

Article

An Assessment of Inclusive Education Experiences of Teacher-Trainees with Sensory Impairment in Colleges of Education in Ghana

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Abstract: Effective Inclusive education experiences can be built through structured interventions. The purpose of the study was to assess the impact of inclusive education experiences on teacher-trainees with sensory impairment in the Ghana Colleges of Educations of Ghana. The study was based on pragmatist philosophy. The study adopted convergent parallel mixed-methods approach. The population involved all 66 students with sensory (visual and hearing) impaired in the three (3) CoEs (PCE, Akropong Akwapim, WESCO, Kumasi and NJA, Wa) that practice inclusive education (IE) during the 2018/19 academic year. Purposive and census sampling techniques were used to select the three (3) colleges of education and sixty-six students for the study. The main instruments for data collection were questionnaire and focus group discussion. The quantitative data items were coded for input into the Statistical Product and Service Solutions (SPSS) version 23 software and analysed using means and standard deviations. The qualitative extracts collected into themes that were coded, analysed and interpreted. The study revealed that teacher-trainees had varied experiences on campus, while they felt welcomed into the inclusive institution; they also felt the Colleges were not well prepared to meet their needs. The physical environment was not conducive for the VI on campus. It is recommended that, College authorities should work with the MoE and agencies concerned with disability issues in the society to provide comfortable environment on College campuses for TTSI. It is also recommended that, providing a comfortable environment should include facilities and resources needed for the TTSI to learn effectively. It also involves physical arrangement of the campus environment. The TTSI, regardless of their disabilities, should be provided with an environment where their movement, their studies, their interactions with their peers and tutors are made easier to help them graduate successfully.

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1. Introduction

The process of educating learners with diverse learning needs in the mainstream education has gained much attention. There is a growing international urgency to include persons with disabilities in all institutions, thus the concept called Inclusive Education [1, 2]. It is the goal of Inclusive Education (IE) to provide appropriate solutions to the wide range of learning demands in both formal and informal educational environments. As a result of recognising the uniqueness of each kid, it ensures that all students, regardless of background or affiliation, have access to a high-quality education [3]. IE is for all students and not a fraction of them. Being included is about the institutions being ready for the

learner. Learners are most of the times ready to attend regular schools and be in regular classrooms to learn except when they have challenges [4].

Consequently, there is the need for teachers' creativity for a successful inclusive education. Creativity may mean the teachers' ability to teach in different ways or design their classroom environment and lessons so that the attention of all learners can be captured for them to fully participate in classroom learning. In a quasi-experiment carried out in Cape Coast, children with Down's syndrome were included for six weeks in a regular class. Children with Down's syndrome found the regular classroom appealing and did not want to return to the special school they attended [5]. This is an indication that learners with Down's syndrome get interested in the environment as a result of the experience they encounter in their new environment. Every child is unique in terms of their characteristics, interests, abilities, and educational requirements, and as a result, educational systems and programmes should be developed and implemented to take this into account. For students with special educational needs (SEN), this means that they should have the option of attending a regular school. In the end, this study shows that normal schools with an inclusive orientation are the most essential component in decreasing negative preconceptions, generating welcoming communities and creating an inclusive society. In addition, they deliver high-quality instruction to the vast majority of students while simultaneously enhancing the overall efficacy and efficiency of the educational system [6].

According to the principles of inclusive education, all students should be included in the same classroom, even if they have different learning styles or physical limitations. IE entails placing students in age-appropriate general education classes in nearby schools where they can benefit from high-quality lessons, interventions, and other forms of assistance in order to complete the expected primary academic curriculum [7]. Teachers have a responsibility to operate with the assumption that students with disabilities have the same potential to learn and to perform to the best of their ability as students without impairments. This group of students is expected to participate in all school and community-based educational activities. This includes things like school field trips and other organised activities like debates or student government.

The education of people with disabilities has become an established policy objective in many countries for which Ghana is not an exception. Several studies on IE have been conducted in this respect [8-10]. Results from these studies point to the fact that education of people with disabilities together with those without disabilities should be given the needed attention in countries where it has not gained the desired prominence, especially in Ghana. Basically, IE extends beyond marginal integration of students into mainstream education [3]. The focus is on how to make the system more flexible so that it can accommodate a wider range of students' demands in the future. Inclusion is defined as a method for meeting the diverse needs of all students by expanding their involvement in education, culture and society as a whole, and by reducing their risk of being excluded from or marginalised within it [11]. This definition captures the major dimensions of IE which occur due to barriers to students' attendance to school, students' access to and full participation in the education process as well as students who are restricted from fully engaging in their classroom educational process. About 15% of every population has one form of disability or another [11]. Out of over 7.8 billion people the world over, an estimated 2.2 billion people have a form of visual impairment with one billion also with some form of hearing impairment [11]. In the same way, Disabled World also indicated that in Africa, an estimated 60-80 million people are living with disabilities [12]. It goes on to say that individuals with disabilities account for 10% of the African population overall, but could be as high as 20% in the poorest areas. The great majority of Africans with disabilities are denied access to education and employment opportunities, practically ensuring that they will spend the rest of their lives as the poorest of the poor. The number of disabled students enrolled in school is estimated to be between 5 and 10% [12]. The

Ghana Statistical Service estimates the prevalence of disability in the Ghanaian population at 3% (737,743). They further reported that 40.1% and 15% of the persons with disabilities were visually and hearing impaired respectively. They further mentioned that cumulatively, less than 10% of persons with disabilities have a high school or vocational/technical education [13].

