UNIVERSAL WISER
PUBLISHER

Special Issue
Research Article

Evaluation of Trainee Teachers' Satisfaction in Using Online Learning Tools in the Era of COVID-19 in Gbewaa College of Education

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Abstract: The COVID-19 outbreak caused a paradigm shift in our educational system. To halt the spread of the pandemic, all educational institutions were closed down. As a result, tertiary institutions, including Colleges of Education, were forced to use online teaching and learning. The purpose of this study was to evaluate trainee teachers' level of satisfaction with the use of online tools in teaching and learning, with Gbewaa College of Education serving as a case study. A quantitative descriptive online survey questionnaire was used to collect data. A convenient sampling technique was used to select three hundred and twenty-seven (327) trainee teachers from a population of six hundred and forty-five (645) for the study. The data was collected using the MikeCRM online web survey application. The findings revealed that largely, trainee teachers were dissatisfied with the quality and accessibility of the available online learning tools used by their tutors. Many trainee teachers were unfamiliar with how to use some of the online teaching and learning tools. From the findings, there is the need for proper training on the use of online learning tools as well as the development of a robust ICT infrastructure to ensure easy accessibility and quality online teaching and learning in this new normal of the COVID-19 era.

Keywords: asynchronous, epicenter, higher institutions of education, pandemic, satisfaction, synchronous, trainee teachers

1. Introduction

1.1 *Introduction and background*

The World Health Organization (WHO) declared the Coronavirus Disease (COVID-19), which began as an epidemic in the Chinese city of Wuhan in late December 2019, an emergency public health concern in January 2020. The outbreak was officially declared a global pandemic by the WHO in March 2020, the highest level of a health emergency. COVID-19 has now spread to nearly every country, affecting thousands of people and disrupting nearly every aspect of human activity. As new cases emerge, the pandemic is causing health emergencies as well as economic distress around the world as governments implement quarantine and lockdown measures to flatten the disease's growth curve. The pandemic has taken a heavy toll on people, businesses, and cooperatives of all sizes and scopes. Egypt was

the first African country to report a COVID-19 case in February 2020. Since then, the disease has spread to nearly every country on the African continent, including Ghana. On March 12, 2020, Ghana recorded its first two cases, both imported, and has since recorded slightly more than 35,000 cases, including slightly more than 31,000 recoveries and 175 deaths by the end of July 2020 (Ghana Health Service, 2020a).

Even before the first cases were reported, Ghana was bracing itself and taking precautions to prevent the virus from entering the country. One of the first steps taken was the refusal to evacuate Ghanaian students who were stranded in Wuhan, the pandemic's origin and initial epicenter. Furthermore, the government prohibited all travels by state officials. Following the initially recorded cases in Ghana, all of which were imported, the President of Ghana outlined measures to prevent the virus from being imported on March 15, 2020. Among the measures taken were restrictions on entry into Ghana by other nationals (except for resident permit holders) traveling from countries with at least 200 coronavirus cases, as well as a mandatory 14-day self-quarantine for those who are otherwise permitted to enter Ghanaian territory (The Presidency, Republic of Ghana, 2020). The first measures outlined above have proven to be ineffective; for example, between the 13th and 20th of March, a total of 19 cases were confirmed; 16 of these were imported (Ghana Health Service, 2020b). This compelled Ghana's President to impose even stricter travel restrictions, ordering the closure of Ghana's land, sea, and air borders to human traffic on March 22, 2020, at midnight (GhanaWeb, 2020).

Following the increase in numbers caused by the virus's community spread, Ghana's president acted in accordance with the powers granted under the newly enacted Imposition of Restrictions Act, 2020 (Act 1012), by instituting a series of measures, including but not limited to the following: The most affected areas, such as the Greater Accra Metropolitan Area, the Greater Kumasi Metropolitan Area, and the contiguous districts were subject to a partial lockdown. This lockdown restricted the movement of people in the affected areas for two (2) weeks, subject to review. All public gatherings, including workshops, conferences, funerals, festivals, and religious services, were halted (GhanaWeb, 2020).

One crucial area that the lockdown measure had a significant impact on, was the educational sector. To help stop the spread of the COVID-19 pandemic, all educational institutions, including universities, colleges, high schools, and primary schools (both private and public), were authorized to close down until further notice on March 16, 2020. Except for a waiver granted to final year students of educational and training institutions to return to school on June 15, 2020 to complete their exit examinations, these educational institutions were closed down.

