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THE CLASSROOM PHYSICAL ENVIRONMENT AS A "THIRD TEACHER" FOR AN EARLY CHILDHOOD EDUCATION PROVISION IN THE GA-WEST MUNICIPALITY OF GHANA

Samuel Oppong Frimpong
University of Education, Winneba, Ghana
sofrimpong@uew.edu.gh
reprods@yahoo.co.uk

Abstract

In spite of what literature has said about the relevance of the classroom environment and the fact that it can serve as the "Third teacher" in ECE provision, available data shows a lack of infrastructure in most Early Childhood Education (ECE) centres in sub-Saharan Africa, including Ghana. The purpose of this study therefore, was to ascertain a first-hand information about the state of the classroom environment of the ECE centres in the Ga-West Municipality of Ghana and how it was serving as a third teacher for quality ECE provision. Using the convergent design (previously referred to as concurrent triangulation) mixed methods approach, data in the form of questionnaire, interview and observation were collected from 142 participants comprising four ECE circuit coordinators, 130 ECE teachers and four headteachers drawn from 20 schools within the Ga-West Municipality in Greater Accra Region of Ghana. The findings showed some general infrastructural problems in the form of inappropriate furniture, unresourced learning centres and overcrowding classroom space. This possibly limited the ability of some of the teachers to translate their training into classroom practice. It also hindered the role the infrastructure (the classroom environment) could play as a third teacher and how

the children could benefit from their classroom environment to aid their learning. Thus, it is recommended that provision should be made to improve on the infrastructure to make it more developmentally appropriate. Additionally, the ECE classroom environment should be carefully arranged to create space to allow for children's free movement. Tables and chairs used by learners should also be sized to their height and in an appropriate shape (e.g. semi-circle) for their activities and the learning centres should be well resourced and used.

Keywords

Infrastructure, Classroom Environment, Developmentally Appropriate, Third Teacher

1. Background to the Study

Early Childhood Education (ECE) has become a major issue, a centrepiece of debate at all levels of government, and a topic of concern among experts and the public alike, as contributing to and preparing children for their education and future life (UNESCO, 2006). The early childhood period is crucial, having an endearing future on the individual's life. Research suggests that where an individual is disadvantaged, due to the environment in which the person is born, positive experiences from ECE can compensate for that individual's disadvantage (Young, 2007; Sylva et al. 2011; Fischer, 2012). Rolnick (2004) noted that Quality Early Childhood Education (QECE) can play a significant role in children's ability to develop a stronger academic adaptability. These skills are important when children enroll in the primary school level and in later life. Discoveries in brain science and child psychology over the past few decades also confirm the important role QECE plays in children's development and their ability to succeed in school and in later life (Shonkoff & Phillips, 2000; Young, 2007; Fischer, 2012).

Paramount to the quality of ECE is the environment in which the ECE is provided because the development of the individual learner in his/her early years is highly dependent on the social and environmental context in which the individual finds him or herself (Ruey, 2010, citing Dewey, 1938). Meyer (2009), therefore, contends that, if the learning environment is not designed to meet learners' ages and developmental and individual learning styles, no matter what efforts the learners put in and how active they may be during learning, the learning objectives may not be achieved. According to DeVries and Kohlberg (1987, p44), "in the final analysis, it is the quality of the environment the teacher creates that either promotes or retards development". This implies that progress and development of an individual child could be hampered by the

environment of an early years' centre. According to Harms, Clifford & Cryer (1998), quality early year's physical environment includes an indoor space, furniture for routine care, play and learning, and rooms arranged for play, space for gross motor play and gross motor equipment. In this context, the environment is categorised into the physical and interactive environments and this research concentrates on the physical environment with specific emphasis on the classroom infrastructure.

Vygotsky (1986) has stated that an interesting physical environment and classroom setting gives freedom to children to play and learn on their own and thereby progress in their learning. Roblyer (2006) advocates that early years classrooms should be divided into different learning centres (i.e. independent stations located in the classroom at which children can engage in hands-on activities, to improve on their cooperative learning, social interaction, real-life problem solving and autonomous learning. These are intended to provide opportunities for children to have meaningful learning and generate their own knowledge for holistic development (Muchtar, Yanuarsari, & Lestari, 2016).

It is imperative that the ECE classroom environment is exciting and welcoming to learners. For some learners, if not all, the ECE classroom environment is their first form of educational experience outside their home. On this basis, Rentzou (2014) advocates that the classroom environment should stimulate children's curiosity and provide them with a natural environment in which to learn and progress. French (2007) emphasises that the indoor learning environment should be spacious, well ventilated, attractive and it should encourage children to explore in order to improve their creativity. Montessori (1949) opined that the ECE environment classroom should provide learners with opportunity to work individually and in small groups. A safe, spacious, clean, warm, bright and welcoming classroom environment helps children to engage in co-operative, symbolic and dramatic play as well as to move, dance and increase their control over their bodies (Hohmann & Weikart, 1995). Thus, Gloeckler & Cassell (2012), point out that the arrangement of the classroom does not only ensure the proper learning of the children but also their health and safety.

