

Article

Knowledge Level of Teachers on Inclusive Education in Tamale Metropolis in the Northern Region of Ghana

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Abstract: The study examined teachers' perception of inclusive education in the three educational circuits in Tamale Metropolis in the Northern Region of Ghana. Research paradigms underpinning the study are Positivism, Interpretivism, and Pragmatism. The study adopted a cross-sectional survey research design. The study population comprised 81 teachers from the Gumbihini Educational Circuit, 100 from the Hospital Educational Circuit, and 72 from the Salaga Road Educational Circuit. The study population was from a pool of two hundred and fifty-three (253) teachers. The census method was used as a sampling technique for three (3) educational circuits and two hundred and fifty-three (253) teachers. The main instrument for data collection was a questionnaire. The data were analysed with descriptive statistics to determine the frequencies, percentages, mean and standard deviation scores for the response from the questionnaire and hypothesis. On the level of knowledge teachers in Tamale Metropolis have about inclusive education, Even though the study revealed that teachers know how to meet the needs of learners with learning disabilities and use varied learning activities to engage a diverse range of learners, knowledge in meeting the needs of learners who are gifted most teachers do not know to meet the needs of learners with speech and language, or communication disorder. Again, the findings revealed that teachers need to learn about meeting the needs of learners who are seen as having behavioural difficulties. Teachers were also found to not know about meeting the needs of learners who are blind or have low vision. Furthermore, the study revealed that teachers do not know how to assess, test, or evaluate the learning of children with disabilities. In the statistical analysis, special educators were found to possess a higher level of knowledge among primary school teachers who were studied than their general/regular educators' counterparts, even though the difference was not statistically significant. On the level of knowledge teachers in Tamale Metropolis have about inclusive education, regular in-service education and refresher courses will help improve and reorient teachers' knowledge towards performing their duties in inclusive education. The study, therefore, recommends that the Tamale Metropolis Directorate of Ghana Education Service collaborate with bare school heads in assisting teachers through the implementation of professional development/training programmes to employ adaptive instructional strategies to help children with disabilities.

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1. Introduction

Inclusive education has been internationally recognized as a philosophy for attaining equity, justice, and quality education for all children, especially those traditionally excluded from mainstream education due to disability, ethnicity, gender, or other characteristics [1]. Inclusive education is intended to respond to student diversity by increasing participation and reducing exclusion within and from education [1]. This definition considers inclusive education beyond disability issues. It includes quality

teaching, the attendance, involvement and achievement of all students, especially those who, for different reasons, are excluded or at risk of being marginalized [2]. Despite the continued movement toward inclusive practices, recent studies have found that many teachers have less than positive attitudes towards students with disabilities and their inclusion in general education classrooms [3, 4]. Several studies have shown that primary and high school teachers share similar perceptions regarding inclusive education, some negative and some positive as healthy [4, 5]. Centre for Educational Researches and Consulting found a significant relationship between high school teachers' perceptions of inclusion and classroom setting [6]. This study concluded that teachers with experience in inclusive classrooms held more favourable perceptions toward inclusive education than those who did not teach in inclusive classrooms. Studies have shown that much has stayed the same over the past decade regarding primary school teachers' perceptions of inclusive education [3, 4]. For example, a study on teachers' perceptions of inclusive education revealed that "teachers expressed more positive attitudes toward mainstreaming than inclusion" [5].

Teachers' views about inclusion will likely affect their acceptance and commitment to successfully implementing it [7]. Understanding teachers' perceptions about educating pupils with disabilities in an inclusive general education classroom may help develop programmes that positively change teachers' attitudes and, in turn, contribute to the success of inclusive education. Against this background, this study examined teachers' perceptions about inclusive education in the three educational circuits in Tamale Metropolis in the Northern Region of Ghana. Ghana is one of the countries that has developed a national policy on inclusive education. The fundamental principle is to ensure access and equal educational opportunities for all children, regardless of their emotional, social, physical, intellectual or other conditions [8]. Although efforts are in progress in rolling out inclusive education on a broader scale to reach all learners with special needs, the national policy implementation targets set in the Education Strategic Plan were not realized due to a lack of adequate teacher training, distorted understandings of the inclusive policy; teachers' unwillingness to include students with disabilities, insufficient knowledge of inclusion; lack of professionalism, negative attitude and beliefs towards children with disabilities [8, 9]. These researchers raised concerns regarding teachers' perception of inclusive education, especially in districts where the policy has yet to be rolled out, especially in the three Northern Regions. The implementation of the policy started in the 2015/2016 academic year. More research needs to be conducted in the Northern Region of Ghana to examine the teachers' perceived views regarding the exercise. The study investigated teachers' perception of inclusive education in the three educational circuits in Tamale Metropolis in the Northern Region of Ghana. The study was guided by a research question - What level of knowledge do teachers have on inclusive education in the Tamale Metropolis in the Northern Region of Ghana and a hypothesis **Ho1:** There is no significant difference in the knowledge about inclusive education between general teachers and special school teachers in Tamale Metropolis. **Ha1:** There is a substantial difference in the knowledge about inclusive education between general and special school teachers in Tamale Metropolis.

