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Assessing the Availability and Impact of Physical Support in Implementing Inclusive Creative Arts Education in Offinso Municipality

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Abstract

The study examined the availability and influence of physical support systems—comprising assistive devices, teaching and learning materials, and disability-friendly infrastructure on the implementation of inclusive Creative Arts education in basic schools within the Offinso Municipality. Employing a convergent parallel mixed-methods design, the study combined quantitative data collected through a structured 5-point Likert scale questionnaire administered to 226 Creative Arts teachers, with qualitative insights obtained from interviews and focus group discussions with students. A combination of census and disproportionate stratified sampling techniques was used to select participants. Findings revealed that physical support plays a critical role in enabling inclusive participation in Creative Arts education; however, the current state of physical resources in schools remains inadequate and inconsistent. Many schools lack the necessary tools and infrastructure to accommodate learners with disabilities effectively. The study concluded that improved availability and accessibility of physical support enhances participation and reduces exclusion and dropout rates among children with disabilities. It is therefore recommended that schools be adequately resourced with basic teaching materials and specialized assistive devices to support both teachers and learners in delivering inclusive Creative Arts instruction.

Keywords

Physical Support, Inclusive Education, Creative Arts, Assistive Devices, Disability-Friendly Infrastructure

1. Introduction

Despite significant efforts by international bodies, national governments, and ed-

ucational institutions to promote inclusive education, learners with special educational needs (SEN) continue to face systemic neglect, exclusion, and marginalization in many parts of the world, particularly in sub-Saharan Africa (UNESCO, 2023; WHO, 2022; Singal & Sabates, 2021). These challenges persist largely due to the lack of essential infrastructure, instructional resources, and trained personnel necessary for the successful integration of diverse learners into mainstream educational systems (Opoku, Badu, & Mprah, 2021; Kiuppis, 2019).

In Ghana, inclusive education has been strongly emphasized in recent educational reforms, particularly through frameworks such as the National Teachers' Standards (NTS) and the National Teacher Education Curriculum Framework (NTECF). These policies advocate for the use of differentiated teaching strategies and inclusive learning materials to meet the diverse needs of learners in multilingual, mixed-ability, and multi-age classrooms (Ministry of Education [MoE], 2017; National Teaching Council [NTC], 2019). The overarching aim is to promote equitable access, participation, and learning outcomes for all students, regardless of their physical, sensory, cognitive, or emotional conditions (Ametepee & Anastasiou, 2020).

Drawing on Gardner's Theory of Multiple Intelligences, the provision of varied and inclusive learning materials allows learners to demonstrate their strengths through diverse, cooperative, and individualized approaches (Gardner, 2011; Nketsia, 2020). Additionally, Vygotsky's Sociocultural Theory continues to provide a compelling framework for understanding the role of social interaction, cultural tools, and scaffolding in facilitating learning, especially for learners with disabilities. Recent studies (Pugach et al., 2019; Florian & Black-Hawkins, 2019) have affirmed that the learning environment and mediating tools—such as assistive technology and modified instructional materials—are essential in helping learners move from dependence to independence within their Zone of Proximal Development.

Equally relevant is the Social Model of Disability, which reframes disability as a consequence of environmental and systemic barriers rather than individual impairments (Shakespeare, 2017; de Beco, 2018). In this model, the exclusion of learners in Creative Arts classrooms arises not from their limitations but from inaccessible infrastructure, a lack of inclusive materials, and insufficient teacher preparation. As noted by Graham and Spandagou (2020), true inclusion requires redesigning environments to accommodate learner diversity, not simply integrating students into existing structures.

Despite progress in inclusive education policy, Creative Arts education in inclusive settings continues to suffer from under-resourcing, limited teacher capacity, and a lack of curriculum adaptation. These shortcomings often undermine the full implementation of inclusive education (Opoku et al., 2021; Ametepee & Anastasiou, 2020). The gap between policy and practice is particularly evident in subject areas like Creative Arts, where hands-on, resource-dependent instruction requires accessible tools and environments.

Although there is considerable literature on inclusive practices in core subjects, relatively few studies have investigated the availability and effective use of physical resources in Creative Arts classrooms. This study, therefore, seeks to examine the extent to which disability-friendly materials and infrastructure are available, accessible, and effectively utilized in the delivery of inclusive Creative Arts education in basic schools in Ghana.

Research Objectives

1) To assess the availability and adequacy of physical support resources—including assistive devices, teaching materials, and infrastructure—for implementing inclusive Creative Arts education in basic schools within Offinso Municipality.

2) To examine how physical support systems influence the participation, engagement, and learning outcomes of learners with disabilities in Creative Arts classes.

3) To explore students' perspectives on the accessibility and inclusiveness of physical environments and resources used in Creative Arts education.

4) To identify the major challenges schools face in providing and utilizing physical support systems for inclusive Creative Arts instruction.

