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COLLEGES OF EDUCATION STUDENT-TEACHERS' PERCEPTIONS ON THE E-LEARNING IN THE ERA OF COVID-19 PANDEMIC

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Abstract:
The study examined students' perceptions on the impact of online learning in the COVID-19 pandemic. A descriptive survey design was used. The study was conducted on level 100 student-teachers in three colleges of education (Accra, E. P. Amedzofe, and Peki), affiliated to the University of Ghana with a total population of 802. The calculated sample size was 325 on 4.2% margin of error with 95% confident level. A self-designed survey questionnaire, containing the background information, and five scaled Likert-type questions grouped on the variables of: home factors; teaching-learning and supports; and impacts of the online learning on students. The instrument was pilot tested on 50 student-teachers and later administered to the participants. The Cronbach alpha reliability check on instruments was 0.75 indicating the consistent reliability of the instrument. In all, 335 participants responded to the questionnaire. Descriptive data analysis was carried on with the Jamovi Statistical Data Analysis (JSDA) tool. Results revealed that students' E-learning are being distracted mostly by home related factors. The high cost of internet data and unstable internet connectivity were among the trending issues of concern to most students on the E-learning. The study recommends the consideration of blended teaching in the Colleges to prepare students in both physical and virtual classrooms experiences. Further, the colleges are urged to use common Learning Management System (LMS) to manage cost and internet data usage.

Keywords: colleges of education, E-learning, face-to-face/traditional, student-teachers, COVID-19

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1. Introduction

COVID-19, the global pandemic, as declared by the World Health Organization (WHO) (Cucinotta, & Vanelli, 2020), does not only destroy lives, but academic activities in the various institutions globally have totally been disrupted. Ghana as a nation was not left out of the hook of this dreadful disease. An unprecedented event that took the nation by shock called for the temporal but an indefinite closure of the country's educational institutions as a measure to combat the spread of the disease. This came as a result of the President of the Republic's State of the Nation's address aired on the 15th of March, 2020 declaring the closure of all public gatherings including schools from pre-tertiary level through to tertiary level effective from the 16th of March, 2020. The closure of the educational institutions greatly affected the progression of learners from one level to another. Most of the academic institutions in the country resorted to the online learning system to augment the teaching and learning activities. Colleges of Education in Ghana are of no exception to this new turn of event.

Online learning also known as electronic learning (E-learning) is variedly defined by various authors based on the context in which it is being used. E-learning as in educational paradigm-oriented classification (Sangrà, Vlachopoulos, & Cabrera, 2012), is said to be "*educational processes that utilize information and communication technologies to mediate synchronous as well as asynchronous teaching and learning activities*" (Jereb & Šmitek, 2006). Most studies revealed that there are so many advantages in online teaching and learning, for example; El-Seoud, El-Khouly, Sddiek and Nosseir (2014), in their study on "E-learning and Students' Motivation", revealed that "*the interactive features of E-learning increases the motivation of students in learning processes*" (p. 139). In the same vein, Luaran, Samsuri, Nadzri and Rom (2014), applauded that E-learning is ultimate in promoting much flexibilities on instructor-led or students' self-study. Alkhalaf, Drew and Alhussain (2012), maintained that the use of E-learning systems prove the positive impacts on students learning. On the other hand, Luaran et al, (2014) pointed out that the E-learning however incurred additional cost on students' expenses. Again, the authors maintained that E-learning reduced the social interactions among individuals unlike the face-to-face teaching and learning, (Luaran et al, 2014).

Despite all that had been said about E-learning, it is irrefutable that E-learning is not a common practice in Ghanaian Educational System. The rapid turn from face-to-face teaching to online teaching basically drew the attention of many scholars to research into it. Henaku (2020), conducted a descriptive phenomenology design on "Online Learning Experience of College Students". In his findings, poor internet connectivity and high cost of data were some of the challenges faced by students.

Adeoye, Adanikin and Adanikin, (2020), in their paper "COVID-19 and E-Learning: Nigeria Tertiary Education System Experience", clearly said that the major challenges of E-learning in Nigeria include "*irregular power supply, high internet subscription costs as well as poor internet access*" (p. 28).

