Perception of Curriculum Innovation Needs For Pedagogical and Act Competencies among Education Students in University of Cape Coast, Ghana

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Abstract

Development in Information Communication and Technology has brought new dimensions to information management in every sphere of life, including the academic environment. Training institutions for teachers and Faculties of Education require innovations in their curricular for competency based teacher education programmes. As a facilitator of learning, the teacher, who is the pivot of all forms of instructional activities needs to harmonize pedagogical competency with ICT competency in order to add value to the quality of instruction in the school system. This paper presents an analysis of a survey conducted on perceived curriculum innovation needs for pedagogical and ICT competencies among undergraduate students of Education in Ghana. Four hypotheses were formulated to direct the study. The data for the study was gathered with the aid of a 34-item questionnaire designed by the researchers to elicit information on the relevant variables of the study. The instrument was administered on 300 Education students of University of Cape Coast, Ghana. Data gathered were analyzed using frequency counts, simple percentages, Pearson's Product Moment Correlation Coefficient and Analysis of Variance. Findings revealed that all the eight identified pedagogical aspects were perceived as highly required by the respondents. Based on the findings it was recommended that for the trainee teachers to be true facilitators of learning, they must be trained in the identified required competencies that can enhance their job performance.

Keywords: Student's perception, Curriculum innovation needs, Pedagogical competence, ICT Competence.

Introduction

Teacher training in higher education is competence based as it is a means of bequeathing on trainee teachers the latent skills that could enhance their job performance. A deficient teacher preparation programme will, as Amedeka (2005) points out, lead to inability of a majority of teachers to demonstrate adequate knowledge and understanding of the structure, function and development of their disciplines. The contrary will produce confident teachers, who are capable of transferring the same quality to their students.

One important highlight of UNESCO (2002) strategic plan for education is to improve quality through diversification of contents and methods, promoting experimentation, innovation, diffusion and sharing of information and best practices and policy dialogues. The above implies producing a pedagogically competent teacher, who is able to provide learners with a safe working environment where they can develop academically, socially, emotionally and morally. Training in pedagogical competence is thus seen as an important aspect of teacher training (Ghaill, 1992; Hooreman, Kommers & Jochems, 2008). In view of the foregoing, training policies for teacher education in many parts of the world now try to ensure that the emerging teaching workforce has a profound background, including a basic set of Information Communication Technology (ICT) skills that can be applied in pedagogical settings (Balanskat, 2005).

As a tool for educational delivery, curriculum is universally acknowledged to be intricately related to actions on educational reforms. Innovations in curriculum, according to Ajibola (2008), imply the introduction of ideas or practices that are relatively new within the context of the school. Huberman (1973) notes that when innovation occurs, it usually spreads through the system and is integrated into other operating practices, especially as it is deemed to be more efficacious in accomplishing the goals of the system.

Ajibola (2008) further observes that in every educational system, the need for change and innovation must arise from time to time.

According to Moreno (2006) the mounting pressures for change usually target and focus on both the structures and contents of school curricular. It therefore follows that as the human resource aspect of the school curriculum, it is necessary to consider the role played by students in curriculum change. This, as Ghaill (1992) avers, will make any innovation in the curriculum to be true to the notion of student centred learning.

Purpose of the Study

The purpose of this is to determine students' perception of the pedagogical and ICT competencies they need as trainee teachers for effective functioning in the field after graduation.

Research Hypotheses

On the basis of the study purpose, the following hypotheses were formulated to guide the study:

> i.There is no significant difference between the pedagogical skills required and those not required by education students.
> ii.There is no significant difference between the acquired and required ICT competence skills of education students.
> iii.There is no significant relationship between selected demographic characteristics and pedagogical skills required by education students.
> iv.There is no significant relationship between selected demographic characteristics and ICT competence skills required by education students.

Literature Review

Review of related literature focused on pedagogical competence needs and ICT competence needs.

Pedagogical Competence Needs of Trainee Teachers

Education is saddled with the responsibility of imparting to learners a variety of skills to enable them to meet the demands of their profession. As Miliszewska (2008) reveals, employers of labour are increasingly seeking graduates with a range of knowledge, skills and abilities, in addition to their degree status. Graduate teachers devoid of these attributes will thus be seen to be incompetent.