However, the advertisements for admission into CoEs in Ghana for the 2019/2020 academic year and the preceding years show that only three out of the 46 Colleges practice inclusive education for teacher-trainees with sensory impairments [14]. Although the Colleges practising IE are few, they have been able to produce some teachers with sensory impairment. With a few exceptions, most of these teachers with sensory impairments work in special schools; a few are also employed by coeducational institutions (CoEs). A few colleges in Ghana have teachers who are visually challenged, such as the Mampong Technical College of Education and Wesley College of Education-Kumasi in Ghana. For teacher-trainees with sensory impairment (TTSI) to be able to graduate successfully from inclusive colleges, various factors need to be considered and put in place. The experiences TTSI go through to a larger extent is most likely going to affect their successful graduation. Inclusive education has become one of the most prominent issues in the education of students with SEN in almost every country. "In the past 40 years, the area of special needs education has shifted from a segregation paradigm through integration to a point where IE is central to contemporary discourse" [15]. Many learners with disabilities in normal classes, do not always receive the special education services they need to fully access the curriculum. Inaccessible instructional approaches may be blamed for this lack of substantive involvement [16]. The IE policy of Ghana section 5.1.1.2.3 provides a policy statement on tertiary education, which states that;

"Tertiary and Higher Education (both public and private) should under no circumstance deny an applicant admission on the basis of his or her special needs. Admission should be given to an applicant who satisfies the minimum admission requirements. Concessionary admission should be given to candidates who manifest special needs" [17].

This statement from the policy clearly shows that Ghana expects TTSI to be given access to tertiary institutions without any hindrance. As a follow up from the passing of Persons with Disability Act, Act 715, provision was made for the education of the person with SEN. For example, Article 20 (1) states that:

"A person responsible for admission into a school or other institution of learning shall not refuse to give admission to a person with disability on account of the disability unless the person with disability has been assessed by the ministry responsible for education in collaboration with the ministries responsible for health and social welfare to be a person who clearly requires to be in a special school for children or persons with disability" [18].

This policy appears not to have been fully implemented by most CoEs in Ghana. The question of why the policy is not being fully implemented remains unanswered. This might partly be due to lack of resources, personnel and more qualified potential TTSI not applying to the CoEs. A study in Accra, Ghana, attest that the theoretical framework of universal design and a 'disability friendly' environment that is proposed in Ghana's IE Policy is not being upheld as expected [17, 19]. For example, few CoEs in Ghana enrol TTSI. In cases where they have been admitted to the colleges, there is a paucity of research on how satisfied they are in the institutions, how they persist as well as how they manage to graduate successfully. This again has called for this study which otherwise seeks to find

out how TTSI are faring in the colleges practising IE and what could be done to encourage other colleges to enrol prospective TTSI.

All the Colleges that practice IE in Ghana mostly enrol students who are visually or hearing impaired. Braille and large prints are used for the blind and those with low vision, while sign language and hearing aids are used for the deaf and hard of hearing to aid them in the teaching and learning process. A study in South Africa, identified what has been missing from previous research on students with disabilities is an embodied account of their lived experiences on campuses [20]. Ghana is no exception to this observation. Therefore, this study was focused to fill that existing gap. In addition to the situation observed in Ghana, there is a scarcity of research on how the inclusive experiences support the students with disability to persist in Ghanaian CoEs, or how satisfied students with disabilities are in the Colleges that admit them. This area has therefore become an important area of study as there may be other TTSI willing to attend CoEs to become professional teachers but may find it difficult to enrol since they may not know how they can fit into the institutions. IE, as we have is about acceptance, participation and achievement. For this to be possible, it is expected that the student is satisfied with whatever transpires in the institution to be able to reach the expected success in the inclusive colleges. The purpose of the study was to assess the impact of inclusive education experiences on teacher-trainees with sensory impairment in Ghanaian CoEs. What are the inclusive education experiences (IEE) of teacher-trainees with sensory impairment (TTSI) in the Colleges of Education (CoEs)?

1.1. Inclusive Education

Inclusive education usually meant placing children with disabilities in regular education classrooms and providing them with the assistance they require [21]. Students who would normally be assigned to an IE school are instead educated with their age-peers. [22]. The basic concept of IE is the value of diversity within human society [23]. The researcher emphasizes that IE is completely accepted when the notion that learners must become "natural" to contribute to society is abandoned [23]. The only way we can rise to the status of contributing members of society is to think outside the box. As a result of this accomplishment, society moves one step closer to attaining the attainable goal of giving all students a sense of belonging. A sense of belonging is a sense of belonging to the campus community and a sense of loyalty to a particular group. College students' sense of belonging is based on their experiences with social support, connectedness, and a sense of belonging [24]. This implies that social inclusion measures the sense of belonging of the entire student body.