Research Questions

1) What types of physical support resources are available in basic schools, and to what extent are they adequate for inclusive Creative Arts education?

2) In what ways do physical support systems affect the participation and learning experiences of learners with disabilities in Creative Arts lessons?

3) How do students perceive the accessibility and inclusiveness of the physical environment and resources in their Creative Arts classrooms?

4) What challenges hinder the effective provision and utilization of physical support resources for inclusive Creative Arts education in basic schools?

2. Review of Related Literature

2.1. Concept of Inclusive Education in Ghana

Globally, the concept of inclusive education has received a major boost from local and international organizations and institutions. There has been a paradigm shift concerning all-inclusive education; however, several challenges militate against the implementation process. School administrators and teachers, who are at the forefront of implementation, are bedeviled by infrastructural and logistical challenges (Cambridge-Johnson, Hunter-Johnson, & Newton, 2014). Inclusive education creates opportunities for all learners to be integrated into regular classrooms, be taught by generalist teachers, and interact with other learners without disabilities. Due to this, efforts must be made to remove all barriers to inclusive education to open access for all children, regardless of their disabilities (Dev & Kumar, 2015).

The call for inclusive education gained momentum after the World Conference on Inclusive Education held in Salamanca, Spain, in 1994, the Dakar Framework for Action in Senegal in 2000, and the Education for All campaign led by UNESCO

in 2015. Since then, curriculum planners all over the world have paid rapt attention to inclusive education at all levels of education. Most educational policies today have components that ensure full access and participation of all learners with diverse needs in regular school activities (Opoku, Agbenyegah, Mprah, McKenzie & Badu, 2017).

In the Ghanaian context, the operational definition of inclusive education is important in providing an understanding of how the programme has been implemented. However, in many ways, inclusive education—regarding its scope and policy—has been shrouded in controversy due to the way it has been conceptualized, which adversely affects how inclusion ought to be implemented (Ainscow, Booth, & Dyson, 2006; Kauffman, 1999). One belief is that inclusive education should focus on the integration of children with varying degrees of disabilities to be accommodated in the regular classroom (Opoku et al., 2017). Inclusion Ghana is a member of Inclusion International, a network organization founded in 2009 to reduce stigmatization and increase opportunities for the inclusion of all persons with intellectual disabilities (Botts & Owusu, 2013). The mission of Inclusion Ghana is to eliminate all forms of stigmatization that often deprive young people from different cultural and social backgrounds of being fully integrated into society. They seek to provide equal opportunities through the inclusion of all persons with intellectual disabilities.

2.2. Physical Resources

The success of inclusive education depends on several resources (Opoku, Agbenyegah, Mprah, McKenzie & Badu, 2017). These resources include physical infrastructure, in-service training, access to facilities, and supportive government policies. Such provisions contribute to the effective implementation of an inclusive Creative Arts curriculum. Physical infrastructure, in particular, plays a key role in accessibility (Eunice, Nyangia, & Orodho, 2015). Public school buildings should facilitate the free mobility of learners with disabilities. Inclusive education has been hindered by the scarcity of learning resources. The unavailability of teaching and learning materials for teachers and students with disabilities has been cited by several authors (Nantwi et al., 2019) as one of the main challenges confronting the successful implementation of an inclusive curriculum. These authors argue that the absence of essential teaching and learning materials such as braille, hearing devices, speech software, wheelchairs (mobility aids), and screen readers makes it difficult for learners with disabilities to access and participate fully in classroom activities.

Teachers also face numerous challenges in the implementation of inclusive education. These challenges cannot be resolved in a single day; rather, it will take years of sustained effort to achieve successful inclusive education in which all children are integrated into mainstream schools. For most developing countries, inclusive education remains a significant issue discussed by education stakeholders at both national and international levels (Wikan, 2008; Ekandjo, 2018). Botts and

Owusu (2013) posited that a lack of educational resources and parents' inability to acquire learning materials are critical barriers to inclusive education. Although governments around the world are being encouraged to provide free education for all children, particularly in high-poverty areas, parents are still required to pay for uniforms, academic materials, and, in some cases, feeding programs (commonly referred to as canteen fees in Ghana). Barriers to school attendance for students with special needs include public prejudice, architectural obstacles, inadequate assessment facilities, inaccessible curricula, rigid curriculum structures, and ineffective or absent pre- and post-planning for regular teachers handling special education needs (Agbenyega, 2007).

A study conducted by Ajodhia-Andrews and Frankel (2010), as cited by Cambridge-Johnson, Hunter-Johnson, and Newton (2014), revealed major concerns regarding the implementation of inclusive education, including inadequate teacher training, lack of skills to teach students with special needs, insufficient infrastructure, and the absence of flexible curricula. Each of these factors influences teachers' experiences in inclusive classrooms and shapes their attitudes toward inclusive education.