1.1. The Concept of Inclusive Education

The ultimate aim of special education is to increase access to quality education for children with disabilities by creating an environment that is conducive and responsive to their unique needs. This is based on the assumption that general education cannot accommodate children with disabilities because they have unique needs, which are not considered in general education [2]. In principle, inclusive education assures all students the needed support systems – teaching aids and other teaching support systems, such as a flexible curriculum, adequately prepared teachers, and a welcoming school culture that accepts and tolerates all [10]. In contemporary times, the focus of inclusion has now gone

beyond the inclusion of students with disabilities into regular education to a broader focus on access, quality, equity, social justice, democratic values, participation, achievement, balance between community, and diversity [11, 12]. This is, therefore, a step in the right direction in developing the potentialities of persons with disabilities. However, there has not been a substantive definition for inclusive education, nor is there any consistent government definition of inclusion, making the practice of inclusion brutal [13, 14]. To overcome the difficulty of substantive definition, proposed principal features to ease understanding. Writers noted that inclusion is a never-ending search for better ways of responding to diversity and learning to live with differences. It concerns the identification and removal of barriers and also emphasises those groups of learners who may be at risk of marginalisation, exclusion or underachievement. Lastly, inclusion is about all students' presence, participation, and achievement. This suggests that inclusion is about valuing diversity and individual differences and assuring equality and access. Although there are variations in how people describe inclusive education, common elements tend to feature strongly in the conceptualisation of inclusion. Some of these elements include "a commitment to building a more just society, a commitment to building a more equitable education system" [15].

1.2. Inclusive Education Policy in Ghana

Ghana, along with other African countries, was a signatory to the Salamanca declaration and pledged to set the mechanisms for creating an inclusive education system in motion, which began with integration experiments in the 1970s. The Salamanca Statement and framework for action on Special Needs Education adopted the term Inclusive Education [16]. The focus was on the diversity of children's characteristics and educational needs. The Salamanca conference made sure positive steps were taken by governments committed to Education for All (EFA) in that they did not forget children or deliberately give them low priority. The inclusive education philosophy is built on the belief that all people are equal and should be respected and valued as an issue of fundamental human rights [2]. UNESCO further notes that internationally, many educational authorities are embracing a philosophy of inclusion to address their social and moral obligations to educate all children. The UN Convention on the Rights of the Child emphasised that education should be free and compulsory, at least in its fundamental stages. It states in part, "All rights are indivisible and interrelated." Segregated special education denies children the right to remain within their family and community [17]. In Dakar, governments and other agencies pledged themselves to create a safe, healthy, inclusive and equitably resourced educational environment conducive to excellence in learning with clearly destined levels of achievement for all [18].

The inclusive education policy is anchored in the 1992 constitution of the Republic of Ghana, the Ghana Shared Growth and Development Agenda and the Education Strategic Plan 2010-2020, the Disability Act and the Education Act and in the international agreements that Ghana is a signatory to such as Education for All, and in the 2020 plan among other documents [19]. It is based on the belief that all children can learn and have a right to an education. The policymakers are determined to create a policy that will make a difference where it counts in the lives of children, communities and Ghana's education system. Hence, the policy is accompanied by an implementation plan that sets out who will do what and by when, as well as year-by-year targets and indicators to measure progress. The policy will be reviewed every five years to respond to changing needs. This followed the establishment of Community-Based Rehabilitation (CBR) programs for people with disabilities in 1992 upon the recommendation of the UNESCO Consultation on Special Education. As part of the CBR agenda, Inclusive education was piloted in 10 districts. The Ministry of Education's Strategic Plan between 2003 and 2015 envisions achieving an inclusive education system by 2015. As a result, both government and NGOs

have supported inclusive education and special needs education programs in the last decade [20].