The above discussion demonstrates the important role the ECE classroom environment plays in ensuring QECE provision. Cunningham (2012) and Slutsky & Pistorova (2010) claim that when attention is paid to the classroom environment, it can create a context in which children can interact and use the environment as a learning tool to improve ECE. Perhaps, this is

why the ECE classroom environment is referred to as the "third teacher" (Edwards et al., 1998, p.177). Although there is global concern about the quality of ECE provision, the concern for Ghana and other developing countries has been in terms of the facilities and resources for the ECE provision (UNESCO, 2006; Fourie, 2013; Atmore, 2013). For instance, UNESCO (2010) reported a shortage of QECE facilities in SSA, while Schweisfurth (2011) reported on a lack of infrastructure and TLMs, as some of the major sources of concern for QECE provision in Ghana.

2. Statement of the Problem

In spite of the increasing enrolment at our ECE centres in Ghana (MoE-EMIS, 2018), Ghana's ECE centres lack basic teaching and learning materials, in the form of textbooks, play items and a conducive classroom environment, among others. Ministry of Women and Children's Affairs (MWCA) (2004) admitted that most preschools, especially those in the rural areas, lacked good physical classroom infrastructure. Ankomah, Koomson, Bosu & Oduro (2005) pointed out that lack of these facilities is a major obstacle to achieving quality education in Ghana. According to UNESCO (2006), teaching and learning in Ghana "in worst case scenario is conducted under trees" or in old, dilapidated classrooms, especially in rural areas, or in poorly ventilated classrooms with bad lighting and little or no room for play. The UNESCO (2010) report continues to indicate inadequacy of classroom infrastructure, particularly in public schools.All these reports appear to suggest that the classroom environment of ECE centres in Ghana lack the basic facilities to enable them serve as a third teacher. Again, these studies have been done for some time and the conditions could have changed over the period.

3. Research Objective

Having considered the classroom environment which is likely to ensure QECE provision, and juxtaposing it with some research findings about the state of infrastructure in our Ghanaian ECE centres and the fact that these studies have been conducted for some time now, this study is purported to ascertain a first-hand information about the state of the classroom environment of the ECE centres and how it is serving as a third teacher for QECE provision. This study focused on nursery and kindergarten levels of ECE.

4. Research Questions

The underlisted research questions were formulated to guide the study.

1. What is the state of the physical environment of the ECE classrooms involved in the study?
2. How are the classrooms arranged for teaching and learning activities?
3. To what extent does the state of the classrooms promote children's independent learning?

5. Scope of the Study

In this context, infrastructure includes, the nature of the school and classroom building, the nature of the classroom (including size and space), the type of furniture used, ventilation, learning centres, decoration in the classrooms. The classroom environment has the capacity to enable learners to learn on their own without the physical presence of the teacher. This is where the classroom environment is referred to as the third teacher in this study. Where these facilities are provided and used, taking into consideration the age and ability levels of learners, they are considered as developmentally appropriate.

6. Methodology

This study employed the convergent design to mixed methods (previously referred to as concurrent triangulation approach [Creswell & Plano Clark, 2011]), which is the combination of methodologies in a study of the same phenomenon (Denzin & Lincoln 2008). By employing the convergent design to mixed methods, data was collected using qualitative and quantitative at the same time and integrated this information when interpreting and discussing the results for the purposes of convergence, divergence, or some combination. Attention was given to the qualitative data (Creswell & Plano Clark, 2011).

To maximise the validity and credibility of findings from this study, research tools in the form of questionnaires, semi-structured interviews and non-participant observation were employed to collect differing forms of data for the study (Gay & Airasian, 2000; Johnson & Onwuegbuzie, 2004). The techniques this study used to sample participants were simple random and purposive sampling. Purposive sampling was used to select participants (i.e. ECE circuit coordinators, headteachers, and teachers) for the study as they were assumed to have some information about the problem under investigation (Bryman, 2016). It was also used to select the site (Ga West Municipality), location (rural or urban) and type of school (public or private). Ga-West Municipality was used because it is located within Greater Accra Region which is the seat

of Ministry of Education. As such, one would expect that the Municipality's proximity to the national seat would enable it to receive more attention compared to those who might be far away.

Again, the Municipality has both semi-urban and rural settlements and this enabled the researcher to have opportunity to rural as well as urban settings and also to establish the state of the ECE classroom environment in these areas. There were 11 circuits in the Ga West Municipality. From a total of 451 schools, 78 were public and 373 were private (EMIS, 2013/2014 Academic year [MoE, EMIS, 2018]).