1.1.1. Sensory impaired (VI, HI) in inclusive environments

Since the study focuses on the sensory impaired in the inclusive environment, this part of the review looked at the visual and hearing impaired in inclusive environments. Unfortunately, the empirical literature on the experiences of TTSI in Ghanaian CoEs is unavailable. This has been a big gap this study is expected to fill. The visually impaired in an inclusive environment. Students with VI have visual problems that, through correction, have a detrimental effect on their learning [25]. A blind student studies using Braille as a means of instruction [21]. A study conducted at Busia, Siaya, Vihiga and Kisumu Counties revealed two groups of visually impaired students based on their educational needs. The first was those learners who need only print materials for studying. The second were those learners that use Braille. As a result, students with visual impairments may be blind or have poor vision [26]. Due to the severity of the visual impairment, special education services and accommodations need to be in place to support the affected students [27].

Ghana had 24,658,823 (0.4%) of her population as persons with disabilities [13]. The visually impaired accounted for 40.1 % of all disabled people. Among the many people

with disabilities, those with VI were most common among those with a higher level of education, particularly those in middle school. The fact that Ghana has a variety of specialised academic institutions that serve the needs of visually impaired students explains this. Ghana's educational system has developed over time to encourage visually impaired students to participate in daily schooling up to the university level. These opportunities have helped a large number of visually impaired people [13].

Visual Impairment should not limit the student's ability to compete with their peers. People with VI need education to address some of the difficulties they face as a result of their condition and to fully improve their abilities and potential [28]. Since education benefits everyone, regardless of ability or disability, it is important that people with visual impairments have equal access to educational, healthcare, and social services. IE happens when a student with VI is accepted by their peers and teachers as a regular class member [29]. An adequate number of IE-enhancing technologies should be available in standard courses [27, 30]. In terms of learning, a traditional classroom is the most liberating environment available.

However, leading students through their learning planning and explicitly teaching them using a variety of techniques and technologies can take up a significant amount of time [31]. Adequate human, financial, and material resources must be made available to facilitate good IE of students [31]. An accommodating and flexible general education classroom instructor, as well as peer recognition and involvement, accessible support personnel, and adequate equipment supplies for both blind and low-vision students, are all critical to the success of students with visual impairments in mainstream classrooms [27]. Effective inclusive strategies for students of all types of disabilities, including those who are sensory impaired, necessitate certain changes to learning environments and teaching methods [32]. To that end, blind students should have access to classroom furniture and learning materials. When it comes to bringing children with visual impairments into the classroom, a variety of factors need to be taken into consideration, including sitting locations, lighting, and reading content. For people with serious visual impairments, technical developments have opened up a whole new environment. Students with visual impairments can now access print information due to developments in microcomputer technology. When reading an electronic book on a laptop, the reader can easily increase the size of the print or move from voice to print [25, 31-32]. Individuals with visual impairment are gaining access to technologies and assistive devices that can help them lessen the impact of their disabilities. Learners and adults with visual impairments should use the following technical devices: Braille machines, talking watches, clocks, calculators, and food scales are only a few examples [31]. Successful IE is supported by the use of suitable technical equipment.

Nonetheless, these educational and living aids for persons with VI are not readily available in most developing nations including Ghana. A research reported in Nigeria, a lot of the educational materials for the visually impaired were not produced locally and thus several challenges such as financial difficulties impede its purchases [28]. A study found that factors such as availability of teaching and learning equipment, funding, law and administrative rigidity were the major challenges to a successful inclusive education [33]. A researcher conducted a study to assess the challenges of the VI at University of Jordan. It was shown that the main challenges include using the library, transport, and the difficulties of lecturers understanding the needs of these students [34]. Higher education institutions encounter many obstacles for visually challenged students, including a dearth of Braille-printed books and a paucity of visual readers, difficulties in assimilating to university life, and teachers' indifference to their unique needs [35].

Dwelling on these obstacles which influence the success of IE for the visually impaired, it could be asserted that to achieve a successful IE for VI, various strategies and plans that will combat these obstacles are needed. Again, a team of professionals such as audiologists, psychologists, social workers, and speech therapists together with

educational experts are needed to draw an updated individualised plan for VI in Ghana's Colleges. These experts will help the teacher prepare the best possible education for the learners. Even though parents and family members aren't experts in the technical sense, they should be a part of the team that supports students with visual impairments. Collaborative efforts could ensure that students with visual impairments have access to best practises from the qualified professionals in appropriate settings.

1.1.2. The Hearing Impaired in an Inclusive Environment

Mild to severe hearing loss can be the result of a variety of factors. Hearing loss is defined as the inability to hear sounds with a decibel level of 25 or lower [36]. Individuals with severe and profound hearing loss are considered deaf, while those with milder impairments, such as a hearing loss that affects only one ear, are considered hard of hearing [36]. Hearing loss can be categorised as either deaf or hard of hearing depending on the severity of the hearing loss [37]. If left unchecked, students with hearing loss of any kind and degree would have a detrimental effect on their ability to learn spoken and responsive expression, read and write, and academic achievement [38].

Traditionally, strategies to educating deaf students have been focused on sentiment and personal philosophy rather than positive outcomes; on the other hand, the education of hard of hearing students has been largely ignored [39]. Educational traditions in the United States can be traced back to the teachings of European educators active in the eighteenth and nineteenth centuries, [39]. According to them, a French cleric named Charles-Michel de l'Épée created a school in 1770 where he emphasized the use of sign language and finger spelling (that is, a manual approach). Around the same time, members of the Braidwood family founded schools in England, emphasizing the use of spoken language and speech reading rather than sign language (that is, an oral approach) [39].

