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How well are student teachers prepared for e-learning and teaching? A case study from the University of Lagos

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Abstract

COVID-19 was declared a pandemic on 11 March 2020. Various governments introduced measures to mitigate the pandemic, including lockdown, enforced compliance with social distancing, travel restrictions, a ban on large meetings and the closure of schools. At the peak of the epidemic, learning centres and higher institutions were closed in more than 190 countries, disrupting the education of 1.6 billion students. In Nigeria, this situation forced many schools, including universities, to introduce e-learning. This study, which explores the extent to which selected students at the University of Lagos were adequately prepared for e-learning, was based on the Garrison and Anderson Community of Inquiry model. An analytical survey research design was adopted and a stratified random sampling technique was used to select 282 respondents from the University of Lagos. A validated self-developed questionnaire was used for data collection. Frequencies, percentages and means were calculated. Hypotheses were statistically tested at a 5% level of significance. The study found that the students in the Faculty of Education were to some extent prepared for the teaching mode, and they were assisted to establish social and cognitive presences to create a meaningful e-learning environment.

Keywords: Blended learning; Virtual learning; Teaching presence; Social presence; Cognitive presence; Community of Inquiry model

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Introduction

The first significant effect of the COVID-19 pandemic was the partial lockdown that was introduced in most countries to curtail the spread of the pandemic, and that grounded economic activities at both the macro and micro level (Obioma et al., 2020; Asante & Mills, 2020; Congressional Research Service, 2021). Other measures taken by various governments to curb the pandemic included enforced compliance with social distancing, travel restrictions, ban on large meetings, closure of schools (private and public), and even a total lockdown. For example, Nigeria's total lockdown lasted 35 days and was eventually gradually eased down in phases. The COVID-19 regulations changed the educational, social and economic life of billions of people all over the world (Aitokhuehi, 2021). All these measures and other pandemic factors significantly impacted our world's health, economy, education, and social environment. Individuals' everyday lives in society were seriously affected by the unprecedented demands of the pandemic.

COVID-19 and Its Impact on Education

The education sector suffered a noticeable blow due to the pandemic. The lockdown that was designed to curb the spread of the pandemic forced schools to close down. According to a United Nations report, the COVID-19 pandemic caused an unparalleled disruption of education systems in history, affecting nearly 1.6 billion learners in more than 190 countries and on all the continents. The closures of schools and other learning spaces had an impact on 94% of the world's student population, and totally disrupted up to 99% of learners and students in low-income and lower-middle-income countries (United Nations, 2020).

There was practically no preparation for the pandemic worldwide, especially in Nigeria. Schooling activities in Nigeria used to be based mainly on the face-to-face mode of learning. Its educational institutions, teachers and learners were completely unprepared for the online learning approach (Adelakun, 2020). Furthermore, due to the many uncertainties and the indecisive direction of the pandemic, many schools initially gave homework to students to keep them busy. However, as the pandemic progressed and it became evident that the virus would be with us for some time (Myhre & Sifris, 2020; Charumilind et al., 2020), different measures had to be adopted to mitigate the effects of prolonged school closure. Private schools, especially the

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high-fee and middle-fee paying ones, were for example, able to adopt online learning.

Public schools, on the other hand, were affected quite badly, because they were not prepared or equipped to operate an online programme. Some Nigerian states, the Federal government, religious institutions and non-government organisations (NGOs) tried to provide educational programmes on television and radio (Aitokhuehi, 2021). Innovative teachers in a few public schools, especially in the Lagos State, utilised WhatsApp to engage their students. Despite all the terribly adverse effects of COVID-19, it is clear – in retrospect – that the pandemic has had clear advantages and that the country can learn and utilise much out of the pandemic.

Taking Advantage of the COVID-19 Pandemic

For Nigeria, one of the positive outcomes of the COVID-19 outbreak has been the "enforcement" of virtual or e-learning in the education system and its incorporation into Nigerian schools. Virtual learning has become imperative in promoting and sustaining educational development globally, due to the disruptive effect that the COVID-19 pandemic had on the traditional modes of learning. The world currently has to deal with COVID-19, and nobody knows what other occurrences may in future lead to the disruption of the educational system in Nigeria or the entire world. The pandemic situation engendered a concerted effort to address and bridge the digital divide, and many schools were able to adapt and introduce online learning during the time of their closure. Reverting to the full face-to-face mode of learning would be injudicious and should be avoided. Blended learning should be integrated into the education system, especially at university level, to exploit the most effective aspects of the face-to-face and online learning modalities.

