

The place of ICT in parent-teacher engagement at the early childhood level: Experiences from Ghana

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ABSTRACT

The main focus of the study was to examine the extent to which ICT is used in the engagement of parents and teachers. The study is a quantitative research which employed the descriptive cross-sectional survey design. One hundred and seventy-two (172) participants comprising 158 parents and 14 teachers at an early childhood centre in the Central region of Ghana were involved in the study. A census selection was employed in selecting both parents and teachers. Data gathered were done with a researcher developed questionnaire of 12 items. This was analysed using frequencies, percentages, means and standard deviation. The results of the study points to the use of smartphones and cell phones as the most common gadgets in sharing information between parents and teachers, and most information shared being announcements and home work. There was evidence of positive attitude on the part of both parents and teachers in the use of ICT in sharing information, though both parents and teachers expressed concerns relative to its use in the areas of inadequate ICT tools, lack of education in ICT use, and lack of promptness in response to information by both parents and teachers. Recommendations by participants in the direction of ICT being viable in effective parent-teacher engagement are also provided in the study.

Keywords: Information and communication technology, early childhood education, parents, teachers, engagement.

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INTRODUCTION

Parental involvement in early childhood education has been described in different studies as being critical in improving children's academics, behavioural, and social outcomes. Studies by Larocque et al. (2011), as well as Bower and Griffin (2011), and Jimmerson et al. (1999) have suggested that there is a positive relationship between learners' academic performances and parental involvement in learner's school activities. That is, when parents get involved in the learning activities of their children through parent-teacher engagement, the results are positive. In recent times, it has emerged that one of the useful avenues for fostering parent-teacher engagement is through the use of Information and Communication Technology (ICT) (Clements and Sarama, 2003). Indeed, ICT is described as an effective tool in the advancement and promotion of early childhood education especially being a tool for engaging parents in the education of their children. Interestingly however, not

many studies have been done in identifying ways and means through which it can be promoted and increased in the direction of parent-teacher engagement particularly in a country like Ghana with demonstrable evidence of commitment to early childhood education, as well as ICT use being on the ascendancy (Markwei and Appiah, 2016).

Based on these observations, this study seeks to explore the extent to which ICT is used to foster parent-teacher engagement at an early childhood educational centre in Ghana. In so doing, the study attempts to find out the extent to which ICT is used in parent-teacher engagement, ICT tools used in that engagement, what information is shared through such engagement if any, parent-teacher perspectives on the effectiveness of such engagements if any, and challenges and recommendations emanating from parents and teachers in the direction of the place ICT in their engagement.

It is worthy of mention, that most studies in the area of ICT within the early childhood educational setup have centred on it being a tool for teaching and learning, as well as its place in the early childhood educational curriculum. Few of such studies have looked at its place as an instrument of parent-teacher engagement. As a result, it is anticipated that a study worth its sort, especially being able to elicit the perspectives of two important players in the early childhood educational enterprise; teachers and parents will provide stakeholders in the early childhood educational framework an opportunity of having a closer understanding of what teachers and parents think relative to the subject being investigated, and how parent-teacher collaboration; being a critical and foundational ingredient in effective early childhood education (Hill and Craft, 2003) can be enhanced and advanced using a tool (ICT) which according to Bolstad (2004) already has effect on us as a people and our environments.

In this direction, three specific objectives guide this study:

1. To determine the extent to which ICT is used to promote parent-teacher engagement at the early childhood level.
2. To determine if the background of teachers and parents do affect their attitudes towards using ICT in their collaboration, and
3. To explore what factors might hinder such engagement via ICT.

LITERATURE REVIEW

Literature on parental involvement in learners' education points to the direction of positive outcomes on the part of learners. Evidence to this assertion can be found in a study by Bracken and Fischel (2008), where the authors argue that parental involvement at home in the areas of reading books to children, as well as interactions between parents and children could be beneficial to learners especially at the pre-school level. This assertion is collaborated by Grolnick and Slowiaczek (1994), where in a cross-sectional longitudinal study, the authors arrived at the conclusion that parental involvement in learners' school activities have an associated advantage of an increase in learners' language skills and academic successes especially at the early childhood level. In the same vein, Hiatt-Michael (2001) points to the benefits of parental involvement in efficient early childhood educational development manifesting in fewer behavioural problems of affected children. Again, Kibaara and Ndirangu (2014) argues that parents who are unable to be present at their children's school activities are viewed as uncaring with negative ramifications for their children.

