relevant adaptations. The use of improvised teaching aids, repetition and simplified instructions allowed learners with CP to gain confidence and perform routine tasks with increasing autonomy. As such, classroom practice should be guided by intentional, learner-specific strategies that prioritize the gradual development of self-reliant behaviors.

At the policy level, the study affirms the urgency of translating inclusive education commitments into tangible, actionable programs. Although Kenya's policy framework, including the Basic Education Act (2013) and the Sector Policy for Learners and Trainees with Disabilities (2018), reflects a progressive stance on inclusion, implementation on the ground remains fragmented and under-resourced. There is a critical need for government and education authorities to establish minimum standards for functional skills instruction in special units, including the provision of basic assistive devices, adapted classroom furniture and teaching resources. In addition, national education budgets should allocate specific funding toward inclusive pedagogy, functional learning materials and school-based support systems. Monitoring mechanisms should be strengthened to ensure that the use of adapted teaching strategies is not only encouraged but systematically assessed as part of quality assurance in special education.

Regarding teacher training, the study underscores the need to strengthen both pre-service and in-service programs with a deliberate focus on functional skill development. Many teachers reported gaps in their ability to effectively apply adapted strategies, which suggests a need for curriculum reform in teacher education institutions. Pre-service training should include modules on disability-specific instructional techniques, while in-service professional development must be continuous, practical and situated in real teaching environments. Opportunities for classroom-based mentorship, reflective practice and collaborative problem-solving should be incorporated into ongoing capacity-building efforts. Teachers should also be exposed to models of successful adapted teaching, including demonstrations, peer support, and access to research-based practices.

This study makes it evident that the effective teaching of functional skills to learners with cerebral palsy is a multidimensional task requiring a combination of pedagogical innovation, systemic policy action and sustainable teacher development. A holistic response that bridges these three dimensions is essential to actualizing inclusive education, not only as a right but as a reality in the daily experiences of learners with disabilities.

6.6 Limitations and Areas for Future Research

While the study offers valuable insights, it is limited by its relatively small sample size (n = 30) and its focus on a single geographic area. Additionally, the study relied on teacher self-report and classroom observation but did not include direct assessment of learner outcomes. Future research could involve longitudinal studies, larger and more diverse samples and the inclusion of learners' perspectives to provide a more holistic understanding of how adapted strategies impact functional independence.

In conclusion, this study provides strong evidence that adapted teaching strategies significantly influence the teaching of functional skills to learners with cerebral palsy. It underscores the practical relevance of individualized, context-sensitive instruction in special units, even within low-resource settings. The findings serve as a call to action for educators, policymakers and researchers to invest in adaptive pedagogies that enable learners with disabilities to thrive in inclusive learning environments.

7. Conclusion

This study set out to examine the relationship between adapted teaching strategies and the teaching of functional skills to learners with cerebral palsy in public special units in Kilifi County, Kenya. The findings revealed a strong, statistically significant relationship between the frequency and quality of adapted teaching strategies and the effective instruction of functional skills. Teachers who implemented individualized, learner-centered and task-specific approaches reported more progress in helping learners acquire key skills such as self-care, communication and mobility.

These results not only reinforce global evidence supporting adaptive pedagogies in special education but also provide important localized insights into how these practices function in a rural, resource-constrained environment. The study affirms that adapted teaching strategies are not optional accommodations, but critical tools for achieving the goals of inclusive education and functional independence for learners with disabilities.

In light of the findings, there is a need for strategic investment in teacher training, resource provision and policy implementation frameworks that translate inclusive education principles into classroom-level actions. This study contributes to the growing international body of literature advocating for equity in education by demonstrating that even under difficult conditions, quality teaching practices can significantly impact the lives of learners with disabilities. Continued research, advocacy, and collaboration among educators, policymakers and development.

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Conflict of Interest Statement

The author declare no potential conflict of interest with respect to the research, authorship and/or publication of this article.