Blended Learning and Teacher Preparation

Blended learning is a mixture of two models, the teacher-student regular classroom setting, which is called the face-to-face mode of instruction, and online learning, which implies accessing instruction online. This blend is rather appropriate for the 21st century learner, since it is more engaging and can meet all the expectations of teaching-learning relationships. Blended learning involves mixing the best of face-to-face teaching and online learning as it allows for small group instruction, personal learning plans, guided practice and inquiry-based teaching, all of which will lead to a

better and deeper understanding of learning concepts (Rao, 2019; Lalima & Dangwal, 2017; Hockly, 2018).

Blended learning furthermore involves instruction, collaborative teaching, and individualised computer-assisted learning (Lalima & Dangwal, 2017). It also boasts a number of other features such as face-to-face teaching; student interaction with course content; peer group interaction; group discussion and exchange of ideas; accessing e-libraries and virtual classrooms; online assessment; webinars; e-tuition; viewing expert lectures on YouTube and learning through videos, audios and virtual laboratories; as well as accessing and maintaining educational blogs (Lalima & Dangwal, 2017; Mbaka & Mwenda, 2021). It is called blended learning because all the features are blended into one frame.

To summarise, blended learning involves leveraging digital content to provide students with skills and practice. The e-teacher can provide differentiated instruction to create an environment where students can get individualised and self-paced instruction. Students are also more engaged in using online content as against paper practice. Further advantages of blended learning include that students receive honest and timely feedback; students are more involved and can participate better in discussions, and students can also ask questions online. Blended learning favours differentiated instruction; it promotes collaboration and can change the nature of teaching and learning.

According to Garrison (2009) three interdependent presences are necessary to create a proper online learning environment in schools: teaching presence, social presence and cognitive presence. These three interact through climate setting, content selection and discourse support. For these interactive modes to operate, the teacher's service is necessary, and the teacher must have the required competencies (Casanova et al., 2009; Mishra et al., 2020). For online learning classes to become operational, the teacher has to set optimal class sizes for online teaching, design online course materials using multiple strategies, make teaching more attractive to the student, and build an engaging experience (use pop-up questions, etc.). The teacher must also assist unresponsive and slow learners in e-classes, cultivate a sense of community among the students, establish and reiterate routines, educate students about plagiarism, acknowledge student accomplishments, appraise students' learnings through online tests, and ensure sound teacher-learner relationships in online classes. Therefore, rather than having diminished the teacher's relevance, adopting online learning has increased it.

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The question that needs to be asked is whether just any teacher can function as an online learning facilitator? Online learning facilitation requires specialised skills, which are paramount for successful facilitation. Such specialised online facilitation skills include pedagogical, content, design, and technological skills. Other requirements are related to management and institutional skills, as well as social and communication skills, all of which require specialised training and a period of acclimatisation. Teachers who are in training must be prepared to take on this new challenge.

Thus, the integration of blended learning has become paramount to teacher preparation in the faculties of education nationwide and worldwide. The probability of expecting prospective teachers to be IT compliant and able to handle online teaching is constantly increasing. Prospective teachers will eventually be required to display their online facilitation competence right from the interview stage.

The Problem

The emergence of COVID-19 and its attendant consequences compelled schools to find innovative learning approaches that can cope with the demands of all unforeseen circumstances. A possible way of doing this has been to adopt technology into the learning system. The University of Lagos was one of the institutions in Nigeria that took advantage of schools' lockdown due to the COVID-19 pandemic to introduce online learning. Lectures as well as examinations were conducted online. This development served as a great and timeous opportunity for students in the Faculty of Education – especially those in the core teaching departments – to be prepared for their future role as online learning facilitators.

Nevertheless, the crucial questions that this study endeavoured to answer are:

- As prospective teachers, will their exposure to online learning equip them with sufficient skills that will enable them to handle online learning in their future schools?
- Does their online learning environment have a sufficient teaching, social and cognitive presence to stimulate their skills development as online learning facilitators?