Similarly, Owusu-Fordjour, Koomson and Hanson (2020), said the high cost of internet data is one of the major challenges hindering students' online learning. The study of Subedi, Nayaju, Subedi, Shah and Shah (2020), on "Impact of E-learning during COVID-19 Pandemic among Nursing Students and Teachers of Nepal" revealed that internet and electricity were some of the problems students faced during E-learning. Other studies also revealed that household chores negatively affect the academic performances of students. This current study purposely investigated Colleges of Education student-teachers' perceptions regarding the E-learning activities. The study used a descriptive design with quantitative data analysis. The study was guided by the following research questions:

1. How do home factors influence students' E-learning in the COVID-19 era?
2. How do teaching-learning and support influence student-teachers' E-learning in the era of COVID-19?
3. What impacts does E-learning have on student-teachers' in the era of COVID-19?

2. Materials and Method

The study used quantitative survey research design. Creswell referred to quantitative research as "*a means for testing objective theories by examining the relationship among variables where the variables in turn can be measured using instruments to produce numbered data that can be analyzed using statistical procedures*" (2009, p.4). The approach best fits this study since the study exclusively examined the Colleges of Education Student-teachers' perceptions on the E-learning.

2.1 Population and Sample

The study was conducted on level 100 student-teachers in three Colleges of Education (Accra, E. P. Amedzofe, and Peki) affiliated to the University of Ghana with a total population of 802. The Colleges were chosen based on convenience sampling technique. The calculated sample size was 325 on 4.2% margin of error with 95% confident level. A total of 335 student-teachers responded to the survey questionnaires. This eventually formed the accessible population of the study.

2.2 Data Collection and Analysis

Primary data on the study was collected. This was done using a self-designed survey questionnaire. The questionnaire was partitioned into four sections including: the background information (Programme of Study, sex, marital status and the ICT tools used), and three sections of five Scaled Likert-type Questions including students' perceptions on home factors, teaching-learning and supports, and impacts of the online learning on students. The instrument was pilot tested on 50 student-teachers. The Cronbach alpha reliability check on instruments turned out to be 0.75, this indicates acceptable degree of reliability of the tool.

The instrument was administered online through google form application template. Data were collected anonymously with respect to participants' anonymity and confidentiality. The study being quantitative in nature used descriptive statistics in data analysis through the use of Jamovi Statistical Data Analysis (JSDA) tool. The data were presented in tables and figures involving percentages.

3. Results

3.1 Background Information

Out of the 335 participants, 151 (45%) were females and 184 (55%) were males. About 98.2% were single with only 2.2% being married. The student-teachers' programme of study include B.Ed.: Early Grade, Upper Primary and JHS and the representations of these are 6.3%, 29.9% and 63.9% respectively. Mobile phones were the common ICT tools used by students with 92.2% representation, this was followed by: 5.7%, 1.8% and 0.3% for laptops, tablets and desktops users respectively. The following figures represent the data collected on background information.