According to Beebe (2004), cited in Ololube (2006), instructional delivery in educational institutions in Ghana entails the teaching and learning process as well as the educational programmes and courses, the teaching pedagogy, research process, information dissemination and publication, library and information services and also higher education administration and management. All these should therefore constitute aspects in which skills should be possessed by a competent teacher to meet the global trend in educational development.

Ghaill (1992) avers that such a teacher must also have a good knowledge of subject matter in order to help learners acquire the skills they need to function effectively in their society. The teacher should also be able to co-operate with both colleagues and others in the working environment so as to expand his or her knowledge base. He should equally be able to give thought to his professional development, which calls for readiness to embrace innovations that are capable of enhancing his or her productivity. Dissemination of good practices and utilization of equipment form part of this.

Galanuli (2008) posits that prominent among strategies for good practice are training programmes designed to raise the skills levels of teachers and also foster in them positive attitudes towards computers. Jegede, Dibu-Ojerinde & Ilori (2007) predicate teachers' ICT competence on their attitudes and these can only be discerned when they are exposed to ICT.

ICT Competence Needs of Trainee Teachers

The need to integrate ICT into teacher training programmes is currently generating great interest all over the world. A good number of researches in teacher education, therefore, focus on the application of aspects of ICT in teacher education (Department of Education, Science and Training [DEST], 2005; Nicholson & Sanber, 2007; Ololube, 2006; Jegede, Dibu-Ojerinde & Ilori, 2007).

This interest is a reflection of the remarkable developments in computing hardware and software, the perverseness of the internet, the standards movement in general teachers' professional standards in particular (Nicholson & Sanber, 2007). DEST (2005) acknowledges the wide acceptance of ICT and supports the need to better exploit its teaching and learning potential. Nicholson and Sanber (2006) reveal that among Standards, 2004, produced by New South Wales Institute of Teachers, is knowledge of Information and Communication Technologies. This knowledge, the authors further reveal, extends from knowledge and proficient use of basic operational skills and related pedagogical skills for classroom management for new teachers to leading roles in ICT.

A study conducted by Jegede,Dibu-Ojerinde & Ilori (2007), using 467 teachers, revealed that teachers perceived computers to be useful in their pedagogical enterprise, aroused their interest in teaching and increased their computer skill. From the findings of the result, it is obvious that integration of ICT into the school curriculum is worthwhile. Application of ICT in classroom settings can enhance the ideal of best practices in education.

Ololube (2006) conducted a study on the impact and uses of ICT and issues that underlie its integration in teacher education programmes in Nigeria using 180 respondents from Faculties and Schools of Education. Results of data analyzed using SPSS package revealed that respondents were disgruntled with the sluggish use and integration of ICT into both higher and teacher education programmes. This belies the importance of ICT, which motivated several countries across the world to adopt various approaches to integrate it as a teaching strategy. Jegede, Dibu-Ojerinde & Ilori (2007) reveals, for instance, that the United States of America introduced ICT into schools in 1970, Mozambique in 1979 and Japan in 1985.

However, in a developing economy such as Ghana, just as is the case with other developing nations, a number of factors may hinder the integration of ICT into the teaching pedagogy. As Nicholson and Sanber (2007) rightly observe, developing countries operate within tight budgetary and time tabling constraints which make it difficult to provide learners with additional courses. The author advises that in such situations, ICT skills should be provided for students within their regular education sequence.

In today's global world of ICT competence, job demands require application of this competence. ICT skills, in contemporary times have become powerful and revolutionary tools for professional development. This revolution needs to be well extended and integrated into classroom practices of the education field in Ghana as it is done in other developed countries so that the impact of development would be felt in this sector. ICT is pervasive and has become indispensable to practically every aspect of life in the developed world. It has great potential for quality and quantity of instructional delivery, facilitates learning and research. Moreover, it adds value to the quality of the teacher, which as Ololube (2006) avers, is a principal determinant of students' learning as the teacher is a facilitator of knowledge. It is therefore pertinent to utilize ICT as part of teacher training pedagogy in order to facilitate learning and teaching as well as promote research skills as abundant materials available online will become accessible to teachers.