A study revealed that 37% of 1,218 students with minimal hearing loss in Toronto missed a grade in a 1998 survey. Students with unilateral hearing loss are ten times more likely than usually hearing students fail a class, according to reports [39]. The overwhelming majority of students with hearing loss (94–96%) are hard of hearing rather than deaf. Speech can be audible to these students, but it is not intelligible enough for them to distinguish one word from another.

In 2012, the WHO projected that about 350 million of the world's population live with some kind of hearing impairments. Out of this estimation, it was estimated that 91% were adults and 9% children [40]. In United States had about 50,000 school-age deaf students. A further 5 million school-aged children were permanently deafened, placing their education at risk. Again, 1.5 million people have conductive hearing loss, which is typically temporary. With the inclusion of preschool students, the overall number of students with hearing loss could approach 10 million [41].

With the 24,658,823 (0.4%) of the Ghanaian population as persons with disabilities in the 2010 housing census, 15% were hearing impaired [13]. The Ghana National Association of the Deaf (GNAD) encourages people with hearing impairment to work for themselves and engage in income-generating practices such as batik, seed farming, and citrus farming, according to GSS. It also helps people with HI to aspire for higher educational goals so that they can act as role models for others.

Students with hearing loss should be able to choose from a variety of educational placement options within their school districts, ranging from limited to maximal assistance, depending on the individual student's needs [42]. For students who have hearing loss, there are a variety of options available, such as specialised residential or day schools, classrooms designed specifically for them, resource rooms in regular schools, classrooms with an itinerant teacher, and classrooms with only the services available to students who are deaf or hard of hearing. The three options above are all forms of IE, in which a student with hearing loss spends some or all of the day in a classroom with

hearing peers. Testing improvements, classroom assistance, and access to assistive listening devices are some of the accommodations to the educational program that could be included in these choices. However, in inclusive CoEs in Ghana, the curriculum is rarely changed, and students are required to perform at the same level as their peers with normal hearing in academic subjects [42]. The inability of parents, providers, and the community to recognize and provide the required assistance for hearing impaired individuals is one of the most important challenges that they face [43].

All of these advantages of IE are unique to orally trained students with hearing loss: social contact, access to traditional linguistic and behavioural models, a stimulating and highly oral atmosphere with richness of information, expanded learning opportunities, and access to a broader curriculum. Since it allows students with hearing loss to interact and form relationships with their peers who have normal hearing, IE has been shown to promote social acceptance and self-esteem, as well as the ability to form mature social relationships with those who do not have these disabilities. When it comes to inclusive education, students with hearing loss need to be given and take advantage of the many opportunities for interaction with their peers, instructors, and instructional materials [44].

1.1.3. Inclusive education experiences of teacher-trainees with sensory impairment (TTSI)

Some studies have concentrated on the sensory impaired (visual and hearing impairment) in comprehensive education environments. Researchers published a study titled "Voices of university students with disabilities: accessible education on the tertiary level—a fact or a distant dream?" It was the goal of the research to learn more about the challenges and resources experienced by Czech university students with disabilities, particularly in the areas of academics, social assistance, and employment opportunities. Interviews were conducted with twenty-four (24) impaired university students in the Czech Republic. The average age of the participants was 25, according to the data. The majority of the attendees (15 of them) were special needs school children. Eighteen out of the twenty-eight students were single; just three (3) were married with children and two (2) had a companion. The interviews were evaluated based on the grounded theory technique. Results show that students with disabilities face a wide range of hurdles, including those that are specific to their impairment. Students also cited family support, peer support, and assistance from assistants as sources of assistance. The participants also discussed how they dealt with the obstacles they encountered. Assertiveness, self-determination, metacognition, attempts to 'fit in,' optimism, and career preparation were the top five [45]. Another study stated that while some programs are in place in Cameroon to educate students with hearing impairments in regular schools, difficulties remain in their education. Academic help, classroom placement, and the way sign language interpreters operate were also identified as major initiatives and obstacles in the education of students with HI in regular schools, according to their findings. They discovered that sufficient changes had not been made within the schools to address the needs of students with HI, raising concerns about their inclusion in regular school [46].

1.2. The social model of disability

Both adults and children with disabilities have the right to belong and be valued in their local society, according to the 'social model'. The social model does not completely rule out impairments, but its proponents insist that disability is conditional on social circumstances [47, 48]. Using this model, examine the individual with impairment's strengths as well as the physical and social obstacles that hinder them, whether at school, college, home, or work. The 'social model' approach proposes that people with disabilities suffer from a complex type of cultural discrimination, such as sexism, racism, or heterosexism, which is as central to the culture as sexism, racism, or heterosexism [49]. Disabled People's International claims that improving culture is the 'cure' for the issue of

disability. Unlike medical cures, this is a target that can be done and benefits all [50]. Disabled people's disabilities are seen as a result of their malfunction in the social paradigm [51]. Social factors or structures stand in the way of disabled individuals participating. Instead of focusing on the condition itself, the social model of disability examines the environment in which the person with a disability lives. At its core, the social principle of disability is based on the notion that disability is a social construct that is a result of society's opinion that people with specific disabilities are different. People with disabilities are unable to participate in their communities because of social system barriers [49, 51]. This, in turn, has an influence on the person's academic work and performance, as well as the services given to them. To put it another way, the model considers disability as a series of environmental conditions that restrict one's desire to perform a job, preventing people with disabilities from fully engaging in society and determining the resources available to them.