Despite the countless benefits associated with parental

involvement in learners' education as provided in the above studies, there are others such as that by Shumow and Miller (2001) who opine that when parents get involved with students' homework and communicate with their schools, the consequences are negative and as result according to the authors do affect the academic success of such students by decreasing their test scores. This position notwithstanding, the literature clearly points to a drift towards the call for parental involvement in learners' education due to the positive results associated with such exercises.

Regarding factors that contribute to parents' involvement in learners' school activities, Baeck (2010) is of the opinion that parents' educational background is an important variable. For Larocque et al. (2011), the lack of clarity in explaining what is expected of parents' relative to their involvement in their children's learning has been a militating factor in getting parents involved in their children's education. As a result, Hill and Taylor (2004) suggests a clear definition of what constitutes parental involvement in learners' education and what is expected of parents in that direction.

Information and Communication Technology (ICT) as defined by Siraj-Blatchford and Siraj-Blatchford (2003) is "anything which allows us to get information, to communicate with each other, or to have an effect on the environment using electronic or digital equipment" (p.4). Again, Information and Communication Technology according to Bolstad (2004) includes and transcends computers to equipment such as digital cameras, creativity and communication software and tools, the internet, telephones, fax machines, interactive stories, and computer games. Integrating ICT use into education as evidenced in studies such as those by Inan and Lowther (2010), Sangra and Gonzalez (2010) can be a slow and complex endeavour.

There are a number of studies that points to the benefits of ICT to education especially in the area of early childhood education. For example, Lee et al. (2002) argues that when ICT is introduced into teaching and learning the results are always positive. This position is shared by O'Rourke and Harrison (2004) who posits that the effect of ICT especially in the area of documenting learners' experiences at the early childhood level cannot be underestimated.

With respect to ICT being a tool for parental involvement in learners' education, the literature points to a limited number of studies in that regard. This notwithstanding, studies such as that by Bain (2000) brings to the fore evidence of ICT being used as a tool to get parents involved in their children's education at the early childhood level. In addition, Kirkwood (2000) also provides evidence in an empirical study of information being shared between schools and homes via mobile technologies. Furthermore, in a study by the British Educational Communications and Technology Agency (BECTA, 2009) in 2008, an attempt was made to

determine how technology could aid in parental involvement in children's education during the period of study. The conclusion arrived at in this study was that the subject was worthy of further research. In fact, the use of ICT in home to support school related work according to Lewin (2004), though limited is cherished by pupils.

In view of the potential of ICT being a useful tool in getting parents involved in their children's education, and most especially being a means of communication and engagement for parents and the school community, and coupled with the limited research done in this area makes this study worthy of pursuing and it is in this direction that this study hopes to contribute to the subject. Hence, guided by the conclusions emanating from the studies presented, as well as the guiding objectives of this study, and the problem that ignited it, the following research questions are addressed:

1. To what extent is Information and Communication Technology (ICT) used to foster parent-teacher engagement at the early childhood educational level?
2. To what extent do the background of teachers and parents affect their use of ICT in parent-teacher engagement at the early childhood level?
3. What challenges are encountered in the use of ICT in parent-teacher engagement at the early childhood educational level?

RESEARCH METHODOLOGY

The study employed the descriptive cross-sectional survey design. This allowed the collection of data from a wide range of people and analysed quantitatively. A survey instrument was thus developed to determine the extent to which parents and teachers' use ICT in fostering engagement between them at the early childhood educational level.

The setting of the study is a private Basic school centre located at Kasoa in the Central region of Ghana in the West African sub-region. The pre-school unit of the school with a pupil population of 176 for the 2017/2018 academic year served as the study centre. The school was selected because it was convenient in the sense that one of the researchers is a staff of the school. The pre-school unit of the school is made up of 6 classes of which two classes makes up Kindergarten 2, two classes as Kindergarten 1, a class as Nursery 2, and a class as Nursery 1. In all, there are 15 teachers for all six classes and 14 of them participated in the study.