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Theoretical Framework of the Study

The current study is based on the Community of Inquiry (CoI) model developed by Garrison et al. (2000). This model facilitates research within online learning environments by eliciting educational experience through the establishment of teaching, social and cognitive presences when designing and delivering online courses. The model is based on John Dewey's educational philosophy and postulates that learning is produced by forming an inquiry-based educational community (Czujko-Moszyk, 2014). According to Dewey, inquiry leads to a better educational experience for a community of students and teachers. Dewey also acknowledged that learning was a social activity and argued that students need to take responsibility for their learning by understanding their own educational experiences (known as constructivist learning). Participants of inquiry-based learning collaboratively engage in activities stemming from the interdependent elements of teaching presence, social presence and cognitive presence to construct a worthwhile community learning. The CoI model is depicted below:

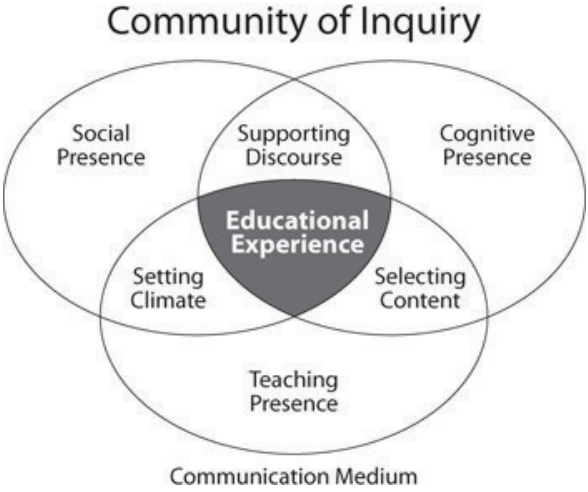

Figure 1: Community of Inquiry model
Source: Garrison et al., 2000

The three presences – teaching, social and cognitive – work together to create a community that fosters critical thinking and promotes learning for students (Rehm et al., 2013). The activities involved include selecting suitable content (combining the cognitive and teaching presences), setting the climate (combining the social and teaching presences), and supporting discourse (combining the social and cognitive presences).

This study is based on the CoI model and presumes that any prospective online learning facilitator should be adequately integrated into the three presences and well acquainted with the required activities. The level of integration of the principles of Community of Inquiry into the online learning programme offered at the University of Lagos determines to a large extent the expertise that students will display as online learning facilitators in the future.

Research Questions

The main research question that guided the current study was formulated as follows: *How well are student teachers prepared for e-learning and teaching at the University of Lagos?*

The main research question was further explored by the following three research sub-questions:

1. To what extent were teaching presence, social presence and cognitive presence provided to students in online teaching offered by the Faculty of Education at the University of Lagos?
2. To what extent were the Faculty of Education students actively engaged in teaching, social and cognitive presence during the online teaching offered at the University of Lagos?
3. How much has the knowledge gained during online teaching prepared the Faculty of Education students for future online teaching?

Research Hypotheses

There is no significant relationship between the engagement of education students and the online teaching offered by a specific department in the University of Lagos.

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There is no significant relationship between students' preparedness to conduct future online teaching and the various departments in the Faculty of Education.

Research Methodology

A descriptive survey design was adopted for the study. The study population comprised all the Faculty of Education students at the 300 and 400 level in the Department of Arts & Social Sciences Education, the Department of Human Kinetics and Health Education, and the Department of Science and Technology Education, totalling 2548 students. Stratified random sampling was used as the technique to identify 282 respondents, and the instrument for data collection was the questionnaire.

A self-developed 29-item Likert scale questionnaire adapted from the Community of Inquiry Survey Instrument (draft v14) and with a response scale of Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) and Undecided (U) as options was used. Respondents were required to tick [√] the appropriate column corresponding to the degree to which they agree or disagree with statements made in the questionnaire. To ensure the instrument's validity, the questionnaire was given to different experts from related departments such as Statistics and Educational Foundations for vetting and scrutiny prior to sending it to the field as a pilot study for assessment. This was done to ascertain the face and content validity of the instrument. The experts' comments, modifications and suggestions assisted the researcher in adapting the instrument before being used in the main study.

A preliminary study was conducted to try the instrument out before the main study. Forty respondents were selected from the general population to respond to the research questions (these respondents were not included in the main study sample). The observations made from their responses were used to validate and improve the instruments and data collection process. A reliability test was carried out using Cronbach's alpha. The result of the test gave a reliability coefficient of 0.86, indicating very good internal consistency. A Google form was created to administer the questionnaire to the learners, and the link was sent to the selected students via WhatsApp. Responses were also received electronically from the Google form. Each questionnaire was accompanied by an introductory letter stating the purpose of the study and seeking the cooperation of the respondents. The data collected was analysed using descriptive statistics. The research questions were analysed using percentages,

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frequency distributions and means. Chi-square was used to test the hypotheses. A 5% significance level was used. Informed consent was obtained from all participants, and there was no risk of harm to any of the participants.