Given the epidemic's realities and the necessity to control its effects on the educational system, the government and educational authorities notably, higher educational institutions, took all reasonable measures to minimize disruptions to education as a result of the pandemic. The most common response around the world was to use virtual learning, which is not new in itself.

1.2 *Statement of the problem*

Since the advent of computers and the Internet, improvements in Information and Communication Technology (ICT) have had a profound impact on how education is delivered. The COVID-19 pandemic, however, forced Ghanaian colleges and other educational institutions to start offering virtual lessons. This arrangement evoked sentiments of "I can" or "I cannot" among tutors and trainee teachers. Self-efficacy research has found that an individual's assessment of her/his ability to complete a task has a direct correlation with how well she/he completes the task (Zuya et al., 2016; Usher & Pajares, 2009) since a strong self-efficacy has been found to be a good predictor of higher motivation and a willingness to view difficult tasks as challenges rather than obstacles (Han et al., 2015).

In the wake of the outbreak of the pandemic in Ghana, educational authorities made every effort to limit disruptions to education. Consequently, Colleges of Education took measures to guarantee that trainee teachers' access to education was maintained in light of the realities, which called for the need to shift away from face-to-face to online teaching and learning.

Due to weak network coverage and limited access to digital technologies, online teaching and learning are frequently interrupted (Beetham, 2017). It is usual to hear vehement comments from tutors and trainee teachers regarding the lack of or inadequateness of these digital technology coverages and resources. Since online teaching and learning has established itself as the new norm in Ghanaian higher educational institutions during this crucial COVID-19 era, it would be beneficial to gauge how satisfied trainee teachers are with the usage of online teaching resources.

1.3 *Purpose of the study*

The purpose of this study was to evaluate the level of trainee teachers' satisfaction with the use of online tools in teaching and learning using Gbewaa College of Education as a case study.

1.4 *Research questions*

The research questions which guided the study were:
1. What online tools are being employed by tutors?
2. How satisfied or dissatisfied are trainee teachers with the use of online teaching and learning tools?

2. Review of related literature

The COVID-19 virus outbreak compelled the government to close all levels of education and other social activities on March 16, 2020. This development precipitated the introduction of a new paradigm in instructional approach, in which two pedagogical approaches: synchronous and asynchronous learning strategies were introduced in Colleges of Education to allow academic work to continue. Colleges, as a result, adopted face-to-face and online education systems, utilizing various Learning Management Systems and other e-learning resources depending on the mentoring institution a College is affiliated to. Teachers throughout Ghana accepted the challenge of transitioning from conventional face-to-face teaching to a new norm of teaching and learning to defend college students from COVID-19 (Tupas & Linas-Laguda, 2020). Online learning became accepted as an approach at a round-table meeting with no policy documentation to cope with the demanding situations going through colleges of education in the aftermath of the COVID-19 pandemic (Agbador, 2021). According to Agbador (2021), online learning was implemented without direction and was left to affiliate universities to assist colleges in implementing it. However, the approach did not appear to be beneficial because these affiliate institutions are also dealing with online issues such as weak internet connectivity, erratic power supply, high cost of data and server-related errors, among others. The colleges were left to fend for themselves, lacking the necessary support systems such as ICT infrastructure and training of both tutors and trainee teachers to carry out online teaching and learning. Transforming Teaching, Education, and Learning (T-TEL) performed a large function in helping Colleges of Education in overcoming several demanding situations related to the online learning technique by supplying college students with smartphones and paying part of the cost. They additionally helped a few colleges with ICT infrastructure (Agbador, 2021).