Another study by Lamont, Hargreaves, Marshall, and Tarrant (2003) revealed that primary school teachers often lack confidence in teaching Creative Arts (visual arts, drama, music, and dance), with some finding the subject stressful. Other studies have indicated that teachers' perceptions of their own artistic abilities directly affect their effectiveness as arts educators (Alter, Hays & O'Hara, 2009). Opoku, Agbenyegah, Mprah, McKenzie, and Badu (2017) also found that inadequate teacher training is a central barrier to teaching students with disabilities. This underscores the need to investigate the severity of this issue in Ghana. The 21st-century demand-driven education system and the evolving needs of Ghana require well-prepared and qualified teachers to function effectively in inclusive classrooms (Ekandjo, 2018). A major challenge to inclusive education in Ghana and many Sub-Saharan African countries is the lack of funding. UNESCO (2020) identified funding as a critical constraint to inclusive practices. Educating children with disabilities in mainstream classrooms requires specialized expertise and instructional resources to support individual learning needs. Providing effective, individualized support to children with special needs necessitates additional funding—resources that are often lacking in schools across the sub-region, particularly in developing countries (Eunice, Nyangia, & Orodho, 2015).

There has been a notable shortage of resources such as classrooms, desks, textbooks, talking books for the visually impaired, braille machines, and accessible classrooms with ramps for physically disabled students. Most schools in Ghana lack modern technological tools referred to as assistive technologies—and often rely on outdated equipment even for basic administrative tasks. To achieve effective inclusive education, Eunice, Nyangia, and Orodho (2015) emphasize that computer-based assistive technologies are crucial for supporting learners with special educational needs. Tools such as large print materials, on-screen reading

software, CDs, and talking calculators can significantly enhance inclusive teaching and learning in mainstream classrooms. Moreover, teachers' understanding of inclusive pedagogy must be continually refreshed through in-service training, workshops, and research. They must also be equipped with sign language skills to support hearing-impaired students. Schools should be adequately resourced with appropriate infrastructure, which remains a major barrier to full inclusivity.

3. Methodology

This study adopted a convergent parallel mixed-methods design to investigate the availability and influence of physical support systems, specifically assistive devices, teaching materials, and infrastructure on the implementation of inclusive Creative Arts education in basic schools within the Offinso Municipality of Ghana. The design enabled the collection and integration of both quantitative and qualitative data, facilitating a more comprehensive and nuanced understanding of the challenges and experiences associated with inclusive education practices.

The quantitative aspect employed a descriptive survey design, targeting all Creative Arts teachers in the basic schools of Offinso Municipality. The population included teachers working in both inclusive and mainstream settings. A sample of 226 teachers was selected using a combination of disproportionate stratified sampling, purposive sampling, and census approaches to ensure representation across school types and disability inclusion levels. The sample size was determined based on Krejcie and Morgan's (1970) sampling table.

A structured 5-point Likert scale questionnaire was used as the primary instrument for data collection. The questionnaire consisted of two sections: the first gathered demographic and professional data from respondents, while the second focused on the availability, accessibility, and functional adequacy of physical support resources used in Creative Arts instruction. To increase accessibility and response rates, the questionnaire was digitized and shared via online platforms such as WhatsApp and Gmail. Collected data were analyzed using descriptive statistics and binary logistic regression through SPSS, allowing the study to identify patterns and significant predictors of physical support utilization in inclusive classrooms.

The qualitative component of the study involved semi-structured interviews and focus group discussions with a purposive sample of 20 students (10 with disabilities and 10 without) from schools practicing inclusive education. The qualitative data aimed to capture student perspectives on their day-to-day experiences in Creative Arts classes, particularly with regard to access to materials, infrastructural challenges, peer interactions, and emotional engagement. Interviews were guided by open-ended questions aligned with the study's objectives and were conducted in settings that supported comfort and openness. Where necessary, appropriate accommodations such as sign language interpreters were provided.

Audio recordings of the interviews were transcribed verbatim and analyzed thematically. Themes were derived inductively, focusing on resource availability, ac-

cessibility, participation, and emotional inclusion. The qualitative findings were later compared with quantitative results to triangulate and enrich the interpretation of the data.

Ethical clearance for the study was granted by the Ghana Education Service (GES) in Offinso Municipality. Written informed consent was obtained from all teacher respondents, while assent and parental consent were secured for student participants. Confidentiality and anonymity were upheld throughout the research process, with additional safeguards in place to protect the rights of students with disabilities.

In summary, the mixed-methods design of this study allowed for the integration of measurable trends and authentic student experiences, offering a fuller picture of the state of physical support systems in inclusive Creative Arts education in Offinso Municipality.

4. Presentation of Results

4.1. Socio-Demographic Characteristics of Respondents

This section presents data on the socio-demographic characteristics of selected Class teachers in selected schools in Offinso Township. The socio-demographic characteristics included in the study comprise age, sex, highest educational level, religion, and respondents' years of work, rank of respondents, marital status, and whether or not the respondents have children. A summary of the results is displayed in Table 1.