1.3. Teachers' Knowledge of Inclusive Education

Teachers are recognised as persons who play a significant role in delivering inclusive education. It is further asserted that this process of providing education to 'all' children can become challenging and complex to succeed, even with the most accurate plan, if teachers are unable to perform their duties with genuinely good intentions and sincere commitment towards students with disabilities, especially those with severe or complex conditions [2]. This is because teachers, in general, are expected to comprehend the diversities of various learning styles and the different intellectual and physical development of their students to generate the learning environment.

Several studies have shown that primary and high school teachers share similar perceptions regarding inclusive education, some negative and some positive as healthy [4, 21]. A writer found a significant relationship between high school teachers' perceptions of inclusion and classroom setting. This researcher concluded that teachers with experience in inclusive classrooms held more favourable perceptions toward inclusive education than those teachers who did not teach in inclusive classrooms [22]. A study to ascertain the level of knowledge and preparedness of teachers in five schools piloting inclusive education in the Ejisu Juaben Municipality in the Ashanti Region of Ghana indicated that "teachers in the schools chosen for the inclusive education programme had inadequate knowledge of the programme before it was introduced. Interview responses revealed that all the classroom teachers did not know about inclusive education before introducing the policy in the Municipality. Their lack of knowledge of the policy is attributed to the fact that although inclusive education was not part of their pre-service training, they were not given any in-service training on inclusive education" [23].

Consistent with these findings, a comparative and cross-national study conducted in Hoges School, Zuyd, the Netherlands, focused on primary classroom teachers in Maastricht (the Netherlands) in general education and their counterparts in Ankara (Turkey). Questionnaires were administered to 80 teachers in total: 40 teachers belonged to schools in Ankara and 40 teachers to schools in Maastricht. Thus, the total sample was 80 teachers out of about 400 teachers engaged in teaching assignments involving students with disabilities in mainstream classrooms. The purpose of Cavusculu's study was to investigate (1) the current knowledge and views of primary school teachers about teaching students with special educational needs in mainstream schools, (2) to determine the possible challenges of teachers with this education system, and (3) to see whether or not there are resources to support teachers in inclusive settings while performing their assignments. Cavusculu found that teachers in neither country took courses about inclusive education during their attendance at the university and when they engaged in educational activities in the schools. However, teachers in the Netherlands sometimes received assistance in inclusive education, in the classroom and outside of it, from the auxiliary professional members. To an extent, this closed the gap in knowledge about inclusive education and support. Teachers in Turkey reported trying to provide an inclusive education while lacking knowledge about it and not having any support [24]. The study concluded that inclusive educational services in Turkey are facing many problems at the time of implementation. Teacher knowledge about inclusive education needs to be improved, and supportive services still need to be improved. Therefore, this education needs to be successfully provided in Turkey. However, with the necessary support services for inclusive education and the support that reduces the teachers' workload, the implementation of inclusive education by most teachers in the Netherlands is progressing [24]. Persons with a high knowledge of inclusive education are provided for the schools, and fewer problems have been reported. The inference from the study is

that inclusive schools will suffer setbacks if support services for the development of the teacher and the inclusive child are absent.

Moreover, a researcher from the University of Waikato investigated primary school teachers' views and experiences in implementing the inclusive education policy in regular schools. The study was conducted in five districts of the Enga Province of Papua New Guinea. Six primary schools were selected, and 77 teachers responded to questionnaire items, while twelve teachers within the group were chosen to be interviewed. Data for the study were gathered and analyzed from the questionnaires and the interview transcripts. The findings from the survey revealed that most teachers supported the notion of an Inclusive Education Policy and would like to implement it. However, most teachers felt a need to be aware of the principle and the importance of inclusion. Teachers' limited knowledge of teaching children with special needs was also highlighted. According to the researcher, teachers admitted they needed more training in educating children with special education to accommodate and teach children with special needs.

Furthermore, teachers' colleges and universities need more trained lecturers to develop more courses in special education. Teachers expressed concern that school inspectors need to learn more about the inclusive education concept and be trained to implement the policy collaboratively. Government support is also necessary to implement the inclusive education policy effectively. This includes training specialists to support teachers, funds for teaching and learning resources, and school facilities.