The barriers that prohibit people with disabilities from engaging in any situation, are what disable them [49]. The social model is based on the distinction between illness and disability. They offer the social model a visual representation. Figure 2 illustrates this.

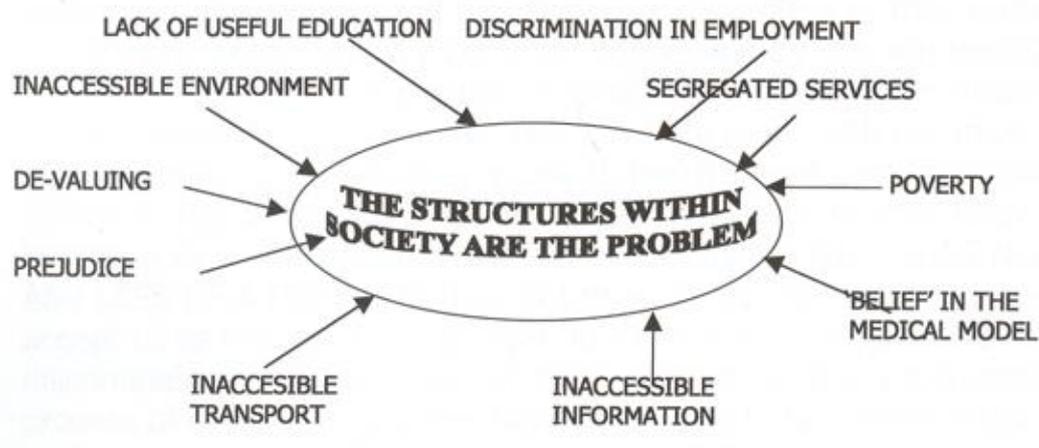


Figure 1. The Social Model (Source: UKDHM, 2018)

People with disabilities are active fighters for equality who collaborate with allies [49]. The social model emphasizes that the community is what restricts people with disabilities access to jobs, education, and social engagement. Prejudices, discrimination, and stigma are all ingrained in the social model [52]. As a result, the majority of people with disabilities have insufficient access to, involvement in, and adequate provision of quality education. As previously mentioned, the social paradigm of disability represents human rights and equality. The belief is that it was the organisation of society, as described by people without disabilities that were more severely debilitating than individuals' physical or mental impairments, as claimed by medical definitions of disability [53]. The locus of the issue, according to the social model, is not the individual, but the oppressive aspects of cultural, political, and un-enabling economic conditions in which people with disabilities live [54].

Since the 1990s, the Disability Movement has argued that the solution to disability's problems lies in re-framing the world and culture, rather than in "normalization" or "care," as the medical paradigm suggests [55]. This viewpoint was the foundation of the social model, which saw disability as the product of any societal behaviour or obstacle that keeps people with disabilities from participating equally in society [56]. It is possible that these obstacles are both physical (e.g., inaccessible buildings or transportation), as well as psychological (e.g., absence of sign language interpreters) (such as discrimination in the place of work). In contrast to the medical paradigm, the social model sees disability

as a human right issue. Disabled people's organisations (DPOs) have been at the forefront of questioning professional superiority and demonstrating that persons with disabilities have the right to make their own life decisions. They have also raised awareness of civil society's role and duty in incorporating disability into wider social issues.

However, the administration of the situation in the social construction requires social values, and as a result, society is required to design the environment to meet the needs for complete participation in all aspects of life [57]. The situation is ethnic as well as belief-based, encompassing the person, culture, and environmental change ([57]. With the social model, culture and people's views and perceptions of people with disabilities must be modified [54]. This model is relevant to this study because it underlines the importance of states ensuring that people with disabilities and special needs are educated as part of the educational system. People with impairments and those with special needs are thus educated by general educational authority in integrated surroundings. Disabilities education should be a major part of national education preparation, curriculum development, and school structure. Education in mainstream schools is predicated on the availability of suitable and essential support services for pupils who are partially sighted.

1.2.1. Impact of the model/theory in this study

The social model sees disability as a factor caused by man and not the person with the challenge. It proposes that in building classroom blocks, staircases and ramps should be used so that person with wheelchairs can also access the facilities. This study seeks to establish how the environment and all other social practices are put in place to support the TTSI in CoEs in Ghana. Open gutters need to be covered and undulating paths levelled, to aid mobility of the students with visual impairment. Speed ramps and signposts, indicating the presence of persons with hearing impairment could also be provided on campuses with the hearing impaired so that drivers will be cautious as they drive on the campuses. Education of the students without disabilities on the support systems available and how they can guide their colleagues with impairments when addressed would also be of much importance.