Methodology

The Ex-post facto research design was adopted to investigate the main variables of this study. The survey research method was used to investigate student's perception of required pedagogical and ICT competencies based on demographic variables such as sex, age, level of study, elective subject and previous working experience.

Population and sample

The subjects for this study were 300 undergraduate students of the Faculty of Education, University of Cape Coast, Ghana. The students were sampled as a result of their proximity to the researchers. The subjects were chosen based on their availability at the time of the administration of the research instrument, thus the accidental sampling procedure was adopted. The subjects were selected from twelve specialization areas and the criterion for selection is that they must have spent more than one year in the university environment to have acquired enough experience. Description of the subjects according to demographic characteristics is presented in Table 1.

Table 1: Demographic Profile of Respondents

Variables	Sub-scales	Frequency (F)	Percentage (%)
Sex	Male	202	71.6
	Female	80	28.4
Age	Below 20	10	3.5
	21 – 25	148	52.5
	26 – 30	77	27.3
	31 – 35	37	13.1
	36 – 40	5	1.8
	Above 40	5	1.8
Level of Study	200	62	22
	300	141	50
	400	79	28
Elective Subject	Social Studies	24	8.5
	Religious Studies	8	2.8
	Economics	26	9.2
	English Language	15	5.3
	Mathematics	61	21.6
	Ghanaian Language	5	1.8
	Geography	23	8.2
	Accounting	84	29.8
	Management	10	3.5
	Science	5	1.8
	Nursing	20	7.1
	Food and Nutrition	1	0.4
Previous Working Experience	1 year	14	5.0
	2 years	34	12.1
	3 years	31	11.0
	4 years	12	4.3
	5 years	9	3.2
	6 years and above	11	3.9
	None	171	60.6

Table 1 presents the demographic characteristics of the respondents for the study. In terms of gender distribution, 202 (71.6%) were males, while 80 (28.4%) were females. It can also be seen that the ages of a majority of the respondents, 148 (52.5%) ranged between 21 and 25, while 5 (1.8%) were aged between the 36 – 40 and 40 years and above. In terms of levels of study, half of the respondents were in their third year of pursuing the programme in Education.

It can further be observed from Table 1 that, most of the student-teachers considered for the study were Accounting elective students, 84 (29.8%) while 61 (21.6%) were Mathematics students, who were also the second is highest. However, only 1 (0.4%) was offering Food and Nutrition as elective subject. The previous working experience of student-teachers was also considered. It is believed that most of the education students in the university have either had training college education and have been teaching as trained teachers or pupil-teachers. However, it was found out that, majority of the respondents 60.6% have had no previous working experience, while 9 (3.2%) had 5 years working experience which was the least, compared to the other years of working experience.

Research Instrument

The research instrument was a thirty-four item questionnaire, designed by the researchers to elicit information from respondents on the variables reflected in the research hypotheses formulated. The questionnaire was divided into three parts; the first part elicited information on the demographic profile of respondents, the second part on pedagogic skills, while the third part gathered information on ICT skills. The instrument was administered to 300 Education students of University of Cape Coast, Ghana with the aid of research assistants. The students who constituted the study sample were used based on their availability at the time of the study, so the accidental sampling procedure was adopted. The instrument was validated after samples were given to colleague lecturers in ICT to give their comments and suggestions. Literature on ICT helped in designing the pedagogical items of the questionnaire. The items were found to be adequate to measure ICT competency items required by teachers to facilitate effectively (Kassa, 2006)

Data Collection

Copies of the questionnaires were administered to 300 Education students of University of Cape Coast, Ghana with the aid of research assistants during the second semester of the 2010/2011 academic session. All subjects used for this study were obtained through accidental sampling in their various classes at the time of the administration. Data collection was done on the spot with the questionnaires administered and collected from the subjects without attrition.