Researchers studied 200 final-year pre-service teachers from three colleges of education in Ghana and their views and knowledge on inclusive education and special educational needs (SEN). The results showed that almost all participants had been introduced to inclusion during their studies. However, only one-third felt highly, or somewhat, prepared to teach children with SEN. The level of knowledge and feelings of self-efficacy were highest among those pre-service teachers who had personal experience of supporting children with SEN during their practicum. The participants tended to prefer those inclusive instructional strategies that were easiest to apply in general education classrooms. Significant differences in the outcomes were found between the three colleges studied, indicating strong effects of the teacher education model used in each college. The participants were asked if they had been introduced to inclusive education during their studies. Of the respondents, 90% answered yes and 10% no. These results indicated generally good knowledge of inclusive education except for a small minority. On the KIE scale, the students familiar with the concept ($n = 148$) achieved higher scores ($M = 42.3$, $SD = 6.6$) than those ($n = 17$) who reported not being familiar with the concept ($M = 33.0$, $SD = 9.1$), $t(16,7) = 4.0$, $p = .001$. This confirmed the convergent validity of the scale. The latter group's mean corresponded to the response 'undecided', indicating a total lack of knowledge [18].

Similarly, a study on teachers' views of selected primary schools on inclusive education in the Cape Coast Metropolis. The study adopted a descriptive survey design to help find answers to the problem under investigation, and a questionnaire was used to collect data. A systematic random sampling technique was used to select 76 primary school teachers as the respondents for the study. The study revealed that almost all the respondents have the knowledge and skills to handle pupils with disabilities in inclusive settings. They were perceived to have the required knowledge and skills in handling pupils with disabilities in the Cape Coast Metropolis. The finding also revealed that teachers implement the curriculum by adopting strategies to suit learners and use alternative assessment strategies in assessing pupils in the classroom. This also indicates that teachers at the primary level were prepared to collaborate with other professionals to enhance inclusive education in the Metropolis [26].

A study focused on teachers' perception of adapting inclusive education policies and procedures in the Bahamas and its implication for adult education. The research methodology used in this study was a qualitative phenomenological design, reflective of

semi-structured interviews with participants using pre-set questions outlined by the researchers. Data was collected through semi-structured interviews with 18 public school teachers (ten elementary and eight secondary) throughout the New Providence District in the Bahamas. The results from the study revealed conflicting perceptions towards inclusive education at a primary and secondary level. At the primary level, the participants were very candid with their responses. However, while most of the teachers (60%) demonstrated negative attitudes towards the implementation of inclusive education within primary schools, some of the teachers (30%) displayed mixed feelings about the practice, and one teacher (10%) firmly supported the practice of inclusive education. In general, the teachers viewed inclusive education as challenging due to the myriad deficiencies within the public education system, which would impact the success of inclusive education. Teachers reported that at this present time, "*it is not feasible for the government of The Bahamas to venture into such an undertaking because there are too many concerns in dire need of immediate resolution*" [27].

2. Materials and Methods

Research paradigms underpinning the study are Positivism, Interpretivism, and Pragmatism. The Positivist Paradigm was adopted for the study. Researchers of the positivist tradition argue that social reality is "out there", external and independent of the researcher, and therefore, it can be accessed through objective scientific approaches in physics, chemistry, and biology [28]. The positivist paradigm asserts that actual events can be empirically observed and explained logically [29]. Gill and Johnson explain that the criterion for evaluating the validity of a scientific theory is whether our knowledge claims (i.e., theory-based predictions) are consistent with the information we can obtain using our senses. This study examines teachers' perceptions of implementing inclusive education as a social reality that could be investigated scientifically.

The study adopted a cross-sectional survey research design. The study population comprised 81 teachers of the Gumbihini Educational Circuit, 100 of the Hospital Educational Circuit, and 72 of the Salaga Road Educational Circuit teachers. The study population was from a pool of two hundred and fifty-three (253) teachers. The census method was used as a sampling technique for three (3) educational circuits and two hundred and fifty-three (253) teachers. The main instrument for data collection was a questionnaire. The questionnaire questions were adopted and adapted from the study conducted by GES in collaboration with the UNICEF Ghana Office to suit the study area. The data were analyzed with descriptive statistics to determine the frequencies, percentages, mean and standard deviation scores for the response from the questionnaire and hypothesis.