According to Snelling and Fingal (2020), Graham (2019), Cleveland-Innes and Wilton (2018) and Kaur (2013), online learning strategies include guaranteeing digital equity, practice, setting clear expectations for students, spending time planning, creating, and maintaining daily schedules, selecting appropriate tools and sticking with them, and asking for feedback to clear up any misunderstandings during synchronous and asynchronous sessions. Higher Educational Institutions, including Colleges of Education, have adopted online learning as a new model. Online learning combines synchronous and asynchronous sessions that permit students to interact with teachers in real-time and at their convenience (Tupas & Linas-Laguda, 2020; McCutcheon et al., 2018; Rooney, 2003; Young, 2002; Reay, 2001). Learning that is done totally or mostly online is referred to as online learning (Gilbert, 2015; Keppell, 2010). It can be synchronous or asynchronous. While asynchronous learning takes place outside of a classroom setting and is done at the learner's leisure, synchronous learning involves students interacting with a teacher in real-time (Dictionary.com, 2020). According to Tupas and Linas-Lagudan (2020), online learning is regularly known as a hybrid technique in Higher Education. Tutors and students meet online using Google Classroom, Zoom, WhatsApp, Telegram, and other similar tools in synchronous and asynchronous instructions. Students can ask questions orally or through live text chats in some of these instructions. Tutors video lectures and put them up onto the Learning Management System (LMS), Telegram, WhatsApp, and different platforms for students to access at their leisure. More importantly, the coming into being of smart telephones and the ability for mobile devices to use make e-learning a powerful tool. According to Sutikno et al. (2016), Telegram is one of the steadiest messaging apps and gives a massive quantity of space to store files. Furthermore, the maximum number of individuals in a Telegram group is 200,000, whilst that of WhatsApp is 256. (Sutikno et al., 2016). According to Klímová's (2018) research, mobile apps like Telegram assist in a boom in students'

motivation to study by growing confidence, lesson participation, and students' proclivity to apply mobile gadgets to education. Andujar (2016) sees WhatsApp as a powerful tool for improving students' writing and energizing their active participation.

According to Keppell (2010), online learning is unique because communication technology gives the learner freedom of choice. Using synchronous and asynchronous interactions in online learning settings, we are changing the way we approach teaching and learning. Masalela (2009) asserts that students, (trainee teachers) are inspired to carry out independent studies on relevant subjects to hone their critical thinking abilities through online learning. Thus, online learning is advantageous for trainee teachers since it makes knowledge more accessible, which enhances learning. Furthermore, learners become self-directed, developing lifelong learning skills in the process (Masalela, 2009). According to Gautam (2020), schools need to invest in training teachers with the latest technology updates so that they can conduct online classes seamlessly. She added that very often, teachers have a very basic understanding of technology and do not have the necessary resources and tools to conduct online lessons.

In academic activities, including online education, self-efficacy or intrinsic self-belief, plays a significant role (Kundu, 2020; Pumptow & Brahm, 2020). Bandura (1997) discovered that due to the rapid advancement of technological tools, the pedagogical use of technology may necessitate special and ever-evolving types of teacher self-efficacy. Tsai (2017) asserts that peer support and e-learning outcomes are significant predictors of participants' self-efficacy when using a specific online tool. Tsai's (2017) assertion is in tandem with She et al. (2021), who state that the ability and confidence to learn from online courses, connect, and engage with others are the main reasons for online learners' satisfaction. A key determinant of academic success and the effectiveness of online learning systems is learning satisfaction. According to She et al. (2021), many factors influence how satisfied learners are with their online learning experiences. One factor that has been found to have a significant impact on how satisfied students are with their online learning is the quality of the online support services. This factor favorably influences how satisfied students feel with their learning (She et al., 2021).

3. Research methodology

The purpose of this study was to evaluate trainee teachers' satisfaction with the use of online tools in the teaching and learning environment. As a result, the study took the form of a survey and used quantitative methodology. Training on the use of online teaching and learning, trainee teachers' satisfaction, and the quality of the use of these online tools were the variables surveyed. Survey designers create and use surveys with the goal of gaining the most information from the study (QuestionPro, 2022). Survey designs, according to QuestionPro (2022), are best suited for online studies like this one. Because quantitative methodology allows findings to be generalized (Worldatlas.com, 2022; Scott & Deirdre, 2009), findings from the sample under study will more accurately reflect the overall population from which the sample was drawn (p. 7). Moreover, quantitative data is best suited for investigating relationships because they can be measured objectively (Creswell, 2015).

Using a convenient sampling technique, the population and sample for this study included all level 200 and 300 students of the institution. The reason was that prior to 2017/2018, Ghana's colleges of education offered a 3-year diploma degree before the introduction of a 4-year bachelor of education program. The last batch of the three-year diploma program had graduated at the time of the study. Due to the COVID-19 pandemic that disrupted the 2020/2021 academic calendar, level 100 (first year) trainee teachers' admissions were delayed; hence there were no level 100 trainee teachers. This is why the study focused primarily on the levels 200 and 300 trainee teachers that were accessible at the time. Convenience sampling is a type of non-probability sampling method that collects data from members of the population who are readily available to participate in the study (Saunders, 2012). This viewpoint on convenience sampling mirrored the manner in which respondents' data was obtained.