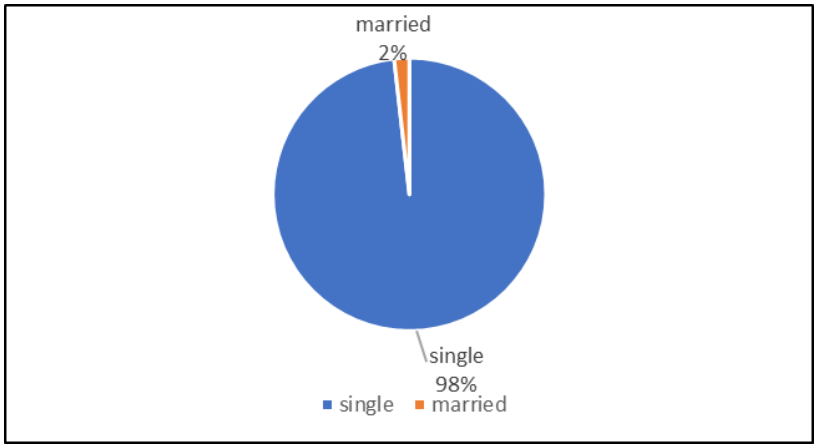

Figure 1: Marital Status

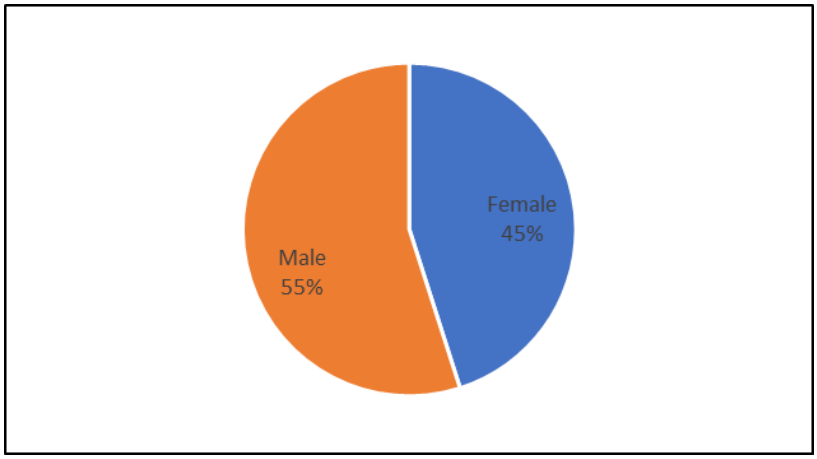

Figure 2: Sex Categories

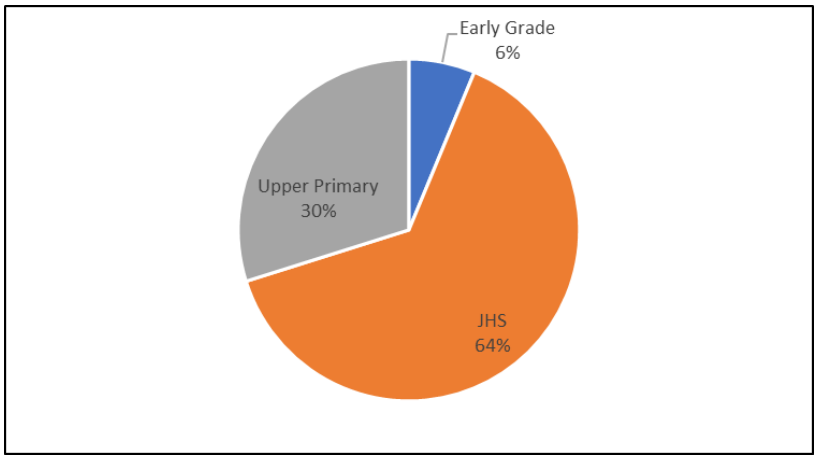

Figure 3: Programme of Study

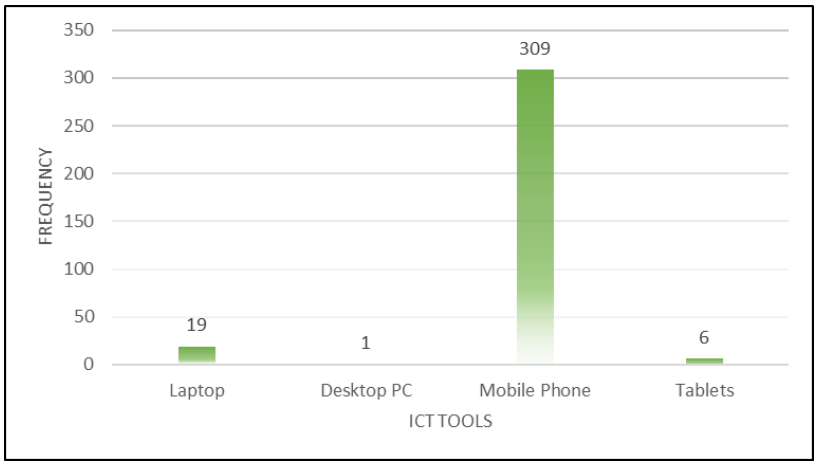

Figure 4: ICT Tools Used

3.2 Likert-Type Scale

All variables seek to gather individual students' views on online learning. Five Scaled Likert-type Questions were used including: Strongly Agree (SA) = 5, Agree (A) = 4, Not Certain (NC) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. Results of the Likert-type Questions are presented in tables showing frequencies in numbers (n) and percentages (%) as follows:

Table 1: Home Factors

Statements	SA		A		NC		D		SD	
	n	**%**	**n**	**%**	**n**	**%**	**N**	**%**	**n**	**%**
Distracted by household chores and other activities.	113	**33.7**	123	**36.7**	7	**2.1**	54	**16.1**	38	**11.3**
Unable to concentrate during online lectures.	119	**35.5**	123	**36.7**	4	**1.2**	52	**15.5**	37	**11.0**
Using ICT tools for the E-learning is difficult.	55	**16.4**	90	**26.9**	5	**1.5**	96	**28.7**	86	**26.6**
The ICT tool is used by the household.	91	**27.2**	104	**31.0**	7	**2.1**	74	**22.1**	59	**17.6**
Good and reliable internet connection all the time.	37	**11.0**	42	**12.5**	4	**1.2**	77	**23.0**	175	**52.2**