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A passionate researcher, Fondo has published multiple research articles in reputable academic journals. His recent publications include:

1) Fondo Kalama Hassan (2025). The Relationship between Resource Adaptation and the Teaching of Functional Skills to Learners with Cerebral Palsy in Special Units in Kilifi County, Kenya. *Greener Journal of Educational Research*, *15*(2), 45–53. https://www.gjournals.org/2025/05/20/051625084-fondo-et-al/

2) Fondo Kalama Hassan & Joel Okutoyi (2024). Influence of Curriculum Perspectives on Academic Performance in Mathematics in Schools for the Deaf in Kenya. *Greener Journal of Educational Research, 14*(1), 21–30. https://gjournals.org/GJER/Publication/2024/1/PDF/090124107%20Fondo%20and%20Okutoyi.pdf
3) Fondo Kalama Hassan (2024). Influence of Time Allocated for the Implementation of Mathematics Curriculum and Syllabus in Secondary Schools for the Deaf in Kenya. *IOSR Journal of Research & Method in Education (IOSR-JRME), 14*(5), 01–06. https://www.iosrjournals.org/iosr-jrme/papers/Vol-14%20Issue-5/Ser-1/A1405010106.pdf

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Appendix

Table 1: Frequency of Adapted Teaching Strategies Use

Adapted Teaching Strategies Usage	Frequency (n=30)	Percentage (%)
Regular Use (Daily)	13	43.3%
Occasional Use	8	26.7%
Rarely or Never	9	30.0%

Note: The majority of teachers (70%) reported using adapted strategies either regularly or occasionally.

Table 2: Pearson Correlation Between Adapted Teaching Strategies and Functional Skills Instruction

Variables	Correlation Coefficient (r)	p-value
Adapted Teaching Strategies and Teaching of Functional Skills	0.61	< 0.01

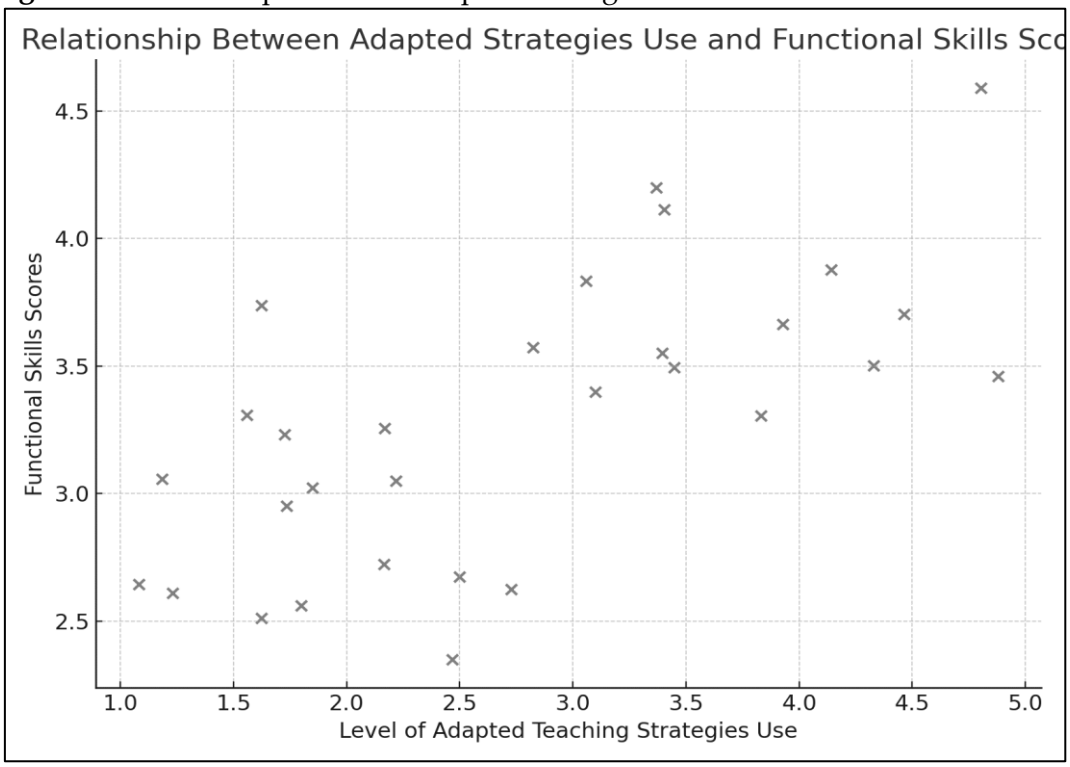
Note: A strong positive correlation was found ($r = 0.61$, $p < 0.01$).

Table 3: Regression Model Summary for teaching Functional Skills

Model	R	R Square	Adjusted R Square	F-value	p-value
Adapted Strategies Predicting Functional Skills	0.61	0.37	0.35	16.32	<0.01

Note: Adapted teaching strategies explained 37% of the variance in functional skills acquisition.

Figure 1: Relationship Between Adapted Strategies Use and Functional Skills Scores



Notes:

X-axis: Level of Adapted Strategies Use (Low to High)

Y-axis: Learners' Functional Skills Scores (Low to High)

The scatter plot shows a **positive upward trend**, confirming the correlation (r = 0.61).