The main instrument for data collection was an online questionnaire survey, using the MikeCRM web survey. The validity of the questionnaire was ensured by pilot testing it in an analogous College. This provided us with the chance to change and improve the questionnaire items so that they accurately reflected the objectives of the study. An online questionnaire survey, designed and distributed with the MikeCRM web survey application, was used to collect data. The link to the questionnaire was distributed to all second and third-year trainee teachers in the College via electronic internet options such as WhatsApp, Telegram, and email. Three hundred and twenty-seven (327) trainee teachers

responded to and submitted the questionnaire survey from a population of 645 trainee teachers. There were 211 male respondents (64.53%), and 116 female respondents (35.47%). According to Scott and Deirdre (2009), one difficulty with Web surveys is that the sample is biased toward those with more technological training or greater access to the Internet (p. 78). The data collected were analysed using descriptive statistics expressed as percentages.

4. Results and discussions

The first research question sought to ascertain the online tools used by tutors to conduct lessons with trainee teachers. Table 1 presents the data on the Learning Management System (LMS) platforms that were used. Table 2 also presents data on the instant-messaging tools.

Table 1. LMS platforms for online teaching and learning by tutors

Variable	Frequency (%)
Moodle	20 (4.80)
Sakai	156 (37.41)
Google Classroom	107 (25.66)
Others	134 (32.13)

N = 327

Table 1 shows that the majority of students, 156 (37.41%), use(d) Sakai. Moodle had the lowest usage rate of 4.8%. Even the other LMS platforms had a significant percentage, 32.13% when compared to Moodle. The low use of Moodle as an online tool suggests that respondents are unfamiliar with it, in addition to having received no training. The other LMS had an edge over Moodle in terms of usage due to perhaps peer support.

Table 2. Online/instant messaging tools tutors used for teaching and learning

Variable	Frequency (%)
Telegram	311 (54.85)
WhatsApp	68 (11.99)
Zoom	81 (14.29)
Text Messages	15 (2.65)
Messenger	5 (0.88)
WeChat	2 (0.35)
Skype	2 (0.35)
Email	66 (11.64)
Others	17 (3.00)

N = 327

According to the survey of online/ instant messaging tools in Table 2, 54.85% of the trainee teachers patronized the Telegram platform used by their tutors. WeChat and Skype were the least used, accounting for 0.35% of each. Some of the respondents cited the fact that their tutors utilized Telegram more frequently than the other online tools as one of the reasons.

The next research question wanted to evaluate the level of trainee teachers' satisfaction quality of the use of online tools in teaching and learning. Tables 3, 4, 5 and 6 provide data elicited from the respondents on this subject.

Table 3. Trainee teachers' satisfaction level using online learning tools

Variable		Responses					
		VS	SS	N	SU	VU	NA
Moodle	Freg.	13	44	53	24	83	110
	%	3.98	13.46	16.21	7.34	25.38	33.68
Sakai	Freg.	28	39	48	22	87	103
	%	5.56	11.93	14.68	6.73	26.61	31.50
Google Classroom	Freg.	68	58	49	25	47	80
	%	20.80	17.74	14.98	7.65	14.37	24.46
Telegram	Freg.	138	63	61	21	41	3
	%	42.20	19.27	18.65	6.42	12.54	0.92
WhatsApp	Freg.	108	37	61	15	25	81
	%	33.03	11.31	18.65	4.59	7.65	24.77
Zoom	Freg.	26	31	43	25	98	104
	%	7.95	9.48	13.15	7.65	29.97	31.80
Email	Freg.	71	42	61	19	34	100
	%	21.71	12.84	18.65	5.81	10.40	30.58
Messenger	Freg.	34	31	53	19	37	153
	%	10.40	9.48	16.21	5.81	11.31	46.79
Text Messages	Freg.	68	24	56	12	33	134
	%	20.80	2.34	17.13	3.67	10.09	40.98
Skype	Freg.	8	14	34	18	50	203
	%	2.45	4.28	10.40	5.50	15.29	62.08
WeChat	Freg.	13	17	25	15	46	211
	%	3.98	5.20	7.65	4.59	14.07	64.53

N = 327
Key: VS-Very Satisfied; SS-Somewhat Satisfied; N-Neutral; SU-Somewhat Unsatisfied; VU-Very Unsatisfied; NA-Not Applicable

Considering the survey on user satisfaction levels in Table 3, Telegram provided the highest level of satisfaction, with 42.2% responding that they were very satisfied with its use. The overall satisfaction rate of trainees with telegram usage was 61.47%. In terms of user satisfaction, Google Classroom and Text Messages came in second and third, with 38.54% and 23.14%, respectively. According to Klímová (2018), Andujar (2016), and Sutikno et al. (2016), Telegram increases students' motivation to study, boosts confidence, is more user-friendly, and provides a large amount of storage to save files. These features help to explain why more trainee teachers prefer learning via Telegram over other online resources. According to some of the respondents, Telegram lessons were easier to join than the others. This backs up Sutikno et al's. (2016) assertion that Telegram can accommodate more users.