Using the purposive sampling technique, four circuits which had both rural and urban settings were selected from the Municipality. After this, simple random sampling was used to select five schools from each circuit. A total number of 142 participants were sampled for the study. Out of this, 130 participants (mainly teachers) responded to the questionnaire and 12 (made up of four ECE circuit coordinators, four headteachers and four ECE teachers) were interviewed. Thirty-two participants each were selected from the schools in the rural area (i.e. Rural Private [RPr] and Rural Public [RPu]) and 33 each were also selected from the schools in the urban area (i.e. Urban Private [UPr] and Unban Public [UPu]).

Questionnaire composed of open and closed-ended items were used to collect the quantitative data, while interviews and observations formed the qualitative data collected. Cohen, Manion & Morrison (2011) argue that there is no single, 'fit for all purpose' way of analysing and presenting data. According to them, the choice of data analysis procedure should be informed by a procedure's ability to serve the purpose of a study. In line with the method of inquiry, the qualitative and quantitative data sets were analysed and discussed together for convergence, divergence, confirmation, validation or a combination of some of them (Creswell and Plano Clark, 2011).

The quantitative data generated from the questionnaires were analysed using simple descriptive statistics like frequencies, which were expressed in percentages. The qualitative data was intended to seek meaning out of the text generated from the observation and the transcriptions of the recorded interviews. Thematic and content analysis were used to break up the text to unearth the themes salient in them and also to look for similarities and differences, respectively. This enabled themes to be generated through reading and re-reading of transcripts. In order to respect the confidentiality and anonymity of respondents, pseudonyms have been used for each respondent and the schools.

7. Data Analysis

The classroom environment has the ability to serve as a third teacher and improve on QECE. Participants' responses through questionnaires, interview and what were observed are analysed and discussed in this section. It is important to note that for easy identification of participants, their titles are attached to their names. "CS" is for ECE Circuit Coordinator, "HT" for headteacher, and "T" for teacher.

Research question 1: What is the state of the physical environment of the ECE classrooms involved in the study?

This research question sought responses from the participants regarding how the classrooms looked like. In describing the classrooms, participants had the following to say:

Mrs Aidoo (CS) corroborated these statements and complained:

> *Hmmmmm, as for classroom facility, somebody will just use the house, any structure and begins an early childhood centre. … the environment is poor, even the furniture used there is not for children, is not appropriate for the age group. …There are a number of such schools within the Municipality.*

Mrs Adade (HT)'s experience appeared to confirm the coordinators statements that:

> *…we have infrastructural problem (e.g. classroom), no windows and doors…it is the key problem we have here in the school.*

Ms Senya (T) also lamented:

> *"As you can see, my classroom doesn't even have a wall around it. I don't even know whether I should call this a classroom. There is no window and there is no door".*

Figures 1 and 2 present some classroom infrastructural situation in some of the schools. The learners in Figure 1 sat on benches and used some as tables. As it can be inferred, palm branches being supported by sticks were used as a roof. Figure 2 suggests the difficulty with which learners have to go through in moving through the classroom. As can be seen, a pupil is climbing a table in order to make his way in the classroom.

Figure 1: *The ECE environment o Ebenezer Modern Educational Complex*

Figure 2: *The classroom space and furniture in Heaven on Earth Academy*

The questionnaire responses which gathered data about the state of the ECE classrooms in the selected ECE centres are presented in Table 1. It is important to be reminded that in the table, the numbers that are put in brackets **( )** represent the frequencies and those that are not in brackets represent the percentages of participants' responses. Responses from the questionnaire seem to corroborate that of the interview and observation as well as other researches.

Table 1: *Questionnaire data on the state of the ECE classrooms environment N=130*

No.	Item	Responses							
		Not Available				Available			
		Location and Type				Location and Type			
		RPr	RPu	UPr	UPu	RPr	RPu	UPr	UPu
1	Age appropriate furniture	10.8 (14)	6.9 (9)	6.9 (9)	9.2 (12)	13.8 (18)	17.7 (23)	18.5 (24)	16.1 (21)
	Total	**33.8(44)**				**66.1(86)**			
2	Pictures and drawings which are attractive to learners.	13.8 (18)	12.3 (16)	9.2 (12)	8.5 (11)	10.8 (14)	12.3 (16)	16.1 (21)	16.9 (22)
	Total	**43.8(57)**				**56.1(73)**			
3	Learning centres	9.2 (12)	7.7 (10)	6.1 (8)	8.5 (11)	15.4 (20)	16.9 (22)	19.2 (25)	16.9 (22)
	Total	**31.5(41)**				**68.4(89)**			
4	Windows and doors	13.8 (18)	13.1 (17)	10.8 (14)	9.2 (12)	10.8 (14)	11.5 (15)	14.6 (19)	16.1 (21)

