

## Teacher Educators' Self-Efficacy Beliefs and Actual Use of ICTS in Teaching in the Kumasi Metropolis

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### ABSTRACT

The study investigated how the Self-Efficacy Beliefs (SEB) of teacher educators in Colleges of Education in Ashanti Region of Ghana influenced their actual use of ICTs in teaching prospective teachers. Employing a mixed methods descriptive survey design, the views of 115 teacher educators were randomly sampled on a closed ended Likert-type scale questionnaire. A convenience sample of thirteen (13) of the teacher educators were subsequently observed for their actual use of ICTs in their teaching. The data were then subjected to frequency counts, percentage, and mean and correlational statistics analyses. The results indicated that the teacher educators were not certain on their ability to use ICTs in their teaching, besides not actually using such tools in their teaching. Furthermore, it can be inferred from the analyses that the lack of belief in their ability to use ICTs to teach translated into the teacher educators not actually using these tools in their teaching. It is recommended that the Colleges of Education collaborate with the government and T-TEL to empower the teacher educators through pedagogical training to enhance their ICTs self-efficacy beliefs and actual use

**Keywords:** College of Education, Teacher Educators, ICTs Self-Efficacy Beliefs, Teaching Experience, Actual use of ICTs.

### INTRODUCTION

Globalisation and innovations in technology have led to an increased use of ICTs in all sectors of human endeavour with education being no exception. The use of ICTS in education has become widespread and are continually growing worldwide. It is generally believed that ICTs can empower teachers and learners, making significant contributions to learning and achievement (Meenashki, 2013).

In Ghana, stakeholders and policy makers in education have realised the significant gains that ICTs provide in the field of education and are taking appropriate steps to ensure that the nation as a whole reaps the full benefits of this growing force. It is in this regard that the Government of Ghana commissioned the Ghana ICT for Accelerated Development Policy (ICT4AD) in 2003 under the Anamuah-Mensah Educational Reforms in 2007. This policy sought to create the necessary enabling environment to facilitate the development of a viable knowledge-based ICT Industry to facilitate the production, manufacturing, development and distribution of ICT products and services (ICT4AD, 2003). Furthermore, various teacher education institutions in Ghana are increasingly paying attention to the use of ICTs in teaching and learning. The government ICT connectivity project launched in 2010 covered the then 38 Colleges of Education (COE) by providing them with computing infrastructure such as computers, printers, scanners, projectors and internet connectivity (Ghana News Agency, 2010). Notwithstanding the numerous benefits that could be derived from ICT integration in schools, several factors could be outlined as constraining the realisation

of such benefits in teaching. These factors are identified as teacher-level and school-level factors (Balanskat, Blamire & Kefalla, 2007). Bingimlas (2009) outlined the teacher-level barriers or factors as; lack of teacher confidence, lack of teacher competence and teachers' negative attitude and resistance to change. The school related factors to combat these barriers according to Buabeng-Andoh (2012) are support, funding, training and facilities that influence teachers' adoption and integration of technologies into their classrooms. Further research has confirmed that many factors influencing teacher use of technology in a broader sense arise from the external environments where the teacher works. (Zhao and Frank, 2003; Teo, 2008). However, Ertmer (2005) also contended that while the external factors affecting technology use, such as funding, availability and access to infrastructure, have improved, personal factors such as teachers' competence and beliefs are yet to be resolved. This calls for more studies to be conducted with particular regards to personal factors that influence ICTs usage such as self-efficacy beliefs.

In Ghana, very few studies have been conducted in support of self-efficacy beliefs as one among other factors to positively or negatively influence successful ICTs integration in teaching (Caesar & Teye, 2012; Obiri-Yeboah, Owusu-Kwarteng & Kyere-Djan, 2013). Available research that exists mainly focused on the external factors that influence ICTs usage such as availability, access, infrastructure and funding (Sarfo, 2005; Buabeng- Andoh, 2012). Personal factors such as teacher competence, attitudes and self-efficacy beliefs have not been adequately investigated. It is in respect of these significant gaps in the literature that this article seeks to investigate how the COE teacher educators SEB affected their actual use of ICTs in teaching.