Results and Discussion of Findings

Three research sub-questions explored in more detail the extent to which student teachers were prepared for e-learning and teaching at the University of Lagos.

Sub-question 1 explored the extent to which teaching presence, social presence and cognitive presence were established in online teaching at the Faculty of Education of the University of Lagos. The results presented in Table 1 are based on the analysis of the data collected in respect of students' experience of teaching presence.

Table 1: Sub-Question 1a – Establishment of Teaching Presence

	4	3	2	1	0	
	SA (%)	A (%)	D (%)	SD (%)	U (%)	Weighted mean
The University gave us adequate information on the online learning process.	8.9	42.9	23.8	11.0	13.5	2.2
Training was provided for us before online teaching started.	2.8	12.1	39.4	28.0	17.7	1.5
The lecturers communicated important due dates for assignments and other learning activities to us.	16.3	51.4	11.0	6.0	15.2	2.5
The lecturers documented important lesson objectives.	8.9	45.7	18.8	9.2	17.4	2.2
The lecturers provided instructions on how to participate in course learning activities.	8.9	38.3	25.2	11.0	16.7	2.1
The lecturers helped guide the classes toward understanding course topics in a way that helped me think clearly.	10.6	35.5	25.5	6.7	21.6	2.1
The lecturers helped keep the students engaged and participate in productive class discussions.	9.2	41.1	22.7	9.6	17.4	2.2
The lecturers helped keep the students on task in a way that helped me learn.	7.4	42.6	19.1	11.0	19.9	2.1
The lecturers' actions reinforced the development of a sense of community among us as students.	9.9	37.6	19.9	9.9	22.7	2.0

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The lecturers helped to focus discussions on relevant issues in a way that helped me learn.	11.0	46.5	13.1	7.8	21.6	2.2
The lecturers provided responses that helped me to learn.	9.2	52.1	14.5	8.5	15.6	2.3
The lecturers provided feedback that helped me understand my strengths and weaknesses.	5.7	40.1	23.4	12.4	18.4	2.0
The lecturers provided feedback relevant to the topic of discussion.	9.2	45.4	16.7	10.3	18.4	2.2
Grand mean	**9.1**	**40.9**	**21.0**	**10.9**	**18.2**	**2.12**

As indicated above, Table 1 reflects data from the questionnaire on the establishment of teaching presence during online teaching. It shows that a mean of 9.1% of respondents strongly agreed that teaching presence had been provided, 40.9% agreed, 21.0% disagreed, 10.9% strongly disagreed, and 18.2% were undecided. Altogether, over 50.0% of the respondents agreed that teaching presence had been established during the online teaching. With a weighted average of 2.1, it could be concluded that teaching presence had to *some extent* been provided during the online teaching.

Table 2: Sub-Question 1b – Establishment of Social Presence						
	4	3	2	1	0	
	SA (%)	A (%)	D (%)	SD (%)	U (%)	Weighted mean
I was able to relate with my mates closely.	14.5	40.8	21.6	8.5	14.5	2.3
I found online communication to be an excellent medium for social interaction.	13.5	33.7	24.1	14.2	14.5	2.2
I felt comfortable conversing through the online medium.	15.2	38.7	20.2	8.2	17.7	2.3
I felt comfortable participating in the online discussions.	17.7	35.5	20.2	9.6	17.0	2.3
I felt comfortable interacting with my course mates online.	16.7	40.4	17.0	10.6	15.2	2.3
My disagreement with my mates during online discussions did not affect our relationship.	16.0	52.8	5.0	6.7	19.5	2.4
I felt that other members of the class acknowledged my point of view.	11.0	50.4	12.1	6.7	19.9	2.3

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Online discussions helped me to develop a sense of collaboration.	13.5	45.7	15.2	8.5	17.0	2.3
Grand mean	**14.8**	**42.2**	**16.9**	**9.1**	**16.9**	**2.29**

Table 2 reflects data from the questionnaire on the establishment of social presence during online teaching. It shows that a mean of 14.8% of respondents strongly agreed that social presence had been provided, 42.2% agreed, 16.9% disagreed, 9.1% strongly disagreed, and 16.9% were undecided. Altogether 57.0% of the respondents agreed that social presence had been established during the online teaching, and with a weighted average of 2.29, it could be concluded that social presence had *to some extent* been provided during the online teaching.