	Total	**46.9(61)**				**53.0(69)**			
5	Proper lighten	17.7 (23)	11.5 (15)	14.6 (19)	10.8 (14)	6.9 (9)	13.1 (17)	10.8 (14)	14.6 (19)
	Total	**54.6(71)**				**45.4 (59)**			
6	Ventilation	13.8 (18)	10.8 (14)	12.3 (16)	11.5 (15)	10.8 (14)	13.8 (18)	13.1 (17)	13.8 (18)
	Total	**48.4(63)**				**51.5 (67)**			
7	Decorations in the classroom	16.9 (22)	18.5 (24)	9.2 (12)	13.1 (17)	7.7 (10)	6.2 (8)	16.1 (21)	12.3 (16)
	Total	**57.7 (75)**				**42.3 (55)**			
8	Space for learners' free movement inside them classrooms.	16.1 (21)	13.1 (17)	15.4 (20)	16.9 (22)	8.5 (11)	11.5 (15)	10 (13)	8.5 (11)
		61.5 (80)				**38.5 (50)**			
9	A place for learners' naps/sleeping	18.5 (24)	13.8 (18)	15.4 (20)	17.7 (23)	6.2 (8)	10.8 (14)	10 (13)	7.6 (10)
	Total	**65.4 (85)**				**34.6 (45)**			

Source: Field data 2017

Key to Table 1:
Rural Private schools (RPr)
Rural Public schools (RPu)
Urban Private schools (UPr)
Unban Public schools (UPu).

With respect to the physical environment, the questionnaire responses in Table 1 show that schools' facilities vary in availability. For instance, age-appropriate furniture (66.1%) attractive pictures and drawings (56.1%), learning centres (68.4%), and ventilation (51.5%), were "available", compared to proper lighten (54.6%), decorations in the classroom 57.7%), a space for learners' free movement (61.5%) and a place for learners' naps (65.4%). In terms of the location and type of schools, age-appropriate furniture was a bit more "available" in public schools (17.7%; 16.1%) than private schools (13.8%; 18.5%), and schools in the urban area were better off (18.5%; 16.1%) than schools in the rural area (13,8%; 17.7%).

Responses from Table 1 show that the private schools in the urban area had more of the facilities listed in the table than any of the other locations or types of school. This is followed by the public schools in the urban area. The location and type of school which is most lacking in terms of facilities is the public schools in the rural area.

Concerning the classroom environment with respect to learning centres, Table 1 shows that learning centres were created in the classrooms. It was also observed that most learning

centres were in the form of supermarkets which the teachers made reference to once in a while (See Figure 3). For some schools, the learning centres may be a form of decoration for their classrooms. For instance, one school had learning centres for IT, a kitchen and other scenes but was not seen utilised. It was observed that some centres were covered and others were dusty, suggesting that they were not used (Figure 4).

Figure 3: *Nature of a Learning Centre (a supermarket) in Permanent Flame Academy*

Figure 4: *A Learning Centre (a kitchen) at Nsonyameye KG*

The situation was not all gloomy, though. Some of the schools (although few) had classrooms well-spaced out, furniture sized to the height of the children with single chairs and the classrooms were painted and decorated being, attractive to children.

Research question 2: How are the classrooms arranged for teaching and learning activities?

The classroom environment (e.g. the size of the furniture, the decorations) plays a key role in enabling children to learn without the physical presence of the teacher (Rentzou, 2014). This research question sought responses to how the teachers arranged the various classrooms for their teaching and learning activities. The activities observed included sitting and seating arrangements to create space in the classroom, how learning centres were created and learners

were encouraged to use them, how learners were grouped for activities, how they were allowed to engage in individual tasks, and how they were prepared to engage in activities.

Participants view with respect to how they were arranging the classrooms for their teaching and learning activities are presented below.

> *"My classroom is big, as I compare to the number of children in the classroom. Because of this, I am able to arrange it the way I like"* **(Mr Saani [T]).**

> *"Well, for my class, though it is not too big, because of the dual desk I use, it makes it difficult for me to change how the classroom is arranged when I am doing something else"* **(Mrs Ofori [T]).**

> *"As for this, I don't think I have to say it. Just look at it. Because we use long tables and the way the children are sitting, when somebody needs something, I find it difficult to go there. The children are many too"* **(Ms Bonaboto [T]).**

> *"I have been complaining that the classroom should be changed. ... you see, there is no space even for my learning corner"* **(Ms Senya [T]).**

It was observed, particularly in the private schools in the urban area, that some classrooms were small relative to the number of children in the classroom. In an instance where children are overcrowded in the classroom, it can cause the teacher in such a classroom to put in extra efforts to arrange the classroom in order to create space to ensure free movement and also to be able to attend to learners needs appropriately. Otherwise, the large pupil-teacher ratio could impede the teacher's ability to attend to the children's needs. The children themselves could also find it difficult to move freely in their classrooms to improve on their personal experience.

Figures 5: *The classroom space and furniture in Ga M/A KG*

Research question 3: To what extent does the state of the classrooms promote children's independent learning?