## **RELATED LITERATURE**

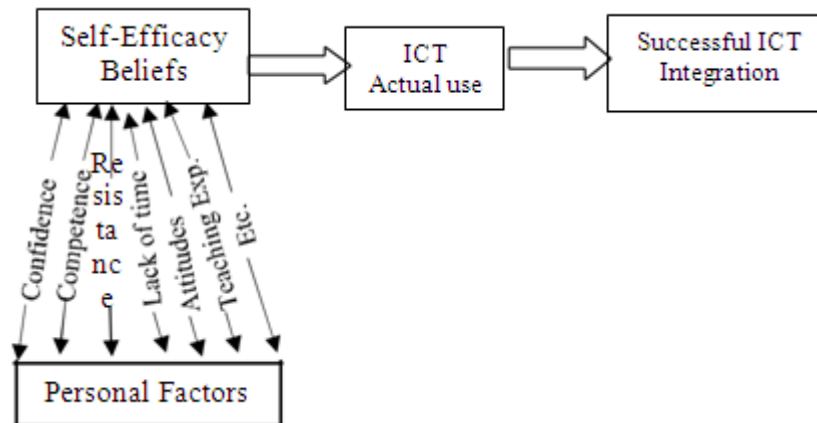
### **Social Cognitive Theory**

The social cognitive theory is the main concept behind self-efficacy beliefs. Social cognitive theory proposed by Albert Bandura (1977, 1986, and 1997) is a socio- cognitive perspective that enables individuals to self-regulate cognitive processes and behaviours, rather than simply react to events. This perspective ascribes to the belief that “individuals are capable of exercising a degree of control over their thoughts, feelings, motivations and actions” (Pajares, 2003) after a self-interpretation of performance. This control impacts and has the potential to alter subsequent actions and behaviours.

Bandura (1986, 1997) believed that behaviour is more effectively predicted by the beliefs that individuals have regarding their capabilities than what they are actually capable of accomplishing. Therefore, the beliefs individuals have about themselves provide a driving force in their academic accomplishments. It is these beliefs that determine “how well knowledge and skills are acquired” (Pajares, 2003). Research intensely demonstrates that self-efficacy can influence behaviour (Bandura, 1992; Delcourt & Kinzie, 1993). Miura (1987) also indicates that a person's self-efficacy belief towards a task will influence the decision to take on a task, the amount of effort used on the task and the persistence in accomplishing the task.

Applied to ICTs self-efficacy, this would suggest that one's choice, effort and persistence in using ICTs is influenced by one's level of self-efficacy in the use of ICTs.

Figure 2.1: Conceptual framework for teachers' ICT usage in teaching



Source: Field survey, 2016

The impact of ICT integration cannot be underestimated in any educational setting. It is expedient that teacher educators gain insight into ICTs and how they can be integrated efficiently and effectively into teaching. For a teacher educator to effectively use ICTs in their teaching it requires sufficient mastery and confidence in their usage. Personal factors such as self-efficacy beliefs are better exhibited when put into practice, especially in the use of ICTs. However, personal factors such as competence, confidence, resistance in ICT usage, lack of time, number of teaching experience, negative attitudes, etc. appeared to be related to teachers; SEB in the use of ICT tools in teaching and learning.

The literature indicates that SEB is a major and happened to be more significant than others when it comes to the use of ICT by teacher educators in teaching (Becta, 2004; Taylor, 2011).

When teacher educators believe their actions can produce the outcome they desire, they have the confidence to act and persevere in the face of difficulties or when influenced by other personal factors.

On the contrary, when teacher educators have no belief that their actions might lead to the required results, they become less confident to persevere or act in the face of adversity. It must also be noted as shown in figure 2.1 that even though self-efficacy beliefs relate to actual practice, they may or may not necessarily predict practice. The success of ICTs integration in teaching depends on its actual use which is influenced by Self-Efficacy beliefs of teacher educators. Self- efficacy beliefs is therefore believed to constitute personal factors affecting ICT integration in teaching.