From Table 1, about 70.4% of the respondents agreed or strongly agreed that they are distracted by household chores and other activities during their online studies, similarly about 72.2% of the respondents admitted that they were not able to concentrate during the online lectures. About 55.3% disagreed or strongly disagreed that they find it difficult to use ICT tools, and about 75.2% also disagreed to have good and reliable internet connections all the time. About 43.3% and 58.2% of the respondents respectively affirmed they have difficulties in the use of ICT tools and the ICT tools used are for the household.

Table 2: Teaching-Learning and Supports

Statements	SA		A		NC		D		SD	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Synchronous (life) lessons are very interactive.	71	**21.2**	152	**45.4**	4	**1.2**	55	**16.4**	53	**15.8**
Lesson activities are of learner centered.	46	**13.7**	171	**51.0**	0	**0.0**	60	**17.9**	58	**17.3**
E-Learning materials are readily available all the time.	40	**11.9**	118	**35.2**	6	**1.8**	50	**14.9**	121	**36.1**
Prompt feedback on assignments.	108	**32.2**	175	**52.2**	1	**0.3**	18	**5.4**	33	**9.9**
Frequent assessment of students' performances.	98	**29.3**	177	**52.8**	1	**0.3**	28	**8.4**	31	**9.3**
Tutors support and advice students on E-learning.	133	**39.7**	157	**46.9**	0	**0.0**	9	**2.7**	36	**10.7**
Practical lessons are well organized.	29	**8.7**	82	**26.6**	7	**2.1**	98	**29.3**	112	**33.4**
I only join asynchronous (recorded) lessons.	87	**26.0**	172	**51.3**	8	**2.4**	31	**9.3**	37	**11.0**
The College has common LMS platform.	12	**3.6**	16	**4.8**	5	**1.5**	49	**14.6**	253	**75.5**

From Table 2, about 66.6% of the respondents as against 33.4% supported the statement that synchronous activities are very interactive, while about 64.7% of the respondents shared their views that learning activities are learner centered. Slightly more than one-half of the respondents 51.0% were against the notion that learning materials are made available online. In another vein, about 84.4% of the respondents claim prompt feedbacks on assignments are provided. Similarly, about 76.2% of the respondents admit that there is frequent assessment of students' performances. Then, about 86.6% of the respondents admit that Tutors support and advice students on E-learning whereas about 62.7% respondents disagreed that practical lessons are well organized. About 77.3% of the respondents agreed that they only join asynchronous (recorded) lessons, whilst about 90.1% respondents disagreed that the Colleges have common LMS platform.

Table 3: Impacts of E-learning

Statements	SA		A		NC		D		SD	
	n	%	n	%	n	%	n	%	n	%
E-learning helps me to use ICTs confidently.	73	**21.8**	199	**54.4**	3	**0.9**	22	**6.6**	38	**11.3**
With the E-learning I can now learn on my own.	78	**23.3**	197	**58.8**	2	**0.6**	24	**7.2**	34	**10.1**
I can now search for relevant E-materials to aid my learning.	94	**28.1**	200	**59.7**	2	**0.6**	21	**6.3**	18	**5.4**
I am more comfortable with E-learning than face-to-face learning.	43	**12.8**	111	**33.1**	4	**1.2**	61	**18.2**	116	**34.6**
E-learning motivates me more than face-to-face learning.	32	**9.6**	92	**27.5**	7	**2.1**	76	**22.7**	128	**38.2**
The E-learning has taken away the social connections that I'm used to.	142	**42.5**	122	**36.4**	2	**0.6**	23	**6.9**	46	**13.7**
E-learning adds to my financial problems.	209	**62.4**	90	**26.9**	0	**0.0**	18	**5.4**	18	**5.4**

From Table 3 above, about 76.2% of respondents affirm they can now confidently use ICT tools and about 82.1% of the respondents concede they have the confidence to learn on their own. About 87.8% admit they can use technologies to search for information to augments notes given by tutors. Slightly more than one-half (52.8%) of the respondents as against 45.9% disagreed on the statement that they are more comfortable with E-learning. About 60.9% of the respondents disagreed that they E-learning motivate them more than traditional/face-to-face learning. About 78.9% of the respondents uphold to the fact that E-learning has taken away the social connections they were used to whereas about 89.3% of the respondents allege the E-learning adds to their financial problems.