This research question sought responses from participants regarding how the states of the classroom promote children's learning without the physical presence of the teacher. Proper classroom infrastructure, in the form of spacious and the aesthetic nature of the classrooms and child-sized furniture, is a known contributor to QECE provision, and the interviewees' opinions reflected its value. Mrs Ofori (T), for example, said,

> *"… my classroom is not spacious. Meanwhile, the ECE classrooms should be spacious so that the children can move freely in the class".*

Commenting on the shape of furniture, Mr Addai (HT) said:

> *"… tables at the ECE classroom should be round the children will be able to do group work to together and learn to share from that stage. Despite of this, some of the classrooms don't have this round tables.*

Mrs Akuffo (HT) however expressed her concern when she said:

> *… some ECE classroom use dual desks and they are not very good for children … they do a lot of group work and sometimes they need to re-organise and rearrange the classrooms and the dual desks are not very good for such activities.*

Findings from this study, similarly, identified elements like the spaciousness of the classroom, its arrangement into learning centres that promote independent learning and its aesthetic design as significant for making the environment a third teacher and for QECE provision.

Commenting on the need for enough space in the classroom, Mr Saani (T) said:

> *If you have a big space in the classroom, you will be able to monitor the children when you give them work. You will also be able to attend to their needs as soon as they call you.*

On learning centres, Ms Lamptey's (C) view was typical of the respondents.

> *…there should be language corner, there should be mathematics corner, there should be shop corner.…even when you are not teaching, the children will be able to have their independent learning at those centres.*

Decorating a school with attractive colours could arguably encourage the punctuality of learners, as they will be enticed to the school and happier to be there. Ms Awuni's (C) view was that:

> *"children like colours and they feel more comfortable if the classroom is beautiful. This can even help them to come to school always.*

8. Discussion of Findings

Discussion based on the analysis is presented below.

Regarding space for learners' movement in the classroom, the findings show that the classrooms were not spacious enough for learners' free movement in their classrooms. The difficulty in terms of space appears to be similar for both location (rural and urban) and type (private and public) of school. ECE teachers are expected to meet their children's needs promptly and consequently require enough space in their classrooms to enable both them and the children to move freely (Cunningham, 2012; Slutsky & Pistorova, 2010). It is therefore, unfortunate that, according to the responses, the children find it difficult to move inside their classrooms. One can assume the challenge teachers in these classes and classes with similar description may have to go through if they decide to use group work or re-arrange the class for any other activity. This difficulty could restrict children's movement in the classroom and how much they can appropriate the classroom environment, particularly when the teacher is physically absent. These responses from the table, corroborate that of the interview and observation and sits quite well with the study done (Gloeckler & Cassell, 2012; Fourie, 2013; Atmore, 2013)

Another significant factor in QECE is rest, which makes a place designed and prepared for learners' naps a valuable provision. It is a valuable element of QECE provision because it provides opportunity for children's rest (Harms et al., 1998.) If such places are either "not available" in the schools, then children may not have the time or place to rest. This could lead to them being tired (especially towards the end of the school day), possibly make them absentminded due to fatigue and, in turn, affect how much they will be able to learn, particularly on their own to make the environment a third teacher (Edwards et al., 1998). The opposite could be true in an instance where a place for nap is provided for the children.

The description of the nature of the classroom environment, coupled with the figures presented, of the ECE schools raises questions about its ability to serve as a third teacher and ensure quality ECE provision. According to the respondents, many schools operate in poor environmental conditions, using classrooms that are not suitable for kindergarten education and without beautiful decorations to attract the attention of the children. Particularly worrying, therefore, is the statement that "*there are a number of such schools within the Municipality*".

Observation throughout the data collection revealed that there was a school at which preschool took place beneath a Mango tree (the school's proprietor did not allow me to take a photograph of that). Moreover, in some of the schools, due to the number of children in the classrooms, teachers could not re-arrange their classrooms to make space for other activities. In one case, a respondent noted how dangerous a class under tree could be:

> *I went to a school …the children were under a tree having the lesson. …then a snake fell from the tree* **(Ms Lamptey [CS]).**

Besides putting the health and safety of the learners and teachers in jeopardy, studying under trees may also mean that learners can be distracted by objects moving around where they are studying. Much as it could be accepted that the children could use the outdoor space (under trees) for some activities, the concern is when teaching under a tree or in dilapidated building is the only available option.

An equally important component of a classroom environment is the type of furniture the children use. Although the findings show that furniture for the children were available, the challenge however, had to do with the size and shape of the furniture. The study found that in some schools, the children used long tables and others used dual desks, some of which were not sized to the height of the children. To ensure QECE, the tables and chairs used by learners should be sized to their height and in an appropriate shape (e.g. semi-circle) for their activities (Harms et al., 1998). This can enable children to engage in group work through which they might learn from each other (Meyer, 2009; Cunningham, 2012).