The census selection was employed for the study since majority of the teachers and parents of children at the pre-school level were involved in the study. The instrument used was a researcher developed questionnaire. The questionnaire developed was a combination of existing and newly developed scales. Two sets of questionnaires were developed; one for parents and another for teachers. Both questionnaires had 12

questions each grouped. Questionnaires were administered to teachers and parents simultaneously. Questionnaires for parents were administered through class pupils who took questionnaires home to their parents to be filled and returned to their teachers for onward submission to one of the researchers who as indicated is a staff at the study centre. For the sake of anonymity, the name of the school is withheld. Prior to administering the questionnaire details of the objective and purpose of the study was discussed with management of the centre and approval granted. In all 176 questionnaires were administered to parents with 158 returned. All 14 questionnaires administered to teachers were returned.

Items in parents' questionnaire were not very different from that of teachers. For example, with that of parents, items centred on who was filling the questionnaire, parents educational background, ICT competencies, how often information was sent to parents' relative to their children, what kind of information was sent, and means through which such information was sent. Parents' rating of their participation in their children education via ICT use, and whether their responses/contributions were factored in the education of their children were also questions asked in the questionnaire. Finally, parents responded to whether they faced any challenges in the area of ICT use, and what recommendations they would provide. In all, parents' questionnaire consisted of ten close-ended questions, as well as two open-ended questions.

Questions in the teacher questionnaire looked at teachers' background comprising their educational background, gender, and ICT skills. Again, regarding ICT use, questions centred on how often information was sent to parents, the kind of information sent, the means through which information was sent, feedbacks from parents, and whether those feedbacks were accommodated in teaching and learning? In addition, the teacher questionnaire also elicited teachers' responses on challenges in the use of ICT, and recommendations in that direction. In all, just as parents' questionnaire, there were ten closed-ended questions, and two open-ended questions.

SPSS.19.0 was used for data analysis and three things were done in this direction. First, descriptive statistics shaped as frequencies and standard deviation were used to rate parents and teachers' responses on the use of ICT in information sharing. A Likert scale of 1-4 (Never = 1, Hardly = 2, Sometimes = 3, Always = 4) was used to determine the responses of participants relative to the question. Again, using frequencies and percentages, participants rated their ICT competencies and these were also presented in a Likert scale of 1-5 (1 = Below Average, 2 = Average, 3 = Above Average, 4 = Good, 5 = Excellent). Finally, participants also identified in their estimations challenges that characterised ICT use and professed recommendations in that regard. Responses were grouped as themes.

RESULTS AND FINDINGS

The mode of delivery was conducted between parents and teachers consisting 172 participants. Out of the 172 participants, 158 were parents and 14 teachers representing 91.86 and 8.14%, respectively. Again, on the question of who answered the questionnaire, 66% were mothers, 36.1%; fathers, and 19% being both parents. Regarding the educational background of participants, most teachers (64.3%) had diploma as certification, with majority of parents (38.6%) being first degree holders.

Results relative to the question of ICT use and the frequency with which information was sent to parents' in respect to their wards activities in schools is provided in Table 1.

Table 1 clearly points to most parents and teachers strongly agreeing to teachers sometimes using ICT to communicate with parents on matters relating to their wards. Whiles 46.2% of parents were of that view, 57.1% of teachers also shared that perspective. On the question of the means through which such information was sent, responses are provided in Table 2.

From Table 2, it was clearly indicated that the general means of communication between parents and teachers is the use of smartphones. This was recorded on the basis of smartphones being easy to access from anywhere and anytime. Also, some parents and teachers fairly agreed that they sometimes use phone calls to check on the progress of their children in school. In spite of this, the use of personal computers is not much being used as means of communication between parents and teachers owing to lack of access and less knowledge on how to use personal computers. Again, it is evident in Table 3 that parents responded through the same means that information was sent to them.

Parents and teachers strongly agreed that parents have been responding through the medium which teachers sent information to parents. From Table 3, 88.6% of parents group who participated in the survey admitted that teachers always used same means of communication to give them feedback about the progress of their ward. In fact, most of the information that was sent to parents as evidenced in Table 4 were mostly announcements. Responses by participants relative to the kind of information sent are presented in Table 4.

Parents and teachers generally agreed that most information sent to them related to announcements and any other information other than homework. This indicates that parents and teachers who participated in the exercise do not use ICT much to communicate about children's homework.