Table 1. Socio-demographic characteristics of respondents.

VARIABLE	CATEGORY	FREQUENCY	PERCENTAGE (%)
Age	21 - 30	100	44.2
	31 - 40	99	43.8
	41 - 50	23	10.2
	Above 50 years	4	1.8
Sex	Male	113	50.0
	Female	113	50.0
Highest Educational Level	Diploma	107	47.3
	Degree	108	47.8
	Masters	11	4.9
Religion	Christianity	204	90.3
	Islamic	19	8.4
	Traditional1	3	1.3
Number of Years Worked	Less than 5 Years	85	37.6
	5 - 10 Years	97	42.9
	Above 10 Years	44	19.5

Continued

Respondents Rank	Superintendent I	79	35.0
	Superintendent II	19	8.4
	Senior Superintendent I	11	4.9
	Senior Superintendent II	32	14.2
	Principal Superintendent	50	22.1
	Assistant Director I	2	0.9
	Assistant Director II	33	14.6
Marital status	Single	124	54.9
	Married	102	45.1
Children	Yes	126	55.8
	No	100	44.2

Source: Field Data, 2024.

The results from Table 1 show that the majority of respondents were aged between 21 and 30 years, representing 100 (44.2%). This was closely followed by those aged between 31 and 40 years, accounting for 99 (43.8%). Additionally, 23 respondents (10.2%) were aged between 41 and 50 years, while 4 respondents (1.8%) were above 50 years.

It can also be observed from Table 1 that the distribution of respondents by sex was evenly split. Specifically, 113 (50.0%) of the respondents were female, while the other 113 (50.0%) were male. Regarding educational qualifications, 108 respondents (47.8%) had attained a bachelor's degree in education. Furthermore, 107 respondents (47.3%) held a diploma, while 11 (4.9%) possessed a master's degree.

With reference to parental status, a majority of the respondents, representing 126 (55.8%), indicated that they had children, whereas 100 (44.2%) reported that they did not. Regarding years of work experience, most of the respondents—97 (42.9%)—had worked for 5 to 10 years. Additionally, 85 respondents (37.6%) had less than 5 years of experience, while 44 (19.5%) had worked for over 10 years.

Concerning marital status, the results show that 124 respondents (54.9%) were single, while 102 (45.1%) were married. Lastly, in terms of rank, the majority of respondents (79), representing 35.0%, held the rank of Senior Superintendent I. Moreover, 50 respondents (22.1%) were Principal Superintendents, 33 (14.6%) were Assistant Directors II, and 32 (14.4%) were Senior Superintendents II. Additionally, 11 respondents (4.9%) were Senior Superintendents I, 19 (8.5%) were Senior Superintendents II, and 2 respondents (0.9%) had attained the rank of Assistant Director I.

4.2. Descriptive Analysis

Respondents were asked to indicate the extent of their agreement or disagreement

with statements measuring the physical supports available for implementing the Inclusive Creative Arts curriculum. The researcher computed mean scores and standard deviations for each statement. The mean score ranges were interpreted as follows: 1.00 - 1.49 (strongly disagree), 1.50 - 2.49 (disagree), 2.50 - 3.49 (neutral), 3.50 - 4.49 (agree), and 4.50 - 5.00 (strongly agree). The results are presented in Table 2 below.

Table 2. Availability of physical supports for implementation of inclusive creative arts curriculum.

Statement	SD	D	N	A	SA	MEAN	STD	RANK
There are appropriate assistive devices (technology) for Creative arts teachers and students e.g. touch screens, white cane, adjustable seats, reading aids, brail, hearing aid, wheelchair etc.	99 (43.8%)	58 (25.7%)	48 (21.2%)	16 (7.1%)	5 (2.2%)	1.98	1.06	3rd
There are teaching and learning materials for creative arts e.g syllabus, textbooks, sketch pads, paints, pencils, crayons, brushes etc.	84 (37.2%)	77 (34.1%)	44 (19.5%)	15 (6.6%)	6 (2.7%)	2.03	1.04	2nd
The physical infrastructures in the school are disability friendly	52 (23.0%)	93 (41.2%)	51 (22.6%)	25 (11.1%)	5 (2.2%)	2.28	1.01	1st

Source: Field Data (2024); SD = strongly disagree; D = disagree; N = neutral; A = agree; SA = strongly agree; STD = standard deviation.

The results in Table 2 indicate that 99 respondents (43.8%) and 58 respondents (25.7%) strongly disagreed and disagreed, respectively, with the assertion that there are appropriate assistive devices (technologies) such as braille, hearing aids, wheelchairs, etc., available for Creative Arts teachers and students with visual, hearing, or orthopedic impairments. On the other hand, 48 respondents (21.2%) were neutral, 16 (7.1%) agreed, and 5 (2.2%) strongly agreed with the assertion. The item recorded a mean score of 1.98 (standard deviation = 1.06), which falls within the "Disagree" category and was ranked fourth among the statements measuring physical support for Creative Arts teachers in implementing the Inclusive Creative Arts curriculum. This result suggests that appropriate assistive devices are generally unavailable in schools to support both teachers and students in delivering and accessing inclusive Creative Arts education.