## METHODOLOGY

This study adopted the descriptive design and mixed methods approach. According to Best and Kahn (2007), descriptive research is concerned with the conditions or relationships that exist, practices that prevail, beliefs, points of view or attitudes that are held, processes that are going on, effects that are being felt or trends that are developing. The purpose of the mixed method approach in the context of this study was to “obtain different but complementary data on the same topic” (Morse, 2003) to best understand the research problem. Creswell (2013) explains that mixed methods is an approach to inquiry involving collecting both quantitative and qualitative data and integrating the two forms of data to provide a more complete understanding of a research problem than either approach can achieve alone.

The population for this study comprised all the teachers of Colleges of Education (both public and private) in the Kumasi Metropolis who operated on regular basis. Based on the staff list provided by the various heads of institution, the total number of teacher educators was 135. Out of this number, 115 teacher educators were randomly sampled. This number was selected based on the suggestion of Cohen, Manion & Morrison (2007), that a sample size of 85% of the total population in a study is considerable for achieving a 95% confidence level and also sufficient for generalisation purposes. Furthermore, out of the sample of 115, 13 teacher educators were selected again to

collect observation data. This was done in line with Morse's (2000), suggestion that for qualitative studies, a sample size of 10% to 30% of the population is sufficient for generalisation purposes.

### Research Materials

In the collection of data for the study, a structured questionnaire and an observation checklist were used. The questionnaire was used to collect quantitative data whereas the observation checklist was used to gather qualitative data.

The questionnaire consisted of three (3) parts; A, B and C. Part 'A' provided six (6) items that dealt with demographic information of respondents: age, gender, educational qualification, years of teaching experience, type of institution and subject taught. Part 'B' consisted of ten (10) items, that elicited information on Teacher Educators ICT self – efficacy Beliefs, whilst the last part, Part 'C' comprised five (5) items which measured teachers' actual use of ICTs in teaching. To achieve the study's objectives, the researcher adapted the Professional Self-Efficacy Scale for Information and Communication Technology Teachers developed by Koksall *et al.*, (2015). This constituted part 'B' of the questionnaire. The scale used measured teachers' perceived ICT self-efficacy beliefs and ICT actual use on a 5-point Likert-type scale from 1= 'Strongly Disagree' to 5= 'Strongly Agree'. Examples of the items, included in the part 'B' of the questionnaire, are "I can use PowerPoint Presentations for classroom delivery, "I can engage students in using the computer to make their own meaning of content during lessons", "I can use PDAs as an alternative to other ICTs during teaching", "I can implement teaching methods effectively using ICTs" and "I can use the LCD projector to present lessons".

Part 'C' of the questionnaire consisted of ICTs actual use variables which were converted from the self-efficacy beliefs variables. They were also put on a 5-point Likert-type scale from 1='Strongly Disagree' to 5= 'Strongly Agree'. For instance, "I can use PowerPoint Presentations for classroom delivery" was converted to "I use PowerPoint Presentations for classroom delivery" to measure teachers' actual use of ICTs". Other examples followed as: "I engage students in using the computer to make their own meaning of content during lessons", "I use PDAs as an alternative to other ICTs during teaching", "I implement teaching methods effectively using ICTs" and "I use the LCD projector to present lessons".

The observation checklist was self-constructed based on a review of feedback of the quantitative results and 6, 5 and 2 departments from Wesley COE, St. Louis COE and Cambridge COE were selected respectively. This summed up to 13 respondents from all departments and COE on a whole for achieving a homogenous data.

A pre- observation was conducted at the COE to identify the ICT tools that were used to facilitate teaching according to departments. The common tools that were stated by HODs were selected and formed the items of the observation checklist. These were; Computers, LCD projectors, PowerPoint application, the Internet and PDAs. These items were put on a five point Likert- type scale; namely, Never =1, Rarely =2, Sometimes =3, Often =4 and Always =5.

### Procedure

Prior to the administration of the research instrument, the researcher explained the purpose of the study to participants and they were assured that data collected will remain anonymous and that at anytime they could withdraw from the study. Before the administration of the questionnaire, an explanation of the purpose of the study was given to the participants at a gathering of a T-tel programme which was compulsory for teachers to attend. They were also informed of their rights to participate voluntarily or not to participate in the study.