Based on the above responses by both parents and teachers who participated in this study, there is clear evidence to the effect that there is the use of ICT in information sharing, thus a tool for engagement between parents and teachers. Hence, the findings of this study

relative to research question one of the study points to ICT being used by participants of this study at the study centre.

Again, it is also evident from the responses of both parents and teachers that they have some appreciable knowledge and skills when it comes to ICT use. Indeed, most participants of each group rated themselves as being good in the use of ICT. Responses to that effect are provided in Table 5.

From Table 5, it can be confirmed that both parents and teachers possess good ICT skills. It was also recorded on the average that 32 out of 158 parents representing 20.3% coupled with 5 out of 14 teachers presenting 35.7% have basic ICT skills. Based on this information, it is the deduction of this study, that this could have contributed to the positive adherence on the part of parents and teachers in being engaged using ICT as revealed in the responses to research question one of this study. As a result, in response to research question two, participants by their responses do possess basic skills in ICT competencies.

Lastly, as part of the objectives guiding the study, participants responded to whether there were any challenges that characterised the use of ICT in their engagements and also provided recommendations in that respect. Interestingly, whiles majority of teachers' responses were Yes, that of parents were No. These results are provided in Table 6.

One hundred and five out of 158 parents, representing 66.5%, who participated in the study disagreed that there were challenges hindering ICT use in their wards education, with 64.3% of overall 14 teachers agreeing otherwise. Teachers' disagreement was based on the assertion that most parents barely have knowledge in the use of ICT in relation to their wards education. Teachers also emphasize that some parents do not have access to ICT devices and or tools. Highlights of some of the challenges that in participants' estimations hindered ICT use in parent-teacher engagements as well as their associated recommendations are provided below:

Highlights on factors hindering ICT use in parent-teacher engagement (parents perspectives)

1. Inadequate ICT tools:

- a) Inaccessibility of ICT applications.
- b) Lack of computers at home.
- c) Location factors (power fluctuations).
- d) ICT gadgets malfunctions.
- e) Not enough practices on how to use ICT tools.

2. Low level of knowledge in ICT:

- a) Parents not having enough ICT knowledge to support ward.

Table 1. Frequency of sending information using ICT.

Item		Never		Hardly		Sometimes		Always	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
Frequency on how teachers send information to parents' relative to their ward's in school using ICT	Parent	37	23.4	9	5.7	73	46.2	39	24.7
	Teacher	0	0.0	0	0.0	8	57.1	6	42.9

Table 2. Means of sending information.

Medium		Frequency	%
No response	Parents	6	3.8
	Teachers	0	0
Smartphones	Parent	87	55.1
	Teachers	9	64.3
Internet [PC]	Parents	12	7.6
	Teachers	1	7.1
Phone call	Parents	35	22.2
	Teachers	4	28.6
Other	Parents	18	11.4
	Teachers	0	00

Table 3. Means of responses to information.

Item		Yes		No		No response	
		Freq.	%	Freq.	%	Freq.	%
Parents'/Teachers' responded through the means teachers/parents sent the information	Parent	140	88.6	8	5.1	10	6.3
	Teacher	14	100	0	0.0	0	0.0

Table 4. Kinds of information.

Kind of information mostly sent	Frequency	Percent	Cumulative percent
No response	6	3.8	3.8
Homework	33	20.9	24.7
Parents Announcements	53	33.5	58.2
Any information	66	41.8	100
Total	158	100	
Homework	1	7.1	7.1
Teachers Announcements	6	42.9	50
Any information	7	50	100
Total	14	100	

b) ICT not yet introduced to their wards.

3. Too early to introduce ICT to their wards.

4. Parents not getting enough response from teachers.

6. Smartphone network glitches:

a) Messages and feedbacks not delivered on time.

7. Financial cost involved:

a) Data bundles.

Table 5. ICT skills rating.

Item		Below average		Average		Above average		Good		Excellent		No Res	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
ICT skills rating of respondents	Parent	11	7.0	32	20.3	19	12.0	64	40.5	31	19.6	1	0.6
	Teacher	0	0.0	5	35.7	2	14.3	6	42.9	1	7.1	0	

Table 6. Challenges.

Item		Yes		No		No response	
		Freq.	%	Freq.	%	Freq.	%
Parents/Teachers agreed about some challenges associated with ICT use in the involvement of parents' in their ward's education	Parent	43	27.2	105	66.5	10	6.3
	Teacher	9	64.3	2	14.3	3	21.4

b) Power cost.