Table 3: Sub-Question 1c – Establishment of Cognitive Presence

	4	3	2	1	0	
	SA (%)	A (%)	D (%)	SD (%)	U (%)	Weighted mean
Questions raised in the discussion during online classes increased my interest in the courses I offered online.	8.9	45.0	17.0	7.4	21.6	2.1
Homework given and practised increased my interest in the courses I offered online.	8.5	45.4	17.4	7.8	20.9	2.1
The video lectures increased my interest in the courses I took.	8.9	33.7	21.3	13.5	22.7	1.9
I made use of a variety of information sources to explore problems encountered in the courses.	18.1	57.8	5.7	5.7	12.8	2.6
Brainstorming and finding relevant information helped me resolve questions related to the content of the courses.	18.4	54.3	5.3	6.7	15.2	2.5
Online discussions were valuable in helping me appreciate the different perspectives of the courses.	12.4	50.4	10.6	8.9	17.7	2.3

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Applying what I learned and combining new information helped me answer questions posed in the courses.	25.5	51.8	7.4	7.1	8.2	2.8
Learning activities during online classes helped me construct explanations/solutions.	18.8	44.7	14.2	7.8	14.5	2.5
Reflection on course content and discussions helped me understand fundamental concepts in the classes.	18.4	51.4	8.2	8.9	13.1	2.5
Based on what I gained in each of the courses I took, I can describe ways to apply the knowledge I created.	11.7	49.3	9.6	6.0	23.4	2.2
I can apply it the knowledge gained in the online courses to teach an online class.	10.6	46.1	17.0	7.1	19.1	2.2
I can apply the knowledge gained in my courses when I become a practising teacher.	16.7	51.8	7.4	6.7	17.4	2.4
Grand mean	**14.7**	**48.5**	**11.8**	**7.8**	**17.2**	**2.36**

The results in Table 3 are based on data from the questionnaire dealing with the degree to which facilitators managed to establish cognitive presence during online teaching. It shows that a mean of 14.7% of respondents strongly agreed that cognitive presence had been established, 48.5% agreed, 11.8% disagreed, 7.8% strongly disagreed, and 17.2% were undecided. Altogether, the majority or 63.2% of the respondents agreed that the facilitators had provided cognitive presence during the online teaching. With a weighted average of 2.36, it could therefore be concluded that cognitive presence had *to some extent* been provided during the online teaching.

Sub-question 2 explored the extent to which the Faculty of Education students actively engaged in teaching presence, social presence and cognitive presence during the online teaching offered at the University of Lagos. The results presented in Table 4 are based on the analysis of the data collected in respect of students' experience.

Table 4: Sub-Question 2 – Facilitation of Online Engagement						
	4	3	2	1	0	
	SA (%)	A (%)	D (%)	SD (%)	U (%)	Weighted mean

The lecturers helped guide the classes toward understanding course topics in a way that helped me think clearly.	10.6	35.5	25.5	6.7	21.6	2.1
The lecturers helped to keep the students engaged and participate in productive class discussions.	9.2	41.1	22.7	9.6	17.4	2.2
The lecturers helped in keeping the students on task in a way that helped me to learn.	7.4	42.6	19.1	11.0	19.9	2.1
The lecturers' actions reinforced the development of a sense of community among the students.	9.9	37.6	19.9	9.9	22.7	2.0
Grand mean	**9.3**	**39.2**	**21.8**	**9.3**	**20.4**	**2.1**

Table 4 is based on data from the questionnaire on students' level of engagement during the online teachings. It shows that a mean of 9.3% of respondents strongly agreed that they had been engaged, 39.2% agreed, 21.8% disagreed, 9.3% strongly disagreed, and 20.4% were undecided. Altogether, 48.5% of the respondents agreed that they had been kept engaged by the facilitators during the online teaching. With a weighted average of 2.1, it could be concluded that students had been kept engaged *to some extent* during online teaching.

Sub-question 3 explored the extent to which the knowledge gained during online teaching had prepared the Faculty of Education students for future online teaching.