The administration of the two research instruments, i.e., the questionnaire and the observation checklist was personally done in all the three colleges over a two month duration. A total of One Hundred and Seven (107) answered questionnaires were retrieved out of the One Hundred and Fifteen (115) administered questionnaires. The responses from the respondents were examined and entered into the SPSS software version 21.0. Descriptive statistics (frequency counts and percentages) were performed on the data to obtain summary information on respondents' gender, educational qualification, teaching experience. Also correlational statistics was conducted to examine relationships among variables with the significance level set at 0.05.

The observation schedule was employed to observe the 13 selected teachers to check for the authenticity of their questionnaire responses as well what HODs reported on the ICT tools that the teacher educators use in teaching. The teacher educators were observed delivering their lessons from a reasonable distance and their actual use of the ICT

tools in teaching was recorded based on the scale on the observational guide. The teacher educators were observed while they were teaching to see whether they actually used the common tools in the observation guide as the HODs indicated during the pre-observation. Each of the teacher educators were observed on five separate occasions. These observations were deliberately made at times when the teachers had started teaching new topics. Even though permission had been sought for the observation, the researcher deliberately dropped in at those occasions without prior notice. The observation data were analysed systematically based on the themes on the observation guide.

## FINDINGS

This section presents the findings of the study in Tables 1, 2, 3 and 4 under the themes of demographic information of respondents, teacher educators’ levels of ICTs SEB, teacher educators’ actual use of ICTs in teaching and Correlation between COE teachers educators’ SEB and actual use of ICTs in teaching respectively.

**Table 1: Demographic Information of Respondents**

S/N	Variables	Frequency ( <i>f</i> )	Percentage (%)
<b>1</b>	<b>Gender</b>		
	Male	63	58.9
	Female	44	41.1
	Total	107	100.0
<b>2</b>	<b>Highest Educational Qualification</b>		
	Certificate	-	-
	Diploma	1	0.9
	Bachelors	19	17.9
	Masters	86	80.2
	Other	1	0.9
	Total	107	100
<b>3</b>	<b>Teaching Experience (Number of years taught)</b>		
	1 – 5 years	11	10.3
	6 – 10 years	23	21.5
	Above 10 years	73	68.2
	Total	107	100.0
<b>4</b>	<b>Type of Institution</b>		
	Public	97	90.7
	Private	10	9.3
	<b>Total</b>	<b>107</b>	<b>100.0</b>

Source: Field survey, 2016

The demographic information presented in Table 1 as per the gender distribution indicates that the majority of respondents 63(60%) were males, whilst 44(41%) were females.

In terms of the highest educational qualification of respondents, majority of the respondents representing 86 (80%) possessed Masters’ degree as their highest qualification with one respondent having a PhD. Nineteen 19(18%) respondents held Bachelor’s degree and 1(0.9%) respondent also held Diploma as their; qualification, no teacher was reported to have ordinary certificate as their highest educational qualification. This result supports the fact that NTCE minimum academic qualification of Master’s degree for teaching at the College of Education in Ghana was complied with.

**Table 2: Findings on Teacher Educators' ICTs Self Efficacy Beliefs**

Variables	SD	D	U	A	SA	Mean
	<i>Freq.(%)</i>	<i>Freq.(%)</i>	<i>Freq.(%)</i>	<i>Freq.(%)</i>	<i>Freq.(%)</i>	( $\bar{x}$ )
I can use PowerPoint presentations for classroom delivery	15(14%)	21(19.6%)	19(17.4%)	23(21.1%)	29(26.6%)	<b>3.28</b>
I can engage students in using the computer to make meaning of content	16(15%)	21(19.6%)	25(23.4%)	25(23.4%)	20(18.7%)	<b>3.11</b>
I can use LCD projector to present lessons	17(16%)	17(16%)	14(13.2%)	29(27.4%)	29(27.4%)	<b>3.34</b>
I can use available ICTs in collaborative activities	13(12.1%)	19(17.8%)	32(29.9%)	24(22.4%)	19(17.8%)	<b>3.16</b>
I can encourage students to think critically using ICTs	13(12.1%)	23(21.5%)	30(28%)	24(22.4%)	17(15.9%)	<b>3.08</b>
I can portray ICTs as learning aids and not objects of instruction	16(15%)	24(22.4%)	28(26.2%)	17(15.9%)	21(19.6%)	<b>3.93</b>
I can retain students' attention using ICTs	14(13.2%)	23(21.7%)	26(24.5%)	24(22.6%)	19(17.9%)	<b>3.10</b>
I can implement teaching methods using ICTs	15(14.2%)	22(20.8%)	24(22.6%)	23(21.7%)	22(20.8%)	<b>3.14</b>
I can evaluate lessons using ICTs	12(11.3%)	35(33.0%)	22(20.8%)	22(20.8%)	15(14.2%)	<b>2.93</b>
I can use PDAs as an alternative to ICTs	12(11.2%)	14(13.1%)	16(15.0%)	32(29.9%)	33(30.8%)	<b>3.56</b>
<b>Average Total</b>	17(16%)	17(16%)	14(13.2%)	29(27.4%)	29(27.4%)	<b>3.34</b>