3. Results

This section presents results on the research question - Research Question 1: *What knowledge do teachers have about inclusive education in the Tamale Metropolis in the Northern Region of Ghana?* This research question sought to determine the level of understanding teachers in the Tamale Metropolis in the Northern Region of Ghana have about inclusive education. In exploring teachers' knowledge about inclusive education, the researcher used descriptive statistics to determine the frequencies, percentages, mean and standard deviation scores for each response from a 13-item questionnaire. Table 1 shows the results from the field.

Table 1. Teachers’ Level of Knowledge about Inclusive Education (n = 243)

Items	Disagree	Not Sure	Agree	M	SD
	f (%)	f (%)	f (%)		
Meeting the needs of learners with intellectual disabilities.	168 (69.1)	24 (9.9)	51 (21.0)	1.52	0.82
Assessing, testing or evaluating the learning of children with disabilities.	164 (67.5)	17 (7.0)	62 (25.5)	1.58	0.87
Using varied learning activities to engage a diverse range of learners.	17 (7.0)	18 (7.4)	208 (85.6)	2.79	0.56
Meeting the needs of learners with multiple disabilities.	56 (23.0)	138 (56.8)	49 (20.2)	1.79	0.66
Meeting the needs of learners with learning disabilities.	25 (10.3)	54 (22.2)	164 (67.5)	2.57	0.67
We are meeting the needs of learners with autism.	41 (16.9)	9 (3.7)	193 (79.4)	2.63	0.76
Meeting the needs of learners who are blind or have low vision.	4 (1.6)	20 (8.2)	219 (90.1)	2.88	0.37
Meeting the needs of learners who are gifted (talented/creative).	15 (6.2)	5 (2.1)	223 (91.8)	2.86	0.50
Meeting the needs of learners seen as having behavioural difficulties.	211 (86.8)	10 (4.1)	22 (9.1)	1.22	0.60
Meeting the needs of learners who are deaf or hard of hearing.	199 (81.9)	22 (9.1)	22 (9.1)	1.27	0.62
Meeting the needs of learners with physical disabilities.	20 (8.2)	9 (3.7)	214 (88.1)	2.80	0.57
Meeting the needs of learners with deaf-blindness.	27 (11.1)	17 (7.0)	199 (81.9)	2.71	0.66
Meeting the needs of learners with speech, language, or communication disorder	31 (12.8)	29 (11.9)	183 (75.3)	2.63	0.70

Source: Field data (2022); Key: f–Frequency, %– Percentage; M–Mean, SD–Standard Deviation

Table 1 presents data on teachers' knowledge about inclusive education. From Table 4.2, the mean and standard deviation scores range from 1.22 to 2.88 and 0.37 to 0.87, respectively. It is evident in Table 4.2 that 208 (85.6%) of the total teacher respondents agreed that they know using varied learning activities to engage a diverse range of learners, whereas 17 (7.0%) disagreed with a mean score of 2.79 and standard deviation of 0.56. The remaining 18 (7.4%) teacher respondents disclosed their indecision on the statement. This means that most teachers know how to use varied learning activities to engage a diverse range of learners. It is again evident that 164 (67.5%) of the teacher participants reportedly know how to meet the needs of learners with learning disabilities, with a mean of 2.57 and a standard deviation of 0.67. However, 25 (10.3%) declined, whereas 54 (22.2%) remained neutral on the same statement. This means that most participants know how to meet the needs of learners with learning disabilities.

Similarly, 15 (6.2%) participants needed clarification on the statement 'Meeting the needs of gifted learners (talented/ creative)' with a mean of 2.86 and a standard deviation of 0.50. Meanwhile, 223 (91.8%) of the participants, forming the majority, affirmed that they know about meeting the needs of gifted learners (talented/ creative). Five (2.1%) teacher participants needed clarification about the stated position. This is an indication that most teachers do know about meeting the needs of learners who are gifted (talented/ creative). Also, 31 (12.8%) of the teacher participants declined the statement 'Meeting the needs of learners with speech, language, or communication disorder.' with a mean of 2.63 and a standard deviation of 0.70. However, 183 (75.3%) of the teacher participants, forming the majority, affirmed that they know about meeting the needs of learners with speech, language, or communication disorders. Twenty-nine (11.9%) of the teacher participants stated their uncertainty about the indicated position. The indication was that most teachers know about meeting learners' needs with speech, language, or communication disorders.