Table 5: Sub-Question 3 – Preparation for Future Online Teaching; Cognitive Integration & Resolution

	4	3	2	1	0	
	SA` (%)	A (%)	D (%)	SD (%)	U (%)	Weighted mean
Applying what I learned and combining new information helped me answer questions posed in the courses.	25.5	51.8	7.4	7.1	8.2	2.8
Learning activities during online classes helped me construct explanations/solutions.	18.8	44.7	14.2	7.8	14.5	2.5

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Reflection on course content and discussions helped me understand fundamental concepts in the classes.	18.4	51.4	8.2	8.9	13.1	2.5
Based on what I gained in each of the courses I took, I can describe ways to apply the knowledge created by each of the courses.	11.7	49.3	9.6	6.0	23.4	2.2
I can apply the knowledge gained in the online courses to teach an online class.	10.6	46.1	17.0	7.1	19.1	2.2
I can apply the knowledge gained in the courses taken when I become a practising teacher.	16.7	51.8	7.4	6.7	17.4	2.4
Grand mean	**17.0**	**49.2**	**10.6**	**7.3**	**16.0**	**2.44**

Table 5 reflects data from the questionnaire on students' preparedness to conduct future online teaching. It shows that 17.0% of respondents strongly agreed that they had been prepared, 49.2% agreed, 10.6% disagreed, 7.3% strongly disagreed, and 16.0% were undecided. Altogether, a majority or 66.2% of the respondents agreed that online teaching had prepared them to conduct future online teaching themselves. With a weighted average of 2.4, it could be concluded that students had *to some extent* been prepared by the online teaching to conduct online classes by themselves in future.

Research Hypothesis I

There is no significant relationship between the engagement of education students and the online teaching offered by facilitators of the University of Lagos and its various departments.

Table 6: Chi-Square Contingency Table – Engagement of Education Students with the Different Departments

	Observed Frequency / Engagement Score					
Education departments	Undecided	Not engaged	Slightly engaged	Fairly engaged	Well engaged	Total

Arts & Social Sciences Education	10	8	27	48	18	111
Human Kinetics & Health Education	5	10	19	11	1	46
Science & Technology Education	8	20	35	43	19	125
Total	23	38	81	102	38	282
	Expected Frequency					
Arts & Social Sciences Education	9	15	32	40	15	111
Human Kinetics & Health Education	4	6	13	17	6	46
Science & Technology Education	10	17	36	45	17	125
Total	**23**	**38**	**81**	**102**	**38**	**282**
p-value	0.01					
DF	8					
X2 statistic	19.26					
X2crit	15.51					
Result: X2 (8, N = 282) = 19.26, p< 0.05						
Conclusion: Reject the null hypothesis since X2 is greater than the critical value.						

Table 6 presents the contingency table for the chi-square analysis of the various education departments' level of engagement of education students in online teaching. Based on the result X2 (8, N=282) = 19.26, $p < 0.05$, the null hypothesis had to be rejected, as the study indicated that students' engagement during the online teaching was dependent on or had a significant relationship with specific departments at the University of Lagos. In other words, how engaged the students appeared, depended on the type of or the nature of the department. A review of the observed response frequency of the contingency table data showed that the Arts & Social Sciences Education department students were more engaged (fairly engaged plus well engaged) compared to the other departments.

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Research Hypothesis 2

There is no significant relationship between students' preparedness to conduct future online teaching and their involvement with a specific department in the Faculty of Education.

Table 7: Chi-Square Contingency Table – Relationship between Students' Preparedness to conduct Online Teaching and the E-Learning offered by Different Education Departments

	Observed Frequency / Students' Preparedness Score					
Education Departments	Undecided	Not prepared	Slightly prepared	Fairly prepared	Well prepared	Total
Arts & Social Sciences Education	5	19	18	47	22	111
Human Kinetics & Health Education	1	9	10	19	7	46
Science & Technology Education	5	21	30	45	24	125
Total	**11**	**49**	**58**	**111**	**53**	**282**
	Expected Frequency					
Arts & Social Sciences Education	4	19	23	44	21	111
Human Kinetics & Health Education	2	8	9	18	9	46
Science & Technology Education	5	22	26	49	23	125
Total	11	49	58	111	53	282
p-value	0.91					
DF	8					
X2 statistic	3.42					
X2crit	15.51					

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Result: X2 (8, N = 282) = 3.42, p> 0.05						
Conclusion: Do not reject the null hypothesis since X2 is less than the critical value.						