Source: Field survey, 2016

The aim of the study was to find out the ICTs self-efficacy beliefs of teacher educators teaching in the colleges of education in Kumasi. In order to achieve this objective, a 10-item Likert-type scale questionnaire ranging from Strongly Disagree (SD = 1) to Strongly Agree (SA = 5) was structured around their beliefs in the use of ICTs in presenting lessons.

From the results showed in table 2, majority of teacher educators were not certain in reporting their ICTs SEB in teaching. Even though in comparison, a majority (44%) of respondents reported in agreement to have SEB in using ICTs to teach, this was below average (50%). While 34% of respondents disagreed to have SEB in using ICTs to teach, 22% of the remaining respondents remained at the neutral level. This is further confirmed by the mean scores of the ten sub-scales of the ICT self-efficacy beliefs. All the self-efficacy variables presented to respondents recorded just around the neutral value (3.0).

**Table 3: Findings of Teacher Educators' Actual ICTs Self Efficacy Beliefs**

Variables	SD	D	U	A	SA	Mean
	<i>Freq.(%)</i>	<i>Freq.(%)</i>	<i>Freq.(%)</i>	<i>Freq.(%)</i>	<i>Freq.(%)</i>	( $\bar{x}$ )
I use PowerPoint presentations for classroom delivery	47(43.9%)	28(26.2%)	7(6.5%)	12(11.2%)	13(12.1%)	2.21
I engage students in using the computer to make meaning of content	43(40.2%)	19(17.8%)	12(11.21%)	22(20.6%)	11(10.3%)	2.43
I use LCD projector to present lessons	50(46.7%)	21(19.6%)	10(9.3%)	17(15.9%)	9(8.4%)	2.20
I use available ICTs in collaborative activities	38(35.8%)	22(20.8%)	13(12.3%)	22(20.8%)	11(10.4%)	2.49
I encourage students to think critically using ICTs	37(34.6%)	16(15.0%)	15(14.0%)	27(25.2%)	12(11.2%)	2.64



I portray ICTs as learning aids and not objects of instruction	36(33.6%)	21(19.6%)	16(15.0%)	22(20.6%)	12(11.2%)	2.56
I retain students' attention using ICTs	37(34.6%)	23(21.5%)	15(14.0%)	18(16.8%)	14(13.1%)	2.52
I implement teaching methods using ICTs	42(39.3%)	23(21.5%)	12(11.2%)	18(16.4%)	12(11.2%)	2.39
I evaluate lessons using ICTs	44(41.1%)	26(24.3%)	11(10.3%)	14(13.1%)	12(11.2%)	2.29
I use PDAs as alternative to ICTs	23(21.7%)	13(12.3%)	8(7.6%)	31(29.2%)	31(29.2%)	3.32
<b>Average Total</b>	<b>39.7(37.17%)</b>	<b>21.2(19.85%)</b>	<b>11.9(11.14%)</b>	<b>20.3(19%)</b>	<b>13.7(12.83%)</b>	<b>2.51</b>

Source: Author's field survey, 2016

From table 3, teacher educators' actual use of ICTs in teaching was rated on a 5-point scale which ranged from Strongly Disagree (1) to Strongly Agree (5). The average totals from the table showed that majority (57%) of respondents were in disagreement that they actually use ICTs in teaching whilst only 34% responded in agreement, with 11% remaining uncertain. This indicates that teacher educators do not actually use ICTs in teaching.