2. Materials and methods

The purpose of the study was to assess the impact of inclusive education experiences on teacher-trainees with sensory impairment in the Ghana Colleges of Educations of Ghana. The study was based on pragmatist philosophy. The study adopted convergent parallel mixed-methods approach. The population involved all 66 students with sensory (visual and hearing) impaired in the three (3) CoEs(PCE, Akropong Akwapim, WESCO, Kumasi and NJA, Wa) that practice inclusive education (IE) during the 2018/19 academic year. Purposive and census sampling techniques were used to select the three (3) colleges of education and sixty-six students for the study. Three institutions were selected using purposive sampling because they were the only CoEs in Ghana that accepted people with sensory impairment. Two of the colleges only accepted students with visual impairments, while the third accepted students with both visual and hearing impairments. As shown in [Table 1](#).

Table 1. Population and Sample for the Study

College	Level	Visually Impaired			Hearing Impaired			GrandTotal
		Male	Female	Total	Male	Female	Total	
PCE	100	2	2	4	10	5	15	40
	200	-	1	1	7	5	12	
	300	3	-	3	4	1	5	
WESCO	100	7	2	9	-	-	-	15
	200	2	2	4	-	-	-	
	300	1	1	2	-	-	-	
NJA	100	2	2	4	-	-	-	11
	200	2	-	2	-	-	-	
	300	3	2	5	-	-	-	
TOTAL		22	12	34	21	11	32	66

Source: Field Data (Mantey, 2019)

Purposive sampling is based on the premise that a researcher wants to learn and explore new items, therefore they select a sample from which they can learn the most [58]. A purposive sample is made up of people who have special qualifications or are considered representative based on prior evidence [59]. Purposive sampling, is used when the sample is “hand-picked” for the study. Due to the size of the population to be studied, a census was adopted. A census is a count of a population's whole population [59]. A census is a well-organized method for collecting, documenting, and analysing data about the population's members.

The main instruments for data collection were questionnaire and focus group discussion. In order to ensure reliability of text result from the pre-testing of the questionnaire of 9 items recorded a Cronbach's alpha of .72. Qualitative research can be assessed based on the fulfilment of several requirements. Credibility, transferability, dependability, and confirmability are among the criteria she mentions. The study's credibility is measured by whether or not these conditions are met. Before leaving their schools, Researcher introduced excerpts, debate, and conclusion to a few participants for their input. Transferability is a qualitative analysis criterion that is similar to external validity. This criterion pertains to the generalisability of results [61]. In comparison to quantitative research, qualitative research focuses on detailed descriptions of a few cases and/or contexts rather than broad generalisations [62]. Findings reflected the reality of IE in Ghanaian educational institutions. The results, on the other hand, could provide insight into what the situation was like at the time of the analysis. The ability to pass results from the three colleges to others was critical in this case. The degree to which a study is accurate is referred to as reliability. The quantitative data items were coded for input into the Statistical Product and Service Solutions (SPSS) version 23 software and analysed using means and standard deviations. The quantitative excerpts were inputted into tables for careful consideration and interpretation. It was also used for vertical analysis on participants' responses to the focus group discussion with a comparative horizontal analysis to look for common patterns and differences across respondents. The qualitative extracts collected into themes that were coded, analysed and interpreted.

3. Results

This section present results on the Research Question: *What are the inclusive education (IE) experiences of TTSI in the CoEs in Ghana?* The study investigated the inclusive experiences students with visual and hearing impairment were experiencing in the CoEs

in Ghana. A grand mean of 2.64 was established for the set of responses. For this study, a lower mean from the grand mean implied that most of the respondents agreed to specific statements while a higher mean from the grand mean implied that most of the respondents disagreed with the specific statement(s). The results on IE experiences of TTSI in Ghanaian CoEs can be found in [Table 2](#).

Table 2. Inclusive education experiences of TTSI in CoEs

Statement	VI		HI	
	Mean	SD	Mean	SD
All students are competent to communicate and learn in Inclusive Classes	1.44	.504	2.31	1.091
Students attend the school of choice if not of disability	2.12	1.250	3.13	1.362
Students receive accessible prints as peers without disabilities	4.06	1.071	2.38	1.238
Emotional support systems for students are good	2.44	1.021	2.44	1.190
Sensory, physical support and health care needs for students are effective	3.38	1.101	2.56	1.105
Students participate in class activities as all others	1.74	.828	2.66	1.285
There are assistive technology supports for students with disabilities.	3.56	1.375	2.50	1.414
Instructional support using diverse resources reflects the learning styles.	3.35	1.228	2.41	.946
Peer support is available and reciprocal	1.91	.933	2.00	.880

Source: Field survey (2019) N = 66 Grand mean = 2.64

SD= Standard deviation VI=Visually Impaired, HI=Hearing Impaired

[Table 2](#) shows that TTSI generally agreed to items 1, 4 and 9. In Item one, the VI and HI agree that “all students are competent to communicate and learn in inclusive classes”, VI (M=1.44, SD=.504) and HI (M=2.31, SD=1.091). Again, “emotional support systems for TTSI is good” had VI (M=2.44, SD=1.021) and HI (M=2.44, SD= 1.190). It can also be noted that “peer support is available and reciprocal for TTSI”, had VI (M=1.91, SD=.933) and HI (M= 2.00, SD= .880) was also agreed upon. For the rest of the items in [Table 2](#), the TTSI had varied responses. The respondents with VI disagreed with items 3, 5, 7 and 8 while the respondents with HI agreed to the items. For example, the respondents with VI disagreed (M=4.06, SD=1.071) with the statement that “Students receive accessible prints as peers without disabilities”. They also disagreed (M=3.56, SD=1.228) with the statement: “There are assistive technology supports for students with disabilities”. On the other hand, the respondents with HI disagreed with items 2 and 6 while the respondents with VI agreed to the statements. The respondents with HI disagreed (M=3.13, SD=1.362) that “Students attend the school of choice if not of disability”. They again disagreed (M=2.66, SD=1.285) with item 6 that “students participate in class activities as all others”.