Data Analysis

Data gathered were analyzed using frequency counts, percentages, Pearson's Product Moment Correlation Coefficient and One Way Analysis of Variance (ANOVA).

Results

The result of data analysis is presented in tables as shown below.

Table 2: Frequency Distribution of Pedagogical Aspects

Pedagogical aspects	Required F (%)	Not Required F (%)	Mean	Std. Dev.
Cooperation/interaction team work	268 (95)	14 (5)	1.05	0.22
Participation in project or development work	249 (88.3)	33 (11.7)	1.12	0.32
Continuous learning through self evaluation and reflection	253 (89.7)	29 (10.3)	1.10	0.30
Creation of learning environment for individuals and groups to facilitate learning process	266 (94.3)	16 (5.7)	1.06	0.23
School administration	227 (80.5)	55 (19.5)	1.20	0.40
Classroom management	253 (89.7)	29 (10.3)	1.10	0.30
Competencies of school community management	240 (85.1)	42 (14.9)	1.15	0.36
Methods of teaching	259 (91.8)	23 (8.2)	1.08	0.27

***Required – 1.00, Not Required – 2.00

From Table 2 it is evident that all the eight identified pedagogical aspects were perceived as highly required by the students who responded to the questionnaire. With an average mean of 1.1075 and percentages of 80.5% to 95% for pedagogical aspects required, it can be said that education students really require all the pedagogical aspects to be able to function effectively as teachers on the field. The pedagogical aspect of cooperation/interaction team work recorded the highest percentage (95%) under required and school administration had (80.5%).

Table 3: Frequency Distribution of ICT Competency Needs

ICT Skills	Acquired F (%)	Required F (%)	Mean	Std. Dev.
Communication/Networking				
i. Send and receive e-mails	204 (72.3)	78 (27.7)	1.28	.45
ii. Chat on-line	194 (68.8)	88 (31.2)	1.31	.46
iii. Social networking website	141 (50)	141 (50)	1.50	.50
iv. Participate in message board	92 (32.6)	190 (67.4)	1.67	.47
Media Usage for Teaching				
i. Preparation of video/video cast	53 (18.8)	229 (81.2)	1.81	.39
ii. Preparation of audio podcast	46 (16.4)	236 (83.7)	1.88	.71
iii. Social booking, marking and tagging	64 (22.7)	218 (77.3)	1.71	.42
Content Creation				
i. Write blogs/micro blogs	49 (17.4)	233 (82.6)	1.83	.42
ii. Create graphics	64 (22.7)	218 (77.3)	1.77	.38
iii. Create or edit work	96 (34)	186 (66)	1.66	.47
iv. Design websites	52 (18.4)	230 (81.6)	1.82	.39
v. Produce video	46 (16.3)	236 (83.7)	1.84	.37
vi. Create on-line mind map	43 (15.2)	239 (84.8)	1.85	.36
vii. Create on-line assessment quizzes	53 (18.8)	229 (81.2)	1.81	.39
viii. Use learning management system for teaching	62 (22)	220 (78)	1.78	.41
ix. Use presentation software for instruction	91 (32.3)	191 (67.7)	1.68	.47
x. Create a learning environment using web				
xi. Use on-line resources to prepare lessons	60 (21.3)	222 (78.7)	1.79	.41
xii. Use live conferencing platform to manage projects	78 (27.7)	20 (72.3)	1.72	.45
xiii. Use story boarding or comic				
xiv. Create lessons using videos	54 (19.1)	228 (80.9)	1.84	.67
xv. Create lessons using pod casts				
xvi. Incorporate online games in lessons	49 (17.4)	233 (82.6)	1.83	.38
xvii. Use virtual learning environment in schools	54 (19.1) 38 (13.5)	228 (80.9) 244 (86.5)	1.81 1.87	.39 .34
xviii. Use e-mail to communicate with students	49 (17.4)	233 (82.6)	1.83	.38
xix. Create digital portfolio	70 (24.8)	212 (75.2)	1.81	.39
	118 (41.8)	164 (58.2)	1.87	.34
	41 (14.5)	241 (85.5)	1.83	.38

*** Acquired – 1.00; Required – 2.00

It can be observed from Table 3 that ICT competence skills in relation to aspects under Communication/Networking, indicated that education students have acquired skills like sending and receiving e-mails, 204 (72.3%) and Chat on-line, 194 (68.8%) while majority (67.4%) indicated that they required skills in participating in message board with 32.6% stating that they have acquired such skills.