8. Children are too young to be introduced to ICT.
9. Poor guidance and supervision on children in ICT use:

a) Wards accessing uncensored materials.
b) No directions on the appropriate software materials or platforms for children.

Recommendations (parents)

1. Availability of ICT tools or materials to parents and their wards:

a) Provision of ICT centres in school and ICT tools at home.
b) Giving wards access to educational, informational and practical ICT tools.

2. Introducing ICT to wards at early stages/ages.
3. Education and training of teachers, parents and wards on how to use ICT:

a) Good guidance and supervision of ICT use.
b) Parents and teachers should have time for wards.
c) Creating awareness on ICT use for parents and their wards.

4. Information should be sent on time:

a) Timely alerts between parents and teachers.
b) Prompt feedback.

5. Children should constantly explore the ICT world (with their parents' assistance) in addition to their text book and other studying materials:

a) Print materials should also be used as alternative.

6. Easy access to ICT medium of communication:

a) Enhancement of parent-teacher communication.
b) Shared platforms to provide smooth flow of information.

Highlights of factors hindering ICT use in teacher-parent engagement (teachers perspectives)

1. Some parents do not have access to smartphones and internet devices.
2. Most parents have less knowledge about ICT.
3. Inadequate ICT tools for child use.
4. Network glitches and untimely reception of information:

a) Delays in sending and receiving information owing to network hitches or faulty communication devices.
b) Less knowledge on parents' ICT knowledge hinders prompt feedback.

5. Some parents do not have time to read information sent from teachers.

Recommendations (teachers)

1. Availability and accessibility of ICT tools /

devices to parents:

- a) To enhance prompt feedback.
2. Awareness creation of ICT use to parents.
3. Introducing children to ICT at early stages.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The overriding objective that guided this study was to determine the extent to which parents and teachers are engaged relative to the education of early childhood pupils at an early childhood educational centre in the Central region of Ghana through the use of Information and Communication Technology (ICT). By this, the study specifically sought to determine if there is any engagement on the part of parents and teachers using ICT at the early childhood educational centre that served as the study centre, and also to determine if there are any challenges associated with such exercises. Clearly, the findings of this study point to ICT being used as a tool for sharing information between parents and teachers. And also, the most common means of such activity is the use of smartphones. Indeed, the most information shared are announcements. These findings point to evidence of the place of ICT in parent-teacher engagement as sought to be determined by this study.

Undoubtedly, the significance of parental involvement in early childhood education cannot be underestimated. However, there is evidence pointing to the limited involvement of parents in their ward's education which could be attributed to a number of factors such as social engagements (Bower and Griffin, 2011). With the results provided in this study, there is evidence of the potential of ICT especially the use of smartphones and cell phones as possible tools of getting parents engaged in their children's education. The findings of this study clearly are in sync with that of Hoffman et al. (2015), who argued that today's question should not be situated as whether ICT has a place at the early childhood level, instead how it can be used as a useful tool in effective early childhood education. And clearly, this study provides evidence of the possibility of ICT being an effective and useful means of fostering an important requirement at the early childhood educational level; parent-teacher engagement. This proposal as some of the literature affirms can be realized when there is demonstrable evidence of commitment and education on the part of the different players involved in the early childhood educational enterprise (Turgut et al., 2016), and that exactly is the recommendation of this study.

This study though limited as it might be, provides evidence of the potential of using ICT to share information between parents and teachers' relative to children's school activities. In fact, the consensus on the

part of both teachers and parents who participated in this study is that prompt responses from both sides of the isle relative to information dissemination must be encouraged. While parents see lack of prompt responses by teachers as a hindrance, same is also shared by teachers. Hence, if Information and Communication Technology is to be presented as one of the viable channels of parent-teacher engagement, then it is the recommendation of this study that teachers and most especially managers of early childhood centres must make it a habit of responding as quickly as possible to requests from parents in the area of their children's education. Again, training and periodic ICT skill development has to be made part of teacher professionalism at the early childhood level. Indeed, the role and place of ICT on our environment cannot be sidestepped, and how it can be made useful to early childhood education and education in general must be of interest to all stakeholders in the early childhood educational enterprise.

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