The research question attempted to find out the IE experiences TTSI were experiencing in the Colleges. Out of the focus group discussions from the three Colleges

on how prepared the CoEs were practising IE, majority of the participants said the Colleges are not ready. The views of the respondents were organised into three sub-themes: general preparedness, infrastructure and human resource.

3.1. General preparation

As part of the discussions, TTSI looked at the general preparedness of their Colleges as inclusive environments. It came out during the discussions that the Colleges seem not to be prepared for including TTSI. For example, some indicated that:

“They are not prepared. I must be honest. We the visually impaired sleep in the same resource centre which is not good. We are supposed to have moved from the centre to dormitory and also help us in terms of material wise but they are all not there” (Group 7).

Another member in the group added: *“Though we are included they not prepared. This is because we have to manage to do everything since no special provisions are made for us apart from the resource room”.*

These ideas were shared in almost all the groups. In **Group 1** it was indicted by a member that: *“I cannot see any proper preparation. You can send reports on some of our needs forward but the response will not come as you are expecting”*

Student teachers in the focus group discussion felt there were more to make their Colleges inclusive oriented where all their needs were to be met as such their views that the Colleges were not prepared for inclusive education.

3.2. Infrastructure

The student teachers recognised the need for IE and knew it will help them in so many ways; however, there were issues with infrastructural development in the Colleges they find themselves now. There is no doubt about infrastructure development been an important indicator of how prepared the Colleges are in welcoming inclusive education. But when student teachers in the focus group discussion were questioned with regards to infrastructural expansion and making it disability friendly, one had this to say in a group:

“...as for the infrastructure, there are many problems with that because even in the dormitories we are sleeping in the rooms at the down floors and when we go for assembly, we sit at the down and not at the top because there is no easy access for us” (Group 5).

A student talked about the College not having Information Communication Technology (ICT) laboratory which is friendly to the disabled. For example **Group 9** came out that: *“We do not have any ICT facilities for the visually impaired. Which means if you do not have the knowledge of ICT from Junior High School and Senior High School, forget it”.*

This was generally accepted by the group members indicating that not much has been put in place for the sensory impaired to indicate the preparedness of the Colleges

3.3. Human resource

Human resource is an important element in every facet of life and so are the human resource capacities of Colleges under consideration of practising inclusive education. Student teachers had a lot to say with regards to resource persons who assist TTSI in their academic work and social life on campus.

“...for our resource personnel, what I will say is that they do not pay much attention for us. They are always busy teaching in the classrooms and other assignments, so

even our embossment of books is becoming a problem. And so, this semester we are having problems with getting materials to read” (Group 5)

Even though some student teachers had issues with the resource personnel as indicated in Group 5, nevertheless, some student teachers believe that the resource persons available were committed to their wellbeing on campus. For example, it came from Group 4 that:

“With the personnel they have some sense of concern for us the persons with disabilities, and we are having cordial relationship with them. Any time you go to them for help they render to us. The teachers are doing well and we appreciate what they are doing but there is more room for improvement” (Group 4).

A special reference was made to a Principal of one of the Colleges for displaying a lot of enthusiasm in seeing to the welfare of TTSI. Excerpts from two groups from that college on this were:

“The principal also cares for us. Sometimes, we are entreated to some entertainment programme that is specifically designed for us. Just recently, there was an important celebration on campus and we were the only people who were invited to attend and for me, this made me feel very important in this College. Sometimes too, the Principal gives us some monies to motivate us to learn, but with the teachers, it is only some of us but not all” (Group 3)

Another group confirmed what Group 3 said with regards to the Principal of one of the CoEs that. ‘The principal is lenient because some of our colleagues could not pay school fees on time but they were allowed to register’ (Group 8)

It can be deduced from the above that from the infrastructure, personnel and material wise pertaining to Colleges preparedness to practising IE in Ghana, TTSI believed that there is still a lot more to be done by the Colleges for effective inclusive education.

4. Discussions on Inclusive education experience of teacher-trainees with sensory impairment in CoEs

This section also present discussion on the research question- *What are the inclusive education (IE) experiences of TTSI in the CoEs in Ghana?* It elicited the inclusive experiences of TTSI in the CoEs. Two striking results were recorded from the participant's responses on items on inclusive experiences. It consists of what they all agreed on and those that they had contradicting views. From the quantitative data in this section, the TTSI generally agreed on three items: that all students are competent to communicate and learn in inclusive classes, that there are good emotional support systems and peer support is available and reciprocal. This had some contradictions in the qualitative extracts as some students had challenges with peer support. Some students in confirmation of the support received reported that:

“All the teachers have made up their mind to support me as a person with disability and they do not treat me as any other person. In other words, I am treated equally just as my colleagues who are not disabled” (Group 1).

“They support us. We also get equal punishment if we go wrong. That makes us feel that we belong” (Group 10).