Table 1 reveals that 22 (9.1%) of the teacher participants agreed to the statement 'Meeting the needs of learners seen as having behavioural difficulties' with a mean of 1.22 and a standard deviation of 0.60. Meanwhile, 211 (86.8%) of the majority of participants disagreed with the statement that they know about meeting the needs of learners seen as having behavioural difficulties. Ten (4.1%) teacher participants stated their uncertainty about the position. This indicated that most teachers need to learn about meeting the needs of learners who are seen as having behavioural difficulties. 168 (69.1%) of the

teacher participants disclosed that they do not know about meeting the needs of learners with intellectual disabilities, with a mean score of 1.52 and a standard deviation of 0.82. However, 51 (21.0%) agreed, whereas 24 (9.9%) remained neutral on the same statement. This means that most of the teacher participants do not know how to meet the needs of learners with intellectual disabilities.

Again, 164 (67.5%) of the teacher participants disagreed with the statement that they know about assessing, testing or evaluating the learning of children with disabilities, with a mean score of 1.58 and a standard deviation score of 0.87. On the same item, 62 (25.5%) of the participants disagreed, with 17 (7.0%) of them representing minority were not sure. The indication is that most teachers do not know how to assess, test, or evaluate the learning of children with disabilities. Moreover, 168 (69.1%) of the teacher participants agreed that they know about meeting the needs of learners who are blind or have low vision, with a mean score of 1.52 and a standard deviation score of 0.82. Fifty-one (21.0%) of the teacher participants disagreed, with 18 (7.4%) of them representing minority was not sure. The indication is that most teacher participants do not know how to meet the needs of learners who are blind or have low vision.

It is also evident that 199 (81.9%) of the teacher participants disclosed that they do not know how to meet the needs of learners who are deaf or hard of hearing, with a mean of 1.27 and a standard deviation of 0.62. However, 22 (9.1%) agreed, whereas 22 (9.1%) remained neutral on the same statement. This means that most of the teacher participants do not know how to meet the needs of learners who are deaf or hard of hearing.

Hypothesis 1: The knowledge about inclusive education differs between regular and special school teachers in Tamale Metropolis.

This hypothesis looked for a difference between two groups: regular teachers' knowledge and special school teachers' knowledge about inclusive education. Table 2 illustrates the variability between the regular teachers' expertise and special school teachers' knowledge of inclusive education in the questionnaire administered. In analyzing data using an independent *t*-test, it is considered appropriate to highlight information on the mean and standard deviation. Table 2 provides useful descriptive statistics for the two groups (general and special school teachers).

Table 2. Group Statistics of Teachers' Scores in the Knowledge about Inclusive Education (n = 243)

	What type of teacher are you	N	Mean	Std. Deviation	Std. Error Mean
Teachers' Knowledge	Special school teacher	8	29.63	1.06	0.38
	Regular teacher	235	29.41	1.91	0.12

Source: Field data (2018)

As depicted in Table 2, the examination of the group means indicates that special school teachers ($M = 29.63, SD = 1.06$) showed higher knowledge about inclusive education than regular teachers ($M = 29.41, SD = 1.91$).

An independent samples *t*-test was conducted to determine whether the observed difference in mean scores is significant in the knowledge about inclusive education between regular and special school teachers using an alpha level of 0.05. Table 2 illustrates the variability of means between the two groups. The *t*-test for the independent samples results in Table 2 revealed that there is not a significant difference in the scores obtained by regular teachers ($M = 29.41, SD = 1.91, N = 235$) as compared to that of special school teachers ($M = 29.63, SD = 1.06, N = 8$) in knowledge, with $t(241) = 0.31, p = 0.75$. The mean difference in knowledge about inclusive education between regular and special school teachers was 0.21. Hence, the researcher retains the null hypothesis and concludes that

there is no significant difference in the knowledge about inclusive education between regular and special school teachers in Tamale Metropolis. Also, the 95% confidence interval for the mean difference between the regular and special school teachers' knowledge was -1.12 to 1.55. Moreover, the assumption of homogeneity of variances was tested and satisfied via Levene's test for equality of variances with $p > 0.05$, as seen in [Table 2](#).