Table 4. Frequency distribution on whether trainee teachers would like to continue with current online tools or switch to another

Tools		Responses		
		Stay	Switch	Don't Know
Moodle	Freg.	86	110	131
	%	26.30	33.64	40.06
Sakai	Freg.	93	120	114
	%	28.44	36.70	34.86
Google Classroom	Freg.	152	82	93
	%	46.48	25.08	28.44
Telegram	Freg.	263	28	36
	%	80.43	8.56	11.01
WhatsApp	Freg.	206	42	79
	%	63.00	12.84	24.16
Zoom	Freg.	59	160	108
	%	18.04	48.93	33.03
Email	Freg.	144	77	106
	%	44.04	23.55	32.42
Messenger	Freg.	83	103	141
	%	25.38	31.50	43.12
Text Messages	Freg.	155	82	130
	%	35.17	25.08	39.76
Skype	Freg.	19	116	181
	%	5.81	39.76	54.43
WeChat	Freg.	30	116	181
	%	9.17	35.47	55.35

N = 327

According to Table 4, 80.43% of respondents said they would continue to use Telegram as an online learning tool. This was followed by WhatsApp, with 63.0% agreeing to stay. On the issue of switching to a different online tool, Zoom registered the highest with 48.93%, followed by Skype and Sakai with 39.76%, and 36.70% of respondents enjoyed the lowest attrition rate of 33.95%, 30.89%, and 8.26% respectively. Another interesting trend that emerged from Table 4 was that the online video tools: Zoom, Skype, Sakai, and Moodle witnessed the highest attrition rates. The high data consumption of online video tools makes them unaffordable, which contributes to their high attrition rate among respondents. Another factor is that poor internet connectivity makes it challenging to follow synchronous lessons as well as download asynchronous lessons.

Table 5. Reasons for trainee teachers' satisfaction or dissatisfaction with the use of online tools for teaching and learning

Responses		MO	SA	GC	TE	WA	ZO	EM	TM
It meets my needs	Freg.	13	19	39	10	86	18	52	54
	%	3.98	5.81	11.93	21.41	26.30	5.50	15.90	16.51
It is easy to learn	Freg.	17	27	48	86	71	18	34	34
	%	5.20	8.26	14.68	26.30	21.71	5.50	10.40	10.40
It is reliable	Freg.	8	9	34	39	33	14	43	33
	%	2.45	2.75	10.40	11.93	10.09	4.28	13.15	10.09
It helps me to communicate with my tutors	Freg.	14	8	22	56	37	13	27	27
	%	2.28	2.45	6.73	17.13	11.31	3.98	8.26	8.26
It is difficult to use	Freg.	65	99	58	24	16	113	51	36
	%	19.88	30.28	17.74	7.34	4.89	34.56	15.60	11.01
I have not received adequate training	Freg.	77	79	53	39	29	56	49	45
	%	23.55	24.16	16.21	11.93	8.87	17.13	14.98	13.76
It is not accessible to me	Freg.	133	86	73	13	55	96	71	98
	%	40.67	26.30	22.32	3.98	16.82	29.05	21.71	29.97

N = 327

Key: MO-Moodle; SA-Sakai; GC-Google Classroom; TE-Telegram; WA-WhatsApp; ZO-Zoom; EM-Email; TM-Text Messages

Table 5 surveyed a list of menus to determine whether users were satisfied or dissatisfied. On the "it meets my needs" menu, 71 (21.71%) of respondents believe WhatsApp meets their needs. In decreasing order of satisfaction, this number was followed by 54 (16.51%) and 52 (15.90%) for Text Messages and Email, respectively. Telegram topped the list followed by WhatsApp. Google Classroom comes in third place on the easy-to-learn list. Email, Telegram, and Google Classroom ranked first, second, and third in terms of dependability. Moodle was rated the least trustworthy tool.