Special Educational Needs technologies—such as large print materials, on-screen reading tools, compact discs, and talking calculators—are known to enhance inclusive practices in mainstream classrooms. This finding is consistent with that of Mwangi & Orodho (2004), who reported a lack of essential assistive devices including braille, hearing devices, speech software, wheelchairs (mobility aids), and screen readers. These inadequacies hinder learners with disabilities from fully accessing and participating in classroom activities. Mwangi & Orodho (2004), further emphasized that instructional materials play a critical role in enabling student participation, and their absence constitutes a major barrier to inclusive education.

Furthermore, the results in Table 2 reveal that 52 respondents (23.0%) and 93

respondents (41.2%) strongly disagreed and disagreed, respectively, with the assertion that the physical infrastructure in schools is disability-friendly. Meanwhile, 51 respondents (22.6%) were neutral, 25 (11.1%) agreed, and 5 (2.2%) strongly agreed. The mean score for this item was 2.28 (standard deviation = 1.01), indicating a general disagreement and suggesting that most school infrastructures are not disability-friendly. This finding supports the conclusion by Eunice, Nyangia, and Orodho (2015), who argued that physical infrastructure plays a vital role in accessibility. The authors further noted that inaccessible school buildings create significant barriers for children with disabilities, and recommended the construction of disability-friendly public school facilities to ensure free mobility for all learners.

Lastly, Table 2 shows that 84 teachers (37.2%) and 77 teachers (34.1%) strongly disagreed and disagreed, respectively, with the statement that there are adequate teaching and learning materials available for Creative Arts studies. In contrast, 44 teachers (19.5%) were neutral, 15 (6.6%) agreed, and 6 (2.7%) strongly agreed. The computed mean score was 2.03 with a standard deviation of 1.04, indicating a lack of essential teaching and learning materials such as syllabi, textbooks, sketch pads, paints, crayons, and brushes. This aligns with the assertion that inclusive education continues to suffer from a scarcity of learning resources (Nantwi et al., 2019). According to Peerzada (2016), the effective delivery of a Creative Arts curriculum—coupled with the availability of appropriate teaching materials in inclusive classrooms—fosters a friendly and supportive environment conducive to the social and cognitive development of all learners.

4.3. Econometric Analysis

This section of the study employed binary logistics to estimate the impact of physical resources, namely assistive technology, teaching and learning materials, and disability-friendly school infrastructure on all three inclusive education indicators. The results are summarized in Table 3.

Table 3. Impact of Physical Resources on Inclusive Education.

Variable	Categories	Inclusive Education For All Children	Expo B	Active Participation in class	Expo B	Reduction in School Drop Out	Expo B
Appropriate assistive devices		1.704 (12.765) ***	5.495	0.098 (0.254)	1.103	0.438 (6.489) **	1.550
Disability friendly physical structures		0.599 (1.748)	1.820	0.050 (0.062)	0.951	0.307 (3.065) *	1.360
Teaching and learning materials		2.064 (17.392) ***	7.877	0.529 (5.015) **	1.697	0.531 (7.129) **	1.701
Age	21 - 30 (RC)						
	31 - 40 years	−20.619(0.000)	0.000	2.576(4.322) **	13.147	2.229 (3.294) *	9.294
	41 - 50 years	−20.674 (0.000)	0.000	2.442 (3.955) **	11.493	0.876 (0.518)	2.401
	Above 50 years	−21.388 (0.000)	0.000	2.843 (4.419) **	17.161	0.057 (0.002)	1.059

Continued

Sex	Male (RC)						
	Female	−0.735 (1.350))	0.479	0.026 (0.005)	1.027	0.712 (4.981) **	2.039
Highest Educational Level	Diploma (RC)						
	Degree	2.838 (9.772)**	17.077	0.115 (0.018)	1.122	0.607 (0.767)	1.836
	Masters	3.697 (13.020)***	40.323	−0.028 (0.001)	0.073	0.694 (0.987)	2.002
Constant		10.843 (0.000)	51174.552	−2.321 (1.540)	0.098	−3.096 (4.597)	0.045
No. of obs.		226		226		226	
Correct Prediction		93.4		83.6		70.8	
Nagelkerke R^2		0.536		0.096		0.283	
Cox & Snell R^2		0.253		0.058		0.208	
Model Chi^2 (df)		65.920 (10)		13.504 (10)		52.606 (10)	
Wald Chi^2		98.495		79.294		13.584	
P-value		0.000		0.000		0.000	

Source: Field Data (2024); ***significant at 1%; **significant at 5%; *significant at 10%; where; figures in the bracket = wald chi^2, figure before bracket = beta coefficient.