Properly apportioning space in the ECE classroom for each of the children's activities cannot be overemphasised. The ECE classroom environment should be carefully arranged because achieving success in the classroom, for example, depends on the creation of space within it for activities (Oppong Frimpong, 2016). Kisitu (2008) argues that the amount of space in the classroom determines how it is organised, which has a ripple effect on the extent to which the children are able to move freely in the classroom, and the amount of learning they will be able to accomplish without the physical presence of the teacher. A large classroom space, including creating learning centres in the ECE classrooms, among other things, ensures proper ventilation and free movement by both learners and teachers and opportunity for learners to be grouped for activities and or learn on their own.

This notwithstanding, the analysis and discussion of research question 1 show a lack of learning centres in the classrooms. The observation shows that in arranging the classroom for activity, most of the teachers could only put up a table and put some items, mainly signifying a supermarket, on the table. The lack of these learning centres could be attributed to lack of space in the classrooms. It could also be that the teachers were not too familiar with how to create it or that the teachers have not fully appreciated the important role learning centres play in contributing to making the classroom environment a third teacher.

Regarding how the children were involved in the teaching and learning activities, and the opportunities teachers created for the learners to interact with their peers in a group, have contact with the teaching and learning materials and used the environment as a third teacher, the observations revealed that some of the teachers found it challenging to rearrange the classroom for other activities due to the size of the classroom relative to the number of children and the nature of the furniture used. As established already, some of the schools used dual desks and long tables in their ECE classrooms which were unsuitable for ECE instruction. For instance, while in Ga M/A KG (see Figure 5), the classroom had round tables for easy group activities, long tables and chairs were used in Heaven on Earth Academy (Figure 2). Consequently, it was observed that the same sitting arrangement was used for all activities. Arguably, group activities (assigning tasks to learners based on groups) should form an integral part of the teaching and learning process at the preschool level. Giving learners the opportunity to engage in group activities, be involved in a lesson and to practice on their own, helps them to achieve mastery over the information or skill being taught (Roblyer, 2006). In effect, this could help the individual to perform a similar task in future even without the teacher being physically present.

The findings as per, the extent to which the classrooms promote children's independent learning, the respondents appear to value different aspects of the classroom infrastructure. The group work facilitated by round and appropriately sized furniture. Some of the schools used dual desks and long tables in their ECE classrooms which were unsuitable for ECE instruction. This made it difficult for teachers to re-arrange the classroom for different purposes and activities. It did not also promote group work which helps children to learn from each other, learn to share and create opportunity for socialisation, which could develop through group activity (Rentzou, 2014; French (2007). Suffice to say that dual desks were used in some classrooms, the desks were not

also sized to the height of the learners and so some of the children sat with their legs hanging. Arguably, this would affect their concentration and their health.

Additionally, if different instructional activities required different classroom arrangements but teachers are not able to easily re-arrange their rooms due the nature of the furniture used, then it could be argued that lessons and activities would be less varied and could be boring. Furthermore, if furniture restricts learners from engaging in group activities, then arguably, it may also limit their opportunities to socialize, make friends and learn from each other, which is at variance with what could possibly make the environment a third teacher (Rentzou, 2014). It may be interesting to note that although the findings did indicate how important these items are for quality interaction and ECE provision, the items, however, did not seem to be available in some of the schools used for the study. Meanwhile, availability of these facilities enables children to use the environment as a third teacher, practise whatever they have learnt on their own and break away from the "formalised" teaching and learning of their teachers.

Learning centres/corners enable children to learn independently, perhaps without the presence of the teacher, and expose the learner to mimicking real life situations. It is therefore gratifying to note that learning centres were available in the schools selected for the study. However, majority of the learning centres were in the form of supermarket which teachers occasionally referred to and others were possibly used as a decoration. It appears that the children were limited in terms of variety of these centres and they also did not have the opportunity to learn or practice independently at the learning centres in the schools. My position therefore is that, not only should there be a variety of learning centres (e.g. set in places like the hospital, the kitchen and the post office), but teachers should also, and more importantly, train their children in how to use the learning centres for their independent learning. This could affect how they use their environment independently without the physical presence of the teacher thereby the facilities serving as a third teacher. A well-arranged classroom helps children to develop independent learning skills and more exploratory behaviour (Rentzou, 2014) and a colourful classroom and school can equally encourage learners to be active in the classroom and create opportunities for them to use their environment independently.

The environment in which ECE is provided is of paramount importance because it enables the learners to create meaning from their environment without the physical presence of a teachers (DeVries and Kohlberg, 1987). Other researchers (Rentzou, 2014; Gloeckler & Cassell,

2012; French, 2007; Roblyer, 2006; Edwards, Gandini, & Forman, 1998) observe that access to conducive classroom environment, in the form of spacious classrooms; child-sized furniture, proper ventilation and lighting make it possible for children to learn without the physical presence of a teacher and thereby contribute to QECE provision.