On the other hand, there was this challenge also stated:

“...our relationship between the visually impaired and those that are sighted is not good. Some prevent us from entering the resource centres. Some sighted students do not see why we visually impaired should be schooling. If you are not academically strong you cannot cope” (Group 10).

It could mean that depending on individual differences, some people may support persons with disabilities while some shy away or look down on them. People with disabilities in Ghana continue to face prejudice and social isolation [63], even though the country has the inclusive education policy providing anti-discrimination laws to protect their rights [17, 63].

With the choice of institutions, the students with HI disagreed on attending the school of choice if not for their disability. From the study, out of the 46 Colleges of Education in Ghana, only one College (PCE) admitted students with HI. Thus, students have no choice but to attend PCE if they want to attend a College of Education. They again disagreed with the statement that “Students participate in class activities as all others”. This experience can be challenging since the HI will need an interpreter to be able to participate in class activities like all others. A similar study revealed that appropriate changes within the schools to address the needs of students with HI had not been made [46]. As such the onus, therefore, lies on the College authorities to see to the provision of the needed support systems in the various Colleges for the students with HI to have access to more Colleges to feel included.

The respondents also reported the problem of accessibility to health care and the physical environment of the College to meet mobility problems and access to assistive technology. The design of products and environments to be used by all citizens to the fullest degree possible without the need for adaptation or specialist design is known as universal design [64]. Universal design aims to make life easier for everyone by making goods, connectivity, and the built environment more accessible to everyone at a low or no cost. It is primarily driven by disability, and it employs building codes, rules, and guidelines to create designs and features that are accessible to people with disabilities. However, there have been several reports of unfriendly building architecture that impairs accessibility and mobility needs of the learners who are disabled in Ghana [65]. The CoEs, as shown in the present study are not an exception. Students in substantiation of the physical challenges in the CoEs campuses reported that:

“We have some storey buildings but they do not allow visually impaired to go to the top. We do not have any ICT facilities for the VI. Which means if you do not have the knowledge of ICT from JHS and SHS forget it?”

The International Institute for Sustainable Development ([IISD], reports of the UN Secretary General’s recommendation that accessibility should be a vital consideration in the post-2015 development agenda and considered as a critical investment for sustainable development advancing accessibility and the progressive removal of obstacles to the physical environment, transportation and information and communications, incorporating the principle of universal design [66].

In Ghana, the inclusive education policy’s principles and recommendations support the spirit of a barrier-free learning atmosphere for all students in both public and private schools [17]. To encourage easy contact with the community, institutions are required to have walkways, paths, roads, stairs, houses, doors and doorways, stairways, handrails, water closets and toilet compartments, as well as grab bars, according to item 4.0 Standard 1 of the guidelines. According to the findings of this report, this call appears to have received little attention in Ghana’s CoEs climate.

The importance of open, safe, and well-designed built environments for optimal health and education is becoming increasingly recognized [67, 68]. This is because the

social and physical environments in which people live are likely to affect their independence, and people will encounter a variety of circumstances as they move in and out of different environments during their lives [69]. Some built environment features that create obstacles for outdoor mobility, such as discontinuous and unstable sidewalks, heavy human traffic, and inaccessible public transportation, may have spill-over effects on a person's ability to work independently in a given neighbourhood (e.g. access supermarkets, lecture halls, dormitories and hospitals). Such accessibility problems as expressed by respondents in the present study appear to impede their satisfaction on campus. For example, members in Group 2 had these to say:

“since we have the blind and the hearing impaired over here, the place was not well structured for the blind and so moving from the resource centre to the place where they will go and sleep, there is no smooth road and so I suggest that the path that we pass to the resource centre and where we have been sleeping should be made short and smooth, so that it will make their movement easy”.

Others added that:

“There is the need for a pavement to make it stable is appropriate because erosion keeps on veering them off and we have challenges with cars. With the blind, when a car is coming, they hear but find it challenging to know where it is coming from until it gets close. Also, with the hearing impaired too, there is the need for something to give them an indication that there is a car coming and so something should be done for them to know that there is a car coming from their back. So, if all those places could be made pavements in such a way that when we are going, we will just follow that path it will save us” (Group 3).

The limitations on mobility and access imposed by a poorly built environment, on the other hand, are more visible and even more frustrating than systemic discrimination in the lives of people with disabilities [70]. The mobility challenges expressed by respondents' herein may have a significant impact on their ability to survive in the Colleges. Therefore, Colleges have to see to the implementation of the IE policy standards and guidelines whereby the needed facilities and infrastructure would be put in place to promote mobility and access.

5. Conclusions and Recommendations

The study revealed that teacher-trainees had varied experiences on campus, while they felt welcomed into the inclusive institution; they also felt the Colleges were not well prepared to meet their needs. The physical environment was not conducive for the VI on campus. It is recommended that, College authorities should work with the MoE and agencies concerned with disability issues in the society to provide comfortable environment on College campuses for TTSI. It is also recommended that, providing a comfortable environment should include facilities and resources needed for the TTSI to learn effectively. It also involves physical arrangement of the campus environment. The TTSI, regardless of their disabilities, should be provided with an environment where their movement, their studies, their interactions with their peers and tutors are made easier to help them graduate successfully.

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