4.3.1. Impact of Physical Resources on Inclusive Education Outcomes

The results presented in Table 3 examine the influence of physical resources and teacher characteristics on three key outcomes of inclusive education: 1) inclusive education for all children, 2) active participation in class, and 3) reduction in school dropout rates.

4.3.2. Inclusive Education for All Children

The findings reveal that the availability of appropriate assistive devices significantly increases the likelihood of achieving inclusive education for all children, with an odds ratio (Exp(B)) of 5.495 and a highly significant Wald statistic ($p < 0.001$). Similarly, the availability of teaching and learning materials demonstrated a strong positive effect (Exp(B) = 7.877, $p < 0.001$), indicating that schools equipped with adequate instructional resources are nearly eight times more likely to support the inclusion of learners with disabilities. Although disability-friendly physical structures did not achieve conventional levels of statistical significance ($p > 0.05$), they still exhibited a moderate positive effect (Exp(B) = 1.820), suggesting some influence on inclusive outcomes.

Teacher qualifications were also found to be a critical factor. Compared to diploma holders (the reference category), teachers with a bachelor's degree and a master's degree were 17.077 and 40.323 times more likely, respectively, to support the inclusion of all learners regardless of disability status ($p < 0.01$). The model accounted for a substantial portion of the variance in inclusive education outcomes, with a Nagelkerke R^2 of 0.536 and a Cox & Snell R^2 of 0.253, indicating that approximately 54% and 25% of the variation, respectively, can be explained by the included variables. The model achieved a high correct classification rate of

93.4%. Additionally, the overall model was statistically significant (χ^2 (10) = 65.920, $p < 0.001$), suggesting a good model fit.

4.3.3. Active Participation in Class

Regarding pupils' active classroom participation, the availability of teaching and learning materials emerged as a significant predictor (Exp (B) = 1.697, $p < 0.05$), suggesting that well-equipped classrooms promote higher engagement among learners. Age was another significant predictor. Teachers aged 31 - 40, 41 - 50, and above 50 years were 13.147, 11.493, and 17.161 times more likely, respectively, to foster active class participation compared to their younger counterparts aged 21 - 30 ($p < 0.01$). This finding underscores the influence of teaching experience and maturity on student engagement.

Although the model showed a modest explanatory power with a Nagelkerke R^2 of 0.096 and Cox & Snell R^2 of 0.058, it correctly classified 83.6% of responses and was statistically significant (χ^2 (10) = 13.504, $p < 0.001$), confirming its overall utility in predicting class participation.

4.3.4. Reduction in School Dropout

The analysis also explored the relationship between physical resources and school dropout rates. Appropriate assistive devices were significantly associated with reduced dropout (Exp(B) = 1.550, $p < 0.05$), as were teaching and learning materials (Exp(B) = 1.701, $p < 0.01$), indicating that schools with these resources are more effective in retaining students with disabilities. Additionally, teacher age was significant, with teachers aged 31 - 40 being 9.294 times more likely to reduce dropout than those aged 21 - 30 ($p < 0.10$), suggesting that older or more experienced teachers may be better equipped to keep students engaged and enrolled.

Furthermore, teacher gender was significant (Exp(B) = 2.039, $p < 0.05$), indicating that classes taught by female teachers are more likely to see reductions in dropout rates compared to those led by male teachers. However, disability-friendly physical structures and teachers' highest educational qualifications were not statistically significant in this model. The model demonstrated reasonable explanatory power (Nagelkerke R^2 = 0.283, Cox & Snell R^2 = 0.208), correctly predicted 70.8% of cases, and had a statistically significant model fit (χ^2 (10) = 52.606, $p < 0.001$).

4.4. Qualitative Analysis of Student Perspectives on Inclusive Creative Arts Education

4.4.1. Theme: Access to Physical Resources

Student Voices:

- "*Our school has crayons and brushes, but my friend who can't see well doesn't have anything to help her draw or paint.*"
- "*Sometimes I want to use the paint sets, but they are not enough for everyone, and the teacher tells me to wait.*"

Students with disabilities often experience exclusion due to the lack of adapted

materials such as Braille-labelled tools, adjustable easels, and tactile materials. Even students without disabilities are affected by inadequate quantities of basic Creative Arts materials, leading to reduced participation and engagement. This aligns with findings by Nantwi et al. (2019), who noted that the unavailability of assistive and instructional resources makes it difficult for learners with disabilities to engage meaningfully in classroom activities. Similarly, Mwangi & Orodho (2004) emphasized that instructional materials such as Braille, hearing devices, and sketch tools are vital for learners' participation in inclusive education.