To corroborate the results obtained from the questionnaire data, an observation was also carried out. While observing how the 13 teacher educators used ICTs (PowerPoint, computer, LCD projector, Personal Digital Assistance (PDAs) and internet) in teaching and learning, 3 out of 13 rarely used them in their lesson delivery whereas 10 never did. It was observed that they portrayed these ICT tools as teaching aids to increase comprehension and retention of lesson content. As a matter of fact, those teacher educators who used the above ICT tools happened to be ICT tutors who made use of the computer laboratory facilities. The same ICT teachers in addition to 1 teacher educator were also sometimes observed using PDAs such as smartphones, ipads, and tablets as reference tools where important points in lesson were referred to whilst 11 out of 13 never did. With the use of the internet, the teacher educators had limited access to the colleges' Wi-Fi (Internet). All the 13 teacher educators observed were never seen connected to the College's internet for teaching purposes.

**Table 4: Findings on Correlation between Teacher Educators' SEB and Actual use of ICTs in teaching.**

		Overall efficacy	self- use of ICT	Overall actual
Spearman's	Overall ICTs self-efficacy	Correlation Coefficient	1	.666**
		Sig (2-tailed)	.	.001
		N	107	107
	Overall ICTs actual use	Correlation Coefficient	.666**	1
		Sig (2-tailed)	.001	.
		N	107	107

\*\* . Correlation is significant at the 0.05 level (2- tailed). Source: Field survey, 2016

Table 4 presents the correlation matrix for the self-efficacy variables against actual use of ICTs in teaching. Spearman's rho correlation coefficient was used in computing the correlation matrix because the variables, overall ICTs self-efficacy and overall actual use of ICTs, were not normally distributed. The correlation coefficient from the table was presented as (r=0.666, p<0.001) indicating that there exists a positive relationship between teachers' self-efficacy beliefs in ICT and their actual use of ICTs in teaching. This implies that the overall ICTs self-efficacy increases (or decreases) with the overall actual use of ICTs.

## DISCUSSION

This study was conducted to find out the ICTs self-efficacy beliefs and actual use among teacher educators of colleges of education and to further examine the relationship that exist between their self-efficacy beliefs and actual use of ICTs in teaching.

From the results showed in table 2, majority of teacher educators were not certain about their ICTs SEB in teaching. Even though in comparison, a majority (44%) of respondents reported in agreement to have SEB in using ICTs to

teach, this was below average (50%). While 34% of respondents disagreed having SEB in using ICTs to teach, 22% of the remaining respondents were within the uncertainty dimension. This is further confirmed by the mean values of the ten sub-scales of the ICT self-efficacy beliefs which were scored around the neutral level (3.0).

It could be deduced from the above that if truly teacher educators strongly held ICTs SEB in teaching, they would have reported in agreement to the variables presented to them rather than remaining at the uncertain and disagreement levels (66%). This outcome is in line with Bandura's theory that those who believe they have the ability to influence the activities in performing a task have high self-efficacy, while those who feel they are not in control and have little to no impact on what will happen to them in the future have low self-efficacy. (Bandura, 1977; Yelland, 2007; Teo et al, 2008; Beauchamp and Kennewell, 2008).

This result could be probably attributed to lack of ICT pedagogy training, resistance to change, lack of access to adequate technologies in classrooms and lack of internet accessibility meant for teaching and learning. (Agyei, 2013; Sumang-Ang, 2013; Gbemu, 2016).

Notwithstanding, this result is at variance with the observation of Taylor(2011) in a study conducted in Georgia on teacher self-efficacy beliefs in implementing computers for instruction' which reported that a majority (76%) of teacher educators have positive self-efficacy belief about computer integration and are likely to actually integrate computers in their classes.

Furthermore, the study revealed that most of the teacher educators do not actually use ICTs in teaching. From Table 3 above, the average totals from the analysis showed that majority of teacher educators negatively reported to have self-efficacy in actually integrating ICTs in their teaching. The average totals from the table showed that majority (57%) of respondents were in disagreement that they actually use ICTs in teaching whilst only 34% responded in agreement with 11% being uncertain.