9. Summary

It can be gathered from participants' responses that the classroom environment, could impede the quality of ECE in the schools. Granted that these were the case, learners may find it difficult to engage in meaningful independent activities to enable the classroom environment to serve as a third teacher. This study's findings suggest that the arrangement and free space of a classroom determines the extent to which children would be able to move freely and interact. From the findings, the free movement in a classroom also enables teachers to attend to individual learner's needs quickly, whenever necessary, and facilitates communication with learners. Proper arrangement can guide children to activities within the classroom and enable the teacher to control the class. Moreover, an attractive classroom arguably, could ensure punctuality of learners because they will be keener to attend school and happier inside it.

10. Conclusion

The findings show that some facilities were available in the schools while others were lacking. Some of the classrooms lacked enough space to enable their re-arrangement for different activities. Although there were learning centres in the schools, they were not well-demarcated in some of the classrooms except in the form of supermarket and some of the classrooms were not beautifully designed due to lack of paintings and decorations. Quite clearly, the issues on classroom environment, as discussed, had the potency of affecting how the learners could use the environment as a third teacher and therefore, better their lot in quality ECE provision.

11. Recommendations

Based on the findings, it is recommended that ECE teachers should be specifically trained in ECE methodologies and approaches to be able to use group work and also endeavour to arrange their classrooms properly to create space to enhance free movement in the classroom. Where the need be, they should appropriately use the outdoor environment to reduce the

monotony of same arrangement for all instructions. They should also vary the composition of their learning centres and more importantly encourage independent learning among the learners. The government should also try to provide furniture for the ECE centres and the furniture provided should necessarily be round or hexagonal tables with single chairs that are sized to the height of the learners. The form of the tables should be semi-circle to ease re-arrangement of the furniture and the classroom for other activities whenever needed.

12. Limitations of the Study

Arguably, the successful completion of this piece of research does not suggest that there were no inhibitions in the course of conducting it. Of course, these limitations also do not imply that this study has failed and that the findings could not be relied upon. It rather provides a context through which the success of this study could be regarded. The limitations of this study were, therefore, in respect of the period used for the observation, the participants used for the study, and the inability to include more statistical data to corroborate that of the text.

Concerning the participants which were used for the study, more respondents could have been included, from other Municipalities, to possibly enable a wider perspective. It is possible that, if participants from other parts of the country had been selected and the period for the observation was extended, the results could have been different. On the data collection, although I used non-participant observation and did not participate in the ongoing activity, my presence in the classroom and my occasional movement from one part of the classroom to another could potentially cause obstruction to the lesson and or an ongoing activity. However, a good rapport was developed with the teachers and the other participants about the fact that this study was purely an academic exercise, so they should feel free to provide any information and go about their daily activities as they normally do.

13. Areas for Further Studies

This study was set out to investigate how the classroom physical environment was serving as a "third teacher" for the early childhood education provision in the Ga-West Municipality of Ghana. I think one of the things this study should have found out was how the ECE teachers were trained in using the ECE environment as a third teacher for the ECE provision. Owing to this therefore, it is recommended that further research should be conducted

to establish how the ECE teachers are trained in using the ECE environment as a third teacher for their ECE provision.

References

Ankomah, Y. A., Koomson, J A., Bosu, R. S. & Oduro, G. K. T. (2005). *A review on the concept of quality in education: Perspectives from Ghana*: EdQual Working Paper No.1 (Ghana, EdQual).

Atmore, E. (2013). Early childhood development in South Africa – progress since the end of apartheid. *International Journal of Early Years Education*, 21 (2–3), 152–162. https://doi.org/10.1080/09669760.2013.832941

Bryman, A., (2016). *Social research methods*. (5th ed.) UK: Oxford University Press.

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education*. (7th ed.). London: Routledge.

Creswell, J. W., & Piano Clark, V. L. (2011). *Designing mixed methods research*. (2nd ed.). Thousand Oaks: SAGE Publications Inc.

Cunningham, A. J. C., (2012). *Research in Comparative and International Education* **7** (3). [Retrieved from www.wwwords.uk/RCIE], [Date Accessed: August 25, 2012] https://doi.org/10.2304/rcie.2012.7.3.296

Devries, R., & Kohlberg, L. (1987). *Constructivist early education: Overview and comparison with other programs*. Washington, D.C.: NAEYC.

Denzin, N. K., & Lincoln, Y. S., (2008). *Collecting and interpreting qualitative materials*. Eds. (3rd ed.). UK: Sage publication.

Edwards, C., Gandini, L., & Forman, G. (1998). *The hundred languages of children: The Reggio Emilia approach to early childhood education*. London: Ablex, Publishing Corporation.