4.4.2. Theme: Infrastructural Limitations and Accessibility

Student Voices:

- "*The art room is upstairs, and my classmate in a wheelchair can't go there.*"
- *"Sometimes the doorways are too narrow, so we help our friend to squeeze through, but it's not easy.*"

Students highlight physical barriers that prevent equal access to art spaces. This supports previous findings by Eunice, Nyangia, and Orodho (2015), who asserted that classroom infrastructure in most schools in Ghana is not disability friendly. Their research emphasized that poorly designed facilities restrict learners with mobility impairments from accessing quality education, making inclusive implementation difficult. They recommend structural adaptations such as ramps, wide doorways, and accessible furniture as foundational to achieving inclusive education.

4.4.3. Theme: Teacher Support and Attitude

Student Voices:

- "*Our teacher tries to explain things to my friend with hearing problems, but sometimes he just gives up.*"
- "*When I ask for help to draw something, the teacher says I should figure it out myself. I think she doesn't have time for us all.*"

Students perceive teachers' efforts as limited, either due to lack of training or large class sizes. This affects both students with and without disabilities, who may feel unsupported or neglected in skill-building. This observation corresponds with the findings of Cambridge-Johnson et al. (2014) and Opoku et al. (2017), who documented that teachers often lack the skills and confidence required to effectively support learners with special needs in inclusive settings. Additionally, Ajodhia-Andrews and Frankel (2010), as cited in Cambridge-Johnson et al., (2014) highlighted inadequate teacher preparation and inflexible curricula as significant barriers in inclusive classrooms.

4.4.4. Theme: Peer Inclusion and Classroom Experience

Student Voices:

- "*We like group activities in art, but sometimes they don't include the girl who has difficulty speaking.*"
- "*It's fun when we all work together, but we don't always know how to help our friends with disabilities.*"

While students value collaboration, there is a lack of structured peer-support systems. Students show a willingness to help but lack knowledge on how to interact effectively and inclusively. This finding is supported by Botts and Owusu (2013), who emphasized that while inclusive education promotes social integration, insufficient preparation at the classroom level leads to informal and ineffective peer engagement. They advocate for inclusive classroom practices that deliberately structure cooperative learning and sensitize students on supporting peers with diverse needs.

4.4.5. Theme: Psychological and Emotional Engagement

Student Voices:

- "*I feel happy when I can show my work on the wall, but my friend who can't use his hands never gets to do that.*"
- "*I feel sad when others are drawing and I can't join because I don't have the materials.*"

Creative Arts is not just academic but emotional. The lack of inclusive resources affects student morale and self-esteem, especially among learners with disabilities, who may feel left out or undervalued. Peerzada (2016) noted that arts education contributes to learners' socio-emotional development, and a lack of access can negatively impact their self-perception and emotional well-being. Similarly, Eunice, Nyangia, and Orodho (2015) argue that inclusive education must address emotional inclusivity by ensuring that all learners can engage, participate, and express themselves freely in school activities.

5. Discussion of Findings

This study investigated the role of physical support systems assistive devices, instructional materials, and inclusive infrastructure in the implementation of inclusive Creative Arts education in Offinso Municipality. The findings indicate notable gaps in resource availability and accessibility, which limit the meaningful participation of learners with disabilities.

The study found that the absence of adapted tools such as tactile art materials, Braille-labeled instruments, and hearing aids significantly restricts the involvement of students with disabilities in Creative Arts lessons. This outcome reinforces the principles of the Social Model of Disability**,** which views disability as a consequence of environmental and structural barriers rather than individual impairments (Shakespeare, 2017; Berghs et al., 2016). In this context, the lack of appropriate resources disables the learner, not their physical or cognitive condition. As de Beco (2018) argues, inclusive education must shift focus from changing the individual to transforming the system to accommodate diverse learners. Similarly, students' emotional responses such as frustration and exclusion—due to limited access to materials align with Vygotsky's Sociocultural Theory**.** According to Vygotsky, learning is mediated through interaction with the social environment and the tools provided within it (Chaiklin, 2003). Recent applications of this theory in inclusive education (Pugach et al., 2019) affirm that when essential tools

and scaffolds are missing, learners—particularly those with disabilities—are unable to fully engage within their Zone of Proximal Development (ZPD). This means the absence of inclusive tools does not merely affect access but constrains cognitive and creative development.

The study also revealed that many art classrooms were structurally inaccessible, especially to learners with mobility challenges. Features such as narrow doorways, upper-floor art rooms without ramps, and non-adjustable furniture inhibit access. This finding further supports the Social Model's assertion that infrastructure must be universally designed to ensure inclusion (Imrie & Luck, 2014; WHO & World Bank, 2019). Inclusive education is impossible when the physical environment itself excludes learners from participating in the curriculum. Teacher-related challenges were equally significant. While many teachers demonstrated willingness to support inclusive practices, they lacked specialized training and resources. This resonates with recent studies (Opoku et al., 2021; Florian & Black-Hawkins, 2019) indicating that teacher preparedness remains a key barrier to implementing inclusive education effectively. From a sociocultural standpoint, this lack of preparation reduces teachers' ability to provide the scaffolding required to support learners with diverse needs. Furthermore, students reported mixed experiences with peer interaction. While they appreciated collaborative art activities, they often lacked strategies to effectively support classmates with disabilities. This aligns with findings by Graham and Spandagou (2020), who argue that while social inclusion intentions are high among students, effective peer interaction in inclusive settings depends on teacher-facilitated structures and guidance.