Table 7 presents the contingency table for the chi-square analysis of the relationship between education students' preparedness to conduct future online teaching and the e-learning offered by the various education departments. Based on the result, X2 (8, N=282) = 3.42, p > 0.05, we failed to reject the null hypothesis. This indicated that students' preparedness was independent of their departments at the University of Lagos. In other words, the students' preparedness response distribution or profile for all the departments were similar and could not be related to the department in which the student had been enrolled.

Discussion of Findings

The study sought to explore the extent to which education students in the Faculty of Education at the University of Lagos were adequately prepared for e-learning and teaching. Results from the study indicated that a teaching presence, social presence and cognitive presence was established in the online classes to some extent. Each of the presences could be categorised as being provided but had to be improved upon.

The findings firstly showed that teaching presence was provided to some extent in online teaching. Citing various opinions such as those of Garrison et al. (2000), Garrison (2009), Garrison (2017), Shea et al. (2006) and Damm (2016), affirms consensus on the finding that teaching presence is a significant determinant of student satisfaction, perceived learning and sense of community. It was therefore concluded that teaching presence plays a significant role in online learning. Suppose the saying that *what you do not have, you cannot give* is correct. In that case, the education students at the University of Lagos may not be able to create adequate teaching presence in online learning facilitation in the future, unless they undergo special training. However, the introduction of online learning already at school level will significantly prepare them to become future learning facilitators as this will establish a knowledge foundation for them.

Secondly, the study indicated that social presence was provided to some extent

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in the University of Lagos' online teaching. The COVID-19 pandemic seriously influenced the way students interact, and learning situations should therefore factor in ways of improving social interaction in the post-pandemic era (Zhao & Watterston, 2021). Garrison et al. (2000) posit that social presence in a community of inquiry must create personal but purposeful relationships. In this respect, the limited social presence provided in the online learning of Faculty of Education students probably did not pose a problem, because students had previously been involved in face-to-face contact, which would have given them ample opportunity for social interaction. The adoption of dual-mode learning could further encourage social presence. However, the challenge of transferring the social presence knowledge gained in a face-to-face environment to the online learning setting could be a problem.

The study findings thirdly indicate that cognitive presence was provided to some extent in online teaching at the University of Lagos. Students felt they were at least partly prepared to conduct future online teaching themselves. According to Garrison et al. (2000) cognitive presence is defined as a cycle of practical inquiry where participants move deliberately from understanding the problem or issue, through the exploration, to integration and application. This view is corroborated by Makri et al. (2014) and what is revealed consistently in the research findings is that it appears that inquiry invariably has great difficulty moving beyond the exploration phase. Garrison (2007) and Garrison et al. (2000) concluded that discussions do not reach the highest levels of inquiry and are strictly related to the role of the instructor. These assertions point to the crucial role of the online learning facilitator in establishing a cognitive presence in an online class. Therefore, it may not be enough for prospective facilitators to be superficially exposed to cognitive presence during their training to develop sufficient capacity for future application. Any student teacher who facilitates online learning must understand the notion of cognitive presence in order to move learners from exploration to application.

This study indicates that students felt they were at least partly prepared for future online teaching themselves. This finding is corroborated by the study by Scherer et al. (2020) who insisted that teachers who will be involved in online teaching must be well prepared. This will give them confidence and a basis from which to improve when they become facilitators. However, a follow-up study will be needed to ascertain the extent to which this manifests in practice. If the future online facilitators are exposed to minimal cognitive presence during their studentship, follow-up research will be

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required to help determine the level at which such presence is displayed in practice.

Conclusion and Recommendations

The study showed that adaptations to improve future online facilitation by Faculty of Education students are not necessarily department-based; students were able to develop the capacity irrespective of the department in which they were taught. It would therefore be important not to discontinue the hybrid process of learning that had been introduced at the University of Lagos so as to further enhance student teachers' ability to facilitate online classes.

In view of the results above, the following recommendations are made:

1. The teaching, social and cognitive presences should be made explicit in future e-learning provisions. Teachers should be made aware of the Community of Inquiry model, asked to evaluate the extent to which it has been modelled in practice and then to reflect on their sense of preparedness.
2. Facilitators in the University system should enhance inclusive, participatory online discussions to keep their students highly engaged in the classroom.
3. The University of Lagos and other higher institutions should improve on their mode of instruction considering the 'new normal' situation.

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