4. Discussion

Primary School Teachers' Level of Knowledge on Inclusive Education

Although the study found primary teachers to be known for using varied learning activities to engage a diverse range of learners, it was discovered that teachers do not know about meeting the needs of learners with speech, language, or communication disorders and learners seen as having behavioural difficulties. Also, the findings revealed that primary school teachers do not know how to assess, test, or evaluate the learning of children with disabilities. Generally, primary school teachers were found to need more adequate knowledge to manage inclusive classrooms. These findings are consistent with a similar study, revealing that "teachers in the schools chosen for the inclusive education programme had no adequate knowledge of the programme before it was introduced" [23]. Similarly, other writers also expressed concern about the adequacy of training given to teachers in the Colleges of Education [25, 30]. For instance, a writer disclosed that teachers admitted they needed more training in educating children with special education to accommodate and teach children with special needs. They attribute this to the fact that special education is not a significant component of their course content and, therefore, need the opportunity to acquire adequate knowledge in special needs education during their pre-service training. Thus, teachers must undergo extensive in-service training to handle children with special needs. Furthermore, colleges and universities need more trained lecturers to develop more courses in special education [23].

There is no Significant Difference in the Knowledge of Inclusive Education between Regular and Special School Teachers.

Undoubtedly, there is a need to be aware of the principle and the importance of inclusion for teachers who are considered key players in implementing inclusive education. Among primary school teachers who were studied, special educators were found to possess a higher level of knowledge than their general/regular educators' counterparts, even though the difference was not statistically significant. This is very alarming since special educators who have been explicitly trained to handle children with disabilities in Ghanaian schools are supposed to be more knowledgeable in the implementation of inclusive education than their general/regular teacher counterparts. From the findings, exceptional schools and regular teachers must receive more intensive and rigorous training in inclusive education.

This is inconsistent with a previous study conducted to examine primary school teachers' current knowledge and views about teaching students with special educational needs in mainstream schools. The study found that "teachers took courses about inclusive education while attending the university and engaging in academic activities in the schools". It was also revealed that "teachers sometimes received assistance in inclusive education from the auxiliary professional members in the classroom and outside of it". To an extent, this closed the gap in knowledge about inclusive education and support. Ineffective implementation of inclusive education, one component of student achievement is the ability of teachers to plan together collaboratively. General and special educators must collaborate when a school implements complete inclusion programs that meet every student's needs [24].

5. Conclusions and Recommendations

On the level of knowledge teachers in Tamale Metropolis have about inclusive education, Even though the study revealed that teachers know how to meet the needs of learners with learning disabilities and use varied learning activities to engage a diverse range of learners, knowledge in meeting the needs of learners who are gifted most teachers do not know to meet the needs of learners with speech and language, or communication disorder. Again, the findings revealed that teachers need to learn about meeting the needs of learners who are seen as having behavioural difficulties. Teachers were also found to not know about meeting the needs of learners who are blind or have low vision. Furthermore, the study revealed that teachers do not know how to assess, test, or evaluate the learning of children with disabilities. In the statistical analysis, special educators were found to possess a higher level of knowledge among primary school teachers who were studied than their general/regular educators' counterparts, even though the difference was not statistically significant. On the level of knowledge teachers in Tamale Metropolis have about inclusive education, regular in-service education and refresher courses will help improve and reorient teachers' knowledge towards performing their duties in inclusive education. The study, therefore, recommends that the Tamale Metropolis Directorate of Ghana Education Service collaborate with bare school heads in assisting teachers through the implementation of professional development/training programmes to employ adaptive instructional strategies to help children with disabilities.

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References

- [1] Ngozi, C. U., & Subbey, M. (2022). Teacher resources are available to facilitate inclusive educational practices in pre-schools within Obio-Akpor in Nigeria. *International Journal of Research and Innovation in Social Science*, 6(1), 227-233.
- [2] Haug, P. (2017). Understanding inclusive education: ideals and reality. *Scandinavian journal of disability research*, 19(3), 206-217.
- [3] Forlin, C., Sharma, U., Loreman, T., & Sprunt, B. (2015). Developing disability-inclusive indicators in the Pacific Islands. *Prospects*, 45, 197-211.
- [4] Lindblom, A., Soan, S., Dindar, K., Carew, M., Kärnä, E., & Roos, C. (2016). Contributing to Change in Teacher Education? Assessing Student Teachers' Attitudes towards People with Autism Spectrum Disorder. In *European Conference on Educational Research-ECER 2016 22-26 August Dublin*.
- [5] Aktan, O. (2021). Teachers' Opinions Towards Inclusive Education Interventions in Turkey. *Anatolian Journal of Education*, 6(1), 29-50.
- [6] Center for Educational Researches and Consulting (2013). An assessment of the implementation of inclusive education in the Republic of Armenia. Open Society Foundations-Armenia. Retrieved from www.e-research.am.digitalbrain.com/imfundo/web/papers/refpapers on 10/10/2018.
- [7] Rouse, M. (2008). Developing inclusive practice: A role for teachers and teacher education? *Education in the North*, 16, 6–11.
- [8] Ametepe, L. K., & Anastasiou, D. (2015). Special and inclusive education in Ghana: Status, progress, challenges, and implications. *International Journal of Educational Development*, 41, 143–152.
- [9] Alhassan, A. M. (2014). Implementing inclusive education in Ghanaian primary schools: A look at teachers' attitudes. *American Journal of Educational Research*, 2(3), 142–148.
- [10] Peters, S. J. (2013). The heterodoxy of student voice: Challenges to identity in the sociology of disability and education. In *The Sociology of Disability and Inclusive Education* (pp. 63-74). Routledge.