The respondents also rated Telegram and WhatsApp as the most effective online tools for communicating with their tutors, with response rates of 56 (17.13%) and 37 (11.31%), respectively. Two tools came in third place at the same time, Text Message and Email. It was interesting to note that the top two tools have similar user environments and are mostly text-based. Respondents also rated Zoom, Sakai, Moodle, and Google Classroom as the four most difficult tools to use in an ordinal manner.

Respondents also stated that they did not receive training on how to use these online learning tools. Sakai was at the top of the list, with a response rate of 79 (24.16%). Moodle came in second with a response rate of 77 (23.55%).

WhatsApp had the lowest response rate on this menu. Meanwhile, respondents agreed they had received training on WhatsApp usage. According to the respondents, Moodle is the most inaccessible tool and Telegram is the most accessible tool.

Table 6. Trainee teachers' satisfaction or dissatisfaction with the quality of online teaching and learning

Variable	Frequency (%)
Very Dissatisfied	71 (22.26)
Dissatisfied	102 (31.97)
Neither Satisfied nor Dissatisfied	87 (27.27)
Satisfied	45 (14.11)
Very Satisfied	4 (1.25)
Don't Know	10 (3.13)

N = 327

In online learning, 102 (31.97%) were dissatisfied with the quality of online learning. In online learning, 71 (22.26%) respondents were extremely dissatisfied with the quality of online learning tools. This means that the total number of people who are both very dissatisfied and dissatisfied is 173 (54.23%). This means that the majority of respondents regard online learning tools as unsatisfactory. Only a small minority of 1.25% were extremely satisfied with online learning tools. Table 6 also shows that 30.40% were undecided (neither satisfied nor dissatisfied). Lack of training, weak internet connectivity, and unsteady power supply, among other things could account for the trainee teachers' dissatisfaction with the quality of online learning tools. As Gautam (2020) opined that training, a basic understanding of technology, and resources are key to success in online teaching and learning.

5. Conclusions

The study concludes that largely the trainee teachers were unfamiliar with most online teaching and learning tools, especially the Learning Management Systems (e.g. Sakai and Moodle). These LMS were created by the affiliate Universities and Colleges and came with a number of features that require training on how to use them. One of the sources of unfamiliarity is due to the lack of training of trainee teachers before commencing online classes. If the trainee teachers are not given the training on the specific features and their uses, they would not only be unable to use them but could also dissuade them from these LMS. The unfamiliar features associated with these LMS could also be a source of demotivation to trainee teachers. This underscores existing literature that a strong self-efficacy is an important determiner of higher motivation and a willingness to view difficult tasks as challenges rather than obstacles.

The study further concludes that the Telegram was the most popular and widely used online tool by tutors to conduct lessons with trainee teachers. Many of the most popular messaging programs, including Telegram and the ones we highlighted in this study, can be used to help teachers communicate with their trainee teachers effectively and stay on top of their subjects. The study found that from the online technologies evaluated, Zoom, Skype, Sakai, and Moodle recorded the highest attrition rates. Online learning necessitates that trainee teachers have a basic understanding of digital forms of learning. This is not always the case. Teachers frequently have only a rudimentary understanding of technology. Sometimes they do not even have the necessary resources and tools to hold online classes.

In conclusion, many trainee teachers were not satisfied with the quality of online teaching and learning. Online teaching and learning in the COVID-19 era are faced with challenges globally, which stakeholders are managing to cope with. Existing literature has found that there is a significant impact on how satisfied trainee teachers are with their online

learning if there is a quality of online support services. This factor favorably influenced how trainee teachers feel about their online learning.

6. Recommendations

Based on the conclusions, the study recommends that:

There is a need for proper training on the use of online learning tools for trainee teachers by the College Management.

Familiar online tools should be employed by tutors for the online tuition of trainee teachers. Using familiar and accessible online teaching and learning tools would ensure high patronage and user satisfaction by trainee teachers.

There is a need for the affiliate Universities and the College Management to ensure stable, efficient internet connectivity and power supply going forward.

There is a need for colleges of education to invest more resources in developing a robust ICT infrastructure to ensure easy accessibility and quality online teaching and learning.

Conflict of interest

The authors do declare that there is no conflict of interest.

Acknowledgements

Disclaimer

This manuscript represents the opinions of the authors which is the product of academic research, and all errors emanating from it are the fault of the authors.

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