To confirm or disconfirm the results obtained from the questionnaire data, an observation was also carried out. While observing how the 13 teacher educators used ICTs (PowerPoint, computer, LCD projector, PDAs and internet) in teaching and learning, 3 out of 13 rarely used them in lesson delivery whereas the remaining 10 never did. It was observed that they portrayed these ICT tools as teaching aids to increase comprehension and retention of lesson content. As a matter of fact, it turned out that those teacher educators who used the above ICT tools happened to be ICT tutors. These teacher educators made use of the ICT tools available in the computer laboratory. The same ICT teachers in addition to 1 other teacher educator were also sometimes observed using PDAs such as smartphones, ipads, and tablets as reference tools where important points in lesson were referred to whilst 11 out of 13 never did. With respect to the use the internet in the colleges of education, the teacher educators had limited and poor internet connectivity available. Therefore the 13 teacher educators observed did not have their ICT tools connected to the College's internet for teaching purposes. The above observational results were perhaps due to the fact that a greater number of classrooms observed lacked adequate ICT infrastructure and tools such as computers, LCD projectors, and internet connectivity. Some classrooms were even not wired. Therefore any other subject teacher educator who had a genuine competence to use these tools had to transport students to the computer lab which did not have enough space to accommodate all of them. A similar report from Kafyulilo & Voogt (2015) in their study in Tanzania on "factors affecting teachers' continuation of technology use showed that majority of teachers had a positive belief about technology though their actual use was low. This indicates that teacher educators who claimed to be confident in their ICT abilities could have developed their attitudes much more positively towards the actual integration of ICT than those who were less confident (Lee & Tsai, 2010; Yuen & Ma, 2008; Wadman, 2005).

The foregoing analysis extends the previous knowledge that even though teacher educators moderately accept to have Self-efficacy in the use of ICTs in their teaching (Naresh, Ruduan & Jeffery, 2008), Colleges and Universities have generally been slow in their actual integration of ICTs into instruction and learning processes. (Abrahams, 2010; Hammond et al., 2011; Havtlevik, 2017).

With regards to the relationship between Teacher Educators' SEB and Actual use of ICTs in teaching, the study revealed a positive association between teacher educators' SEB and their actual use of ICTs in teaching with a correlation value ( $r=0.66$ ) from Table 4. This result is widely supported by Bandura's assertion (2001) that belief of personal efficacy is the foundation of human agency; that is, unless teacher educators believe that they can exhibit their ICT knowledge and skills in teaching, by their SEB, they can't accomplish the actual integration of ICTs in



teaching. Hence the self-efficacy beliefs of teacher educators about using ICTs for teaching are directly related to their practice. This result confirms previous research findings by Krumsvik (2011), Tondeur et al, 2012 (2012) and Klassen & Chill (2011) that there is a positive relationship between ICT Self-efficacy and instructional purposes among teachers. The potential reason for this finding is the observation that many higher institutions are not yet ready to lead technological transformation. Consequently, technological transformation should be actively shaped by teacher educators and policy makers rather than something that simply happens to them (European Commission, 2014; Manda and Backhouse, 2017; Tondeur et al, 2008).

### LIMITATION

There is the possibility that the teacher educator may alter their behavior to give a favorable impression of themselves to the observer. As a result the lessons were consciously observed from a reasonable distance. The researcher deliberately dropped in while the lessons were in progress without prior notice to the teacher educators.

### CONCLUSION

In conclusion, Teacher Educators were found to be uncertain about their ICTs self-efficacy beliefs in teaching. The fact that teacher educators were uncertain about their ICTs self-efficacy beliefs translated into their not actually using them in teaching. It is recommended that the Government of Ghana updates its ICT policy frameworks to ensure the integration of cutting-edge technologies into teaching and learning at the Colleges of Education. The ICT facilities of the Colleges of Education should be updated. Teacher Educators should also be provided with adequate pedagogical training in ICTs use and online connectivity in the Colleges should be improved to enable them integrate ICTs effectively into their teaching. Furthermore, the curriculum for the teacher trainees should be expanded to incorporate pedagogical training in ICTs usage.

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