-
- [11] Azorín, C., & Ainscow, M. (2020). Guiding schools on their journey towards inclusion. *International Journal of Inclusive Education*, 24(1), 58-76.
- [12] Salend, S. J., (2010). Evaluating inclusive teacher education programs: A flexible framework. In C. Forlin (Ed), *Teacher Education for Inclusion: Changing Paradigms and Innovative Approaches* (pp. 208–214). Abingdon: Routledge.
- [13] Pearson, S. (2016). *Rethinking children and inclusive education: Opportunities and complexities*. Bloomsbury Publishing.
- [14] Deku, P., & Ackah, F. R. (2012). Teachers Conceptualization of Inclusive Education in Ghana. *Ife Psychologia* 20 (1), 152–164.
- [15] Botts, B. H., & Owusu, N. A. (2013). The state of inclusive education in Ghana, West Africa. *Preventing School Failure: Alternative Education for Children and Youth*, 57, 135–143.
- [16] United Nations Development Programme (UNDP) (2013). *The rise of the South: Human progress in a diverse world*. Author, New York.
- [17] Byrne, B. (2022). How inclusive is the right to inclusive education? An assessment of the UN Convention on the Rights of Persons with Disabilities' concluding observations. *International Journal of Inclusive Education*, 26(3), 301-318.
- [18] Nketsia, W., & Saloviita, T. (2013). Pre-service teachers' views on inclusive education in Ghana. *Journal of Education for Teaching*, 39(4), 429-441.
- [19] Anthony, J. H., & Kwadade, D. D. (2006). *Inclusive education: Master teacher trainer, manual. Report of Education Quality for All (EQUALLY)*. Special Education Needs Component USAID: Accra, Ghana.
- [20] Ministry of Education. (2015). *Inclusive education policy*. Accra: MOE.
- [21] Dupoux, E., Hammond, H., Ingalls, L., & Wolman, C. (2006). Teachers' attitudes toward students with disabilities in Haiti. *International Journal of Special Education*, 21(3), 1-14
- [22] Wiggins, C. C. (2012). *High school teachers' perceptions of inclusion*. Liberty University.
- [23] Mprah, K. W., Dwomoh, J. A., Opoku, P. M., Owusu, I., & Ampratwum, J. (2016). Knowledge, Attitude and Preparedness of Teachers towards Inclusive Education in Ejisu-Juaben Municipality in Ashanti Region of Ghana. *Journal of Disability Management and Special Education*, 6(2), 1-15.
- [24] Cavusculu, M. (2006). *The key person in inclusive education is the teacher*. Zuyd, Maastricht, the Netherlands, Hoges School.
- [25] Mapsea, A. J. (2006) *Teachers' views on providing for children with special needs in inclusive classrooms: a Papua New Guinea study*: New Zealand, University of Waikato.
- [26] Boakye-Akomeah, E. (2015). *Perception of teachers on inclusive education in selected primary schools in the Cape Coast Metropolis of Ghana*. Unpublished M.Phil thesis, University of Cape Coast, Cape Coast, Ghana.
- [27] Newton, N., Carbridge, J., & Hunter-Johnson, Y. (2014). Teachers' perceptions of inclusive education and its implication for adult education in the Bahamas. *Adult Education Research Conference*. Retrieved from <http://newprairiepress.org/aerc/2014/papers/> on 27/10/2018.
- [28] Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education*. London: Routledge.
- [29] Gill, J., & Johnson, P. (2010). *Research methods for managers* (4th Ed.). London: Sage Publications Ltd.
- [30] Avoke, M. (2004). *Introduction to Special Education for Universities and Colleges*. Accra: City Publishers.