In relation to media usage for teaching, which includes aspects like preparation of video and audio podcast, and social booking, marking and tagging, majority of the respondents indicated that they required skills in those areas (81.2%, 83.7% and 77.3%) respectively. In terms of content creation, the education students indicated that, they really required skills in most, if not all of the skills given. For example, it can be observed that 230 (81.6%) stated that they required ICT skills such as website design, while only 52 (18.4%) indicated that they had acquired the skill.

Also, 228 (80.9%) required skills in how to create lessons using videos while 54 (19.1%) already have those skills and 191 (67.7%) required skills in the use of presentation software for instruction while 91 (32.3%) have acquired those skills already.

In general, an average mean of 1.75 means that most of the Education students were not familiar with the identified ICT skills and as such would require them to function effectively as modern day teachers.

Table 4: Relationship between required and not required pedagogical skills

			Required	Not required
Pearson's	Required	Correlation coefficient	1.000	-1.00
		Sig. (2-tailed)		.000
		N	282	282
	Not required	Correlation coefficient	-1.00	1.000
		Sig. (2-tailed)	.000	
		N	282	282

*** Significant at .05 level (2-tailed)

A Pearson's Correlation Coefficient of -1.00 indicates a strong negative relationship between the pedagogical skills which students perceive as required and those which they perceive as not required. This implies that as the pedagogical aspects required by education students continue to increase, the aspects which are not required tend to decrease. This situation is possible because, as the education students get exposed to the pedagogical aspects of the teaching profession, they tend to desire more those aspects that would enable them to function effectively as teachers on the field. This situation is significant at 0.05 alpha level (0.01 < 0.05).

Table 5: Relationship between perceived acquired and required ICT skills

			Acquired ICT Skills	Required ICT Skills
Pearson	Acquired ICT Skills	Correlation coefficient	1.000	0.806
		Sig. (2-tailed)		.000
		N	282	282
	Required ICT Skills	Correlation coefficient	0.806	1.000
		Sig. (2-tailed)	.000	
		N	282	282

*** Significant at .05 level (2-tailed)

A Pearson Correlation of 0.806 indicates a strong positive relationship between students' perceived acquired ICT skills and their perceived required ICT skills. This implies that as the ICT skills acquired by education students increase, what they require also increases, thus, as education students become aware of various ICT skills and begin to use them, their desire to know more about ICT increases. This situation is significant at 0.05 alpha level (0.01 < 0.05).

Table 6: A one-way ANOVA showing the relationship between demographic characteristics and pedagogical skills required by education students

Demographic Characteristics	Sub-scales	Mean	Std. Dev.	Df	Sig.
Gender	Male	8.92	1.65	280	0.283
	Female	8.70	1.13		
Age	Below 20	9.00	1.05	276	0.134
	21 – 25	9.08	1.67		
	26 – 30	8.63	1.52		
	31 – 35	8.46	0.73		
	36 – 40	8.20	0.45		
	Above 40	8.80	1.79		
Level	200	8.66	0.85	279	0.406
	300	8.96	1.68		
	400	8.81	1.62		
Elective Subject	Social Studies	8.63	1.47	270	0.020
	Religious Studies	9.75	2.38		
	Economics English	8.62	0.94		
	Language	8.13	0.35		
	Mathematics Ghanaian	8.90	1.49		
	Language	9.20	2.17		
	Geography Accounting	8.70	0.82		
	Management	9.30	1.92		
	Science	8.60	0.97		
	Nursing	8.20	0.45		
	Food and	8.05	0.22		
	Nutrition	8.00	-		

*** Significance level .05

One-way Analysis of Variance (ANOVA) was used to determine if there is any statistical significance between the pedagogical skills acquired by male and female education students. The descriptive statistics obtained, as shown in Table 6, indicates that male education students on the average are perceived to have acquired higher pedagogical skills (M = 8.92) than female educational students (M = 8.70). From Table 6, the mean of male education students (M = 8.92, SD = 1.65) is not significantly higher (df = 280, two – tailed probability > 0.05) than the mean of female education students. This implies that there was no significant difference in the perceived pedagogical skills acquired by male and female education students.