Fischer, K. W. (2012): Starting Well: Connecting Research with Practice in Preschool Learning, *Early Education and Development*, 23 (1), 131-137. https://doi.org/10.1080/10409289.2012.637877

Fourie, J. E. (2013). Early Childhood Education in South African Townships: Academics Accepting the Challenge to Empower Early Childhood Development Practitioners. *Journal of Social Science*, 36 (1), 59-68. https://doi.org/10.1080/09718923.2013.11893173

French, G. (2007). *Background paper on Children's Early Learning and Development* to inform *Aistear: The Early Childhood Curriculum Framework* commissioned and published by the National Council for Curriculum and Assessment (NCCA), Dublin: NCCA

Gay, L. R., & Airasian, P. (2000). *Educational research: Competencies for analysis and application.* (6th ed.). New Jersey: Prentice Hall Upper Saddle River.

Gloeckler, L., & Cassell, J. (2012). Teacher practices with toddlers during social problem-solving opportunities. *Early Childhood Education Journal.* 40, 251-257. https://doi.org/10.1007/s10643-011-0495-4

Harms, T., Clifford, M. & Cryer, D. (1998). *Early Childhood Environment Rating Scale, Revised Edition* (ECERS-R), Teachers College Press.

Hohmann, M., & Weikart, D. (1995). *Educating young children.* USA: The High/Scope Press.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A research paradigm whose time has come**.** *Educational Researcher*, *33* (7), 14–26. https://doi.org/10.3102/0013189X033007014

Kisitu, W. (2008). *Early childhood care and education in Uganda: The challenges and possibilities for achieving quality and accessible provision*. A thesis Submitted to the University of Edinburgh in fulfilment of the requirements for the degree of Doctor of Philosophy.

Meyer, D. L. (2009). "The Poverty of Constructivism". *Educational Philosophy and Theory* **41** (3): pp. 332–341. https://doi.org/10.1111/j.1469-5812.2008.00457.x

Ministry of Education (MoE)-Education Management and Information Systems (EMIS), (2018). *Report on basic statistics and planning parameters for Basic Education in Ghana*. Accra: MoE

Ministry of Women and Children's Affairs (2004). *Early Childhood Care and Development Policy, Ghana*: Republic of Ghana.

Montessori, M. (1949). *Absorbent mind*. London: Clio Press Ltd.

Muchtar, H. S., Yanuarsari, R., & Lestari, Z. W., (2016). Early Childhood's Teachers' Performance in Implementing Development Achievement Level Standard. PEOPLE: *International Journal of Social Sciences*, 2(1), 508-522. ttps://doi.org/10.20319/pijss.2016.s21.508522

Oppong Frimpong, S. (2016). *An investigation into the quality of interaction in early childhood education in Ghana: A constructivist perspective*. A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy, School of Education, College of Arts and Social Sciences, University of Aberdeen, UK.

Rentzou, K. (2014). The quality of the physical environment in private and public infant/toddler and preschool Greek day-care programmes. *Early Child Development and Care.* 184 (12), 1861-1883. https://doi.org/10.1080/03004430.2014.891991

Roblyer, M. D. (2006). *Integrating educational technology into teaching*. Upper Saddle River, NJ: Pearson Education, Inc.

Rolnick, A. (2004). Child development is economic development. Retrieved from www.developingchild.net/paper/rolnick.pdf. [Date Accessed 17/04/ 2009]

Ruey, S. (2010). A case study of constructivist instructional strategies for adult online learning, *British Journal of Educational Technology*, 41 (5), *706*–720. https://doi.org/10.1111/j.1467-8535.2009.00965.x

Schweisfurth, M. (2011). Learner-centred education in developing country contexts: From solution to problem? *International Journal of Educational Development*, 31, 425–432. https://doi.org/10.1016/j.ijedudev.2011.03.005

Shonkoff, J. P., & Phillips, D. A. (2000). *From neurons to neighbourhoods: The Science of early childhood development.* Washington: National Academy Press.

Slutsky, R., & Pistorova, S. (2010). Making High-Quality Early Childhood Settings Visible: Life at Little Garden Preschool. *Scholarlypartnershipsedu* 5 (2), 45-56.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2011). Pre-school quality and educational outcomes at age 11: Low quality has little benefit. *Journal of Early Childhood Research*, 9 (2), 109–124. https://doi.org/10.1177/1476718X10387900

UNESCO (2010)**.** *ECCE regional Report-Africa. Senegal:* Published by the Regional Bureau for Education in Africa (BREDA)

UNESCO (2006). Ghana Early Childhood Care and Education (ECCE) programmes. Country profile prepared for the Education for all global monitoring report 2007 strong foundations: Early childhood care and education. Ghana.

Vygotsky, L. S. (1986). *Thought and language.* Cambridge, MA: MIT Press (original work published in 1934).

Young, M. E. (2007). The ECD Agenda: Closing the Gap. In Young, M.E., and Richardson, L.M., (Eds.), *Early childhood development from measurement to action: A priority for growth and equity*. Washington, D.C: The World Bank https://doi.org/10.1596/978-0-8213-7086-5