In sum, the study affirms that physical support systems are not just complementary but central to successful inclusive Creative Arts education. The findings reflect the ongoing tension between policy intent and implementation realities. The Social Model of Disability highlights the need for systemic reform in resource allocation and infrastructure, while Vygotsky's Sociocultural Theory underscores the importance of mediational tools and support systems in learning. Bridging these gaps requires both material investment and pedagogical innovation.

6. Summary

This study set out to examine the influence of physical support—comprising assistive devices, teaching and learning materials, and disability-friendly infrastructure—on the implementation of inclusive Creative Arts education in basic schools within the Offinso Municipality of Ghana. Using a convergent parallel mixed-methods approach, the study gathered both quantitative data from 226 Creative Arts teachers and qualitative insights from 20 students (including learners with and without disabilities).

Findings from the quantitative data revealed that while some physical resources were present in schools, their availability was inconsistent and generally insufficient to meet the demands of inclusive Creative Arts instruction. Notably, assistive devices and adaptive tools necessary for the participation of learners with disabil-

ities were largely absent. The situation was further compounded by the inadequacy of inclusive infrastructure, as many schools lacked features such as ramps, accessible furniture, and adapted classrooms.

The qualitative component enriched the findings by bringing to light the lived experiences of students. Learners with disabilities expressed frustration and emotional distress stemming from their limited participation in Creative Arts lessons due to poor access to appropriate tools and learning spaces. Even students without disabilities were affected by the inadequate supply of materials, highlighting the broader impact of resource constraints on engagement and creativity. Students also identified gaps in teacher support and limited peer inclusion practices, indicating the need for a more enabling and inclusive classroom culture.

Overall, the study underscores the critical role that physical support plays in achieving meaningful inclusion in Creative Arts education. It reveals that despite national policies promoting inclusive education, implementation at the school level remains challenged by resource limitations, infrastructural barriers, and gaps in teacher preparedness. To bridge these gaps, there is a pressing need for targeted investment in inclusive teaching resources, professional development for educators, and the adaptation of school environments to meet the needs of all learners.

7. Conclusion

This study explored the extent to which physical support systems—namely assistive devices, teaching and learning materials, and disability-friendly infrastructure—influence the implementation of inclusive Creative Arts education in basic schools within Offinso Municipality. Through a mixed-methods design, both teachers' perspectives and students' experiences were examined, offering a well-rounded understanding of the opportunities and challenges associated with inclusive education in the arts.

The findings revealed significant gaps in the availability and accessibility of physical resources essential for effective Creative Arts instruction in inclusive settings. Most schools lacked basic assistive technologies and inclusive infrastructure, limiting the participation of learners with disabilities. Students' narratives underscored how these shortcomings affected their emotional well-being, creativity, and ability to participate fully in classroom activities. Furthermore, the limited capacity of teachers to effectively manage inclusive classrooms due to inadequate training and insufficient resources emerged as a critical concern.

Overall, the study concludes that the successful implementation of inclusive Creative Arts education depends on a supportive physical environment, trained teachers, and inclusive pedagogical practices that actively engage all learners, especially those with disabilities.

8. Recommendations

Based on the findings, the following recommendations are made to enhance inclusive Creative Arts education in basic schools:

1) The Ghana Education Service (GES) and other stakeholders should prioritize the provision of assistive devices, adapted art materials, and inclusive teaching tools. These resources should cater specifically to the diverse needs of learners with visual, hearing, and physical impairments to support their full participation in Creative Arts activities.

2) School authorities, in collaboration with municipal assemblies and development partners, should upgrade existing infrastructure to meet the needs of inclusive education. This includes the construction of ramps, modification of doorways and furniture, and ensuring that art rooms are physically accessible to all learners.

3) Ghana Education and schools must provide continuous in-service training to Creative Arts teachers to build their capacity in inclusive pedagogies and differentiated instruction. Teachers must be equipped with strategies to manage diverse classrooms and support learners with special needs effectively through workshops and Continuous Professional Development programs.

4) Schools should introduce structured peer-assisted learning programs that foster inclusion and collaboration among students. Training students on how to support peers with disabilities can promote empathy, reduce stigma, and enhance group participation in Creative Arts lessons.

5) The Ministry of Education and GES should intensify monitoring and evaluation efforts to ensure that inclusive education policies are being translated into practice. This includes auditing resource distribution, teacher readiness, and infrastructure compliance in line with inclusive education standards.

6) Schools must ensure mechanisms are created to incorporate student feedback especially from learners with disabilities—into the planning and evaluation of inclusive education interventions. Their lived experiences offer valuable insights that can inform more responsive and equitable education practices.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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