With reference to age, One-way Analysis of Variance (ANOVA) was used to determine if there is any statistical significance between the perceived pedagogical skills acquired by education students in terms of their age. The descriptive statistics obtained, as shown in Table 6, indicates that the means varies from each other [Below 20 (M = 9.00); 21 – 25 (M = 9.08); 26 – 30 (M = 8.63); 31 – 35 (M = 8.46); 36 – 40 (M = 8.20) and Above 40 (M = 8.80)]. It can be observed that, education students between the ages of 21 – 25 have the highest mean score while those between 36 – 40 years have the lowest mean score. However, these differences are not statistically significant (df = 276, two – tailed probability > 0.05), hence there is no significant difference in the pedagogical skills acquired by education students in terms of their ages.

The relationship between the students' acquired pedagogical skills and their level of study was also of interest to the researcher. From Table 6, the mean scores of the levels [L. 200 (M = 8.66); L. 300 (8.96) and L. 400 (8.81)] were relatively different with education students in L. 300 having the highest mean score. However, One-way Analysis of Variance (ANOVA) was used to find out how statistically significant these differences in the means were. It was found that the differences were not statistically significant (df = 279, two – tailed probability > 0.05). It can therefore be stated that, there is no significant difference between education students' level of study and their acquired pedagogical skills.

Finally, the mean scores of education students in terms of their elective subjects also ranged from 8.00 to 9.75. The difference in the means seems to suggest that, the acquired pedagogical skills of education students varied in terms of their elective subjects. A One-way Analysis of Variance (ANOVA) test was used to find out how statistically significant these differences were, and it was found that the differences were statistically significant (df = 270, two – tailed probability < 0.05). This implies that, the pedagogical skills acquired by education students varied in terms of their elective subject.

Table 7: A one-way ANOVA showing the relationship between demographic characteristics and ICT: competence skills required by education students

Demographic Characteristics	Sub-scales	Mean	Std. Dev.	Df	Sig.
Gender	Male	8.92	1.65	256	0.583
	Female	8.70	1.13		
Age	Below 20	9.00	1.05	256	0.030
	21 – 25	9.08	1.67		
	26 – 30	8.63	1.52		
	31 – 35	8.46	0.73		
	36 – 40	8.20	0.45		
	Above 40	8.80	1.79		
Level	200	8.66	0.85	256	0.077
	300	8.96	1.68		
	400	8.81	1.62		
Elective Subject	Social Studies	8.63	1.47	256	0.177
	Religious Studies	9.75	2.38		
	Economics English	8.62	0.94		
	Language Mathematics	8.13	0.35		
	Ghanaian Language	8.90	1.49		
	Geography	9.20	2.17		
	Accounting	8.70	0.82		
	Management Science	9.30	1.92		
	Science	8.60	0.97		
	Nursing	8.20	0.45		
	Food and Nutrition	8.05	0.22		
		8.00	-		

*** Significant at .05 level.

One-way Analysis of Variance (ANOVA) was used to determine if there is any statistical significance between the ICT competence skills acquired by male and female education students.

The descriptive statistics obtained, as shown in Table 7 indicates that male education students on the average are perceived to possess slightly more required ICT skills (M = 8.92) than female education students (M = 8.70). However, the mean of male education students (M = 8.92, SD = 1.65) is not statistically significantly higher (df = 256, two – tailed probability > 0.05) than that of female education students. This implies that there was no significant difference in the perceived ICT competence skills acquired by male and female education students.