4. Discussions

The purpose of this study is to examine Colleges of Education Student-Teachers' perceptions on the E-learning in the era of COVID-19 pandemic. A total number of 335 students (about 55% males and 45% females) took part in the survey. From statistics on programmes offered by the respondents, it was clear that Junior High School (J.H.S.) programme (about 64%) was most offered by the respondents while Early Grade (E.G.) (about 6%) was the least Bachelor of Education programme offered. Regarding the marital status of the respondents, almost all (about 98%) are single. Mobile phones (about 92.2%) happened to be the most common ICT device used by the respondents.

Student-teachers' perceptions on the E-learning in the era of COVID-19, was examined in three areas including home factors, teaching-leaning and supports, and the impacts of E-learning. Students' responses illustrate varying views including the strengths and the weaknesses of the E-learning in the COVID-19 era. The analysis of the results on home factors showed that students encountered varying challenges regarding the E-learning. For example, majority, about 70.4%, 72.2% and 75.2% agreed to have been distracted by household chores, unable to concentrate during lessons and had unreliable

internet connections respectively. These findings are in line with the findings of Owusu-Fordjour et al, (2020) whose study revealed that only 18.7% of their respondents agreed of being able to learn effectively in the house. Henaku (2020) in his study identified poor internet connectivity as the major challenge students faced during the E-learning and our study also revealed that 75.2% of the respondents did not enjoy reliable and good internet connections.

Regarding the teaching-learning and supports, most of the responses indicate high rate of positive impacts on students' perceptions. For instance, 84.4%, 76.2% and 86.6% respectively admitted that prompt feedbacks on assignments, frequent assessment of students' performances, and Tutors support and advice students on E-learning are outstanding. However, 77.3%, 62.7% and 90.1% of respondents respectively, do not frequently join the synchronous lessons, disagreed that practical lessons are well organized, and disagreed that the Colleges have common LMS.

With respect to the impacts of E-learning on students, majority of the respondents with percentage frequency of 78.9 assert that E-learning has taken away the social connections they were used to during face-to-face. This supports the findings of Luaran et al, (2014) who maintained that E-learning reduced the social interaction among individuals unlike during face-to-face teaching and learning. Studies (Henaku, 2020 and Owusu-Fordjour et al., 2020) indicated that high cost of internet data is one of the major challenges hindering students' online learning. Our current study reveal that majority of the respondents (89.3%) agreed with E-learning increasing their financial problems hence limits their regularity in E-learning. About 60.9% and 52.8% respectively of the respondents claim they do not have enough motivation during E-learning neither are they comfortable with the E-learning unlike during the traditional/face-to face learning. This was in contrast with the findings of El-Seoud, et al, (2014) which revealed that "*the interactive features of E-learning increases the motivation of students in learning process*" (p. 139).

In the study of Sathishkumar, Radha, Mahalakshmi, & Saravanakumar, (2020) it is revealed that out of 175 respondents about 82.86% admitted that their self-study skills improved as a result of the E-learning. This study, in a similar vein, identified that majority of the respondents made up of about 76.2%, 82.1% and 87.8% respectively affirmed that the E-learning enabled them to confidently use ICT tools in learning, they have the confidence to learn at their own pace and they can use technologies to search for information to augment tutors' notes for more understanding.

5. Conclusion

The shift from the traditional classroom teaching to E-learning in the Ghanaian educational system was as a result of the explosion of COVID-19 pandemic globally. This study examined student-teachers' perceptions on the E-learning in the era of COVID-19. Results show that students' E-learning are being distracted mostly by home related factors. The high cost of internet data and unstable internet connectivity to mention a few

were among the trending issues of concern to most students on the E-learning. These findings need urgent attention to help develop more friendly and robust E-learning environment for the student-teachers.

5.1 Recommendation

The study recommends that Colleges together with the affiliated Universities should put up systematic strategic plans to improve students' E-learning activities. It is also recommended that the blended teaching to prepare students in both physical and virtual classrooms experiences should be considered in the Colleges instead of focusing only on the traditional/face-to-face teaching and learning. Further, the colleges are urged to use common LMS to manage cost and internet data usage.

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Conflict of interest statement

We declared no conflict of interest.

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