With reference to age, One-way Analysis of Variance (ANOVA) was used to determine if there is any statistical significance between the acquired ICT competence skills by education students in terms of their age. The descriptive statistics obtained, as shown in Table 7, indicates that the means varies from each other [Below 20 (M = 9.00); 21 – 25 (M = 9.08); 26 – 30 (M = 8.63); 31 – 35 (M = 8.46); 36 – 40 (M = 8.20) and Above 40 (M = 8.80)]. It can be observed that, education students between the ages of 21 – 25 had the highest mean score while those between 36 – 40 years had the lowest mean score. These differences are statistically significant (df = 256, two – tailed probability < 0.05), hence there is a significant difference in the ICT competence skills acquired by education students in terms of their ages.

The relationship between the students acquired ICT competence skills and their level of study was also of interest to the researchers. From Table 7, the mean scores of the levels [L. 200 (M = 8.66); L. 300 (8.96) and L. 400 (8.81)] were relatively different with education students in L. 300 having the highest mean score. However, One-way Analysis of Variance (ANOVA) was used to find out how statistically significant these differences in the means were. It was found out that the differences were not statistically significant (df = 256, two – tailed probability > 0.05). It can therefore be stated that, there is no significant difference between education students' level of study and their acquired ICT competence skills.

Finally, the mean scores of education students in terms of their elective subjects also ranged from 8.00 to 9.75. The difference in the means seems to suggest that, the acquired ICT competence skills of education students varied in terms of their elective subjects. One-way Analysis of Variance (ANOVA) was used to find out how statistically significant these differences were, it was found out that differences were statistically significant (df = 256, two – tailed probability > 0.05). This implies that, the ICT competence skills acquired by education students are not statistically different in terms of their elective subjects.

Discussion

The result of the study indicated that all the eight identified pedagogical aspects were perceived as highly required by the respondents. This implies that education students actually require all the pedagogical aspects to be able to function effectively as teachers on the field. The pedagogical aspect of cooperation/interaction team work recorded the highest percentage (95%) under required, while school administration had (80.5%). This further reinforces the assertion of Ghaill (1992) that a pedagogically competent teacher should be able to co-operate with both colleagues and others in the working environment so as to expand his or her knowledge base and should equally be able to give thought to his professional development. It also validates Ololube's (2006),support of Beebe's (2004) conviction that instructional delivery in educational institutions in Ghana entails the teaching and learning process as well as the educational programmes and courses, the teaching pedagogy, research process, information dissemination and publication, library and information services and also higher education administration and management. The finding also re-affirms the notion that training in pedagogical competence is an important aspect of teacher training (Ghaill, 1992; Hooreman, Kommers & Jochems, 2008).

With regards to ICT competence, an average mean of 1.75 implies that most of the Education students were not familiar with the identified ICT skills and as such would require them to function effectively in the classroom as modern day teachers. Respondents were particularly lacking in media usage for teaching, which includes aspects like preparation of video and audio podcast, and social booking, marking and tagging, as the majority of them indicated that they required skills in those areas. Most of the respondents equally indicated that they really required skills in content creation. This further confirms Ololube's (2006) findings that respondents in his own study were disgruntled with the sluggish use and integration of ICT into both higher and teacher education programmes. The finding equally affirms the claims of Nicholson and Sanber (2007) that developing countries operate within tight budgetary and time tabling constraints that make it difficult to provide learners with additional courses as well as integrate ICT into teaching pedagogy.

Recommendations

Based on the findings of the study, it recommended that for trainee teachers to be true facilitators of learning, they must be trained in the identified required competences that can enhance their job performance. It is also recommended that to facilitate the quality and quantity of instructional delivery, as well as learning and research ICT competence skills must constitute an aspect of classroom practices just as it is the case with advanced nations of the world. As Sanbar (2007) points out, the ICT skills can be provided for students within their regular education sequence.

Conclusion

To produce confident teachers, who are capable of transferring the same quality to their students, as well as to enhance the realization of UNESCO (2002) strategic plan for education, it is necessary to introduce innovations into teacher education programmes. Training in pedagogical skills and integration of ICT skills into classroom practices would produce high quality teachers who can compare with their counterparts in other parts of the world .This will also facilitate development in the education sector to meet the trend in other sectors of the society.

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