

# PRE-SERVICE TEACHERS' PERCEPTION OF ONLINE LEARNING IMPLEMENTATION IN TEACHER EDUCATION DURING COVID-19 PANDEMIC

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## Abstract

*During the Covid-19 pandemic, online learning was generally adopted at all levels of education in Nigeria to ensure that learning was not hindered as a result of lockdown. The study investigated pre-service teachers' perception of online learning implementation in teacher education during Covid-19 pandemic. The descriptive survey research design was adopted for the study. 450 pre-service teachers were purposively drawn from Alvan Ikoku Federal College of Education Owerri for the study. This included 300 females and 150 males. The instrument for data collection was a 4-points Likert type questionnaire titled "Pre-service Teachers Perception of Online learning during Covid-19 Pandemic (PTPOLC-19P)". The instrument had Cronbach's alpha reliability coefficient of 0.83. The instrument was administered on face-to-face basis. The result of the study revealed that, Zoom, WhatsApp and Google classroom were mostly used for online learning during the Covid-19 pandemic. The result also indicated that pre-service teachers had moderate positive perception of online learning implementation in teacher education during Covid-19 pandemic. Based on the result, it was recommended that lecturers and students should to be trained on the use of various Learning Management System platforms for online learning.*

**Keywords:** Pre-service teachers, online learning, teacher education, Covid-19.

## Introduction

The better part of the year 2020 in Nigeria like other nations of the world was associated with health crisis as a result of the outbreak of the novel Covid-19 disease which resulted in a pandemic. The scourge affected the economic state of most nations resulting in abrupt stoppage of businesses such as sports, aviation, markets, schools, and other social activities. To curb the spread of the virus, the Nigerian Government introduced nation-wide social distancing and lockdown of various sectors of the economy. The higher education institutions experienced disrupted academic activities which left attendant consequences on the students. According to Nwoke, Nwaneri, Alachi and Mba (2021) in Nigeria, the covid-19 lockdown exposed the weakness associated with the education system, as the usual classroom

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face-to-face teaching and learning totally failed due to social distancing which was the only visible strategy to avert the spread of the virus.

To mitigate the loss of teaching and learning time in pre-service teacher education due to the lockdown imposed by the nation to curtail the spread of the pandemic, many teacher training institutions resorted to online modes of teaching and learning. Online learning was considered to be the appropriate alternative to allow learning to continue during the COVID-19 pandemic even though this choice was made in an emergency and unexpected circumstances. This change in learning mode left both students and lecturers in a helpless state as they were not prepared for the sudden switch in the learning mode. However, the teachers and learners in these institutions of learning reluctantly adjusted to the new instructional mode.

According to Kharve and Gogia (2016), online learning or e-learning is a process of learning by electronic means which involves the use of computer, mobile phone or other electronic devices and accessing the Internet. According to Singh and Thurman (2019), online teaching and learning is defined as learning experiences in synchronous or asynchronous environments using different devices such as mobile phones, laptops, etc. with Internet access. Naah (2020) defined online teaching and learning as a form of education that uses the Internet to convey some form of instruction to a learner or the learners separated by time and or distance. Online learning is seen as an alternative form of learning that is entirely dependent on the use of the Internet and some other important technologies with no physical recourse to classrooms between the students and the lecturers (Tamrat & Teferra, 2020). Olayemi, Adamu and Olayemi (2020) noted that there are two types of online learning; the synchronous and the asynchronous online learning. The synchronous interactive online learning is one where learners meet in real time. This type of learning depends entirely on Internet-based resources and support systems through which anybody with connectivity can access anywhere and learn. Asynchronous online-learning on the other hand, involves interactive sessions where participants interact at different times. Some of the most popular online communication platforms that would change the destination and direction of the whole education system across the world in the COVID-19 circumstances are Start.me, Neo, Class time, Classwize, Ted-Ed, Zoom, Coursera, Google Classroom, Bakpax, Pronto, Skillshare, ClassDojo, Edmodo, Blackboard Learn, Parlay, Docebo, Feedback Fruits, Udemy, WeVideo, WizIQ, Flipgrid, Codeacademy, Gynzy, Adobe Captivate, Seesaw, Edx, GoGuardian, Elucidat, Kami, Pluralsight, G Suite, Otus, Articulate 360, Floop, Future Learn, Hapara, Shift, Lectora Inspire, Kialo Edu, Buncee, LanSchool and many more (Mishra, Gupta, & Shree, 2020).

Online learning is learner-centered, very innovative and offers flexible learning. Online learning enables the learner to have access to education anywhere and anytime provided Internet facilities are duly available. One can have access to quality education whenever and wherever you want to, as long as you have access to an Internet-enabled computer. Online education is flexible, it enables the teacher and the learner to set their own learning pace, and there is the added flexibility of setting a

schedule that fits everyone's agenda and allows for a better balance of work and studies (Naah, 2020). Online learning has been described as personalized and self-organized because of control over content, learning sequence, pace of learning, time, and media, factors that allow learners to tailor experiences to meet learning objectives and manage access to materials (Olojo, Adewumi, & Ajisola, 2012). According to Tamta and Ansari (2017), and Rasouli, Rahbania and Attaran (2016), the idea behind adopting online learning is that it provides great flexibility in teaching methodology, content management, a synchronous and asynchronous interaction between teachers' and students' organization and structure of courses. In addition, it provides distance learning that is capable of creating new learning environments to achieve prosperous academic program as well as tools for students to be in contact with peers and teachers inside and outside the classroom without spreading Covid-19.

Ogbonnaya, Awoniyi and Matabane (2020) stated that enrolments for online learning expanded rapidly in higher education in the last two decades as the online mode of learning appeals to a diverse population of students with different needs that traditional face-to-face classes are incapable of meeting. The ability to self-regulate one's learning is critical in online learning as self-regulation allows students to use various metacognitive and cognitive strategies to accomplish learning objectives and goals. Online education offers a wide selection of programs. It is easily accessible; one can study or teach from anywhere in the world without the need to travel or follow a rigid schedule. It allows for a customized learning experience (Josep, 2020). There's often access to very diverse material such as videos, photos, and eBooks online as well, and tutors can also integrate other formats like forums or discussions to improve their lessons (Naah, 2020). For pre-service teachers who are prospective teachers, the adjustment to online learning during Covid-19 provided an avenue to access, create, and recreate their learning contents, opportunities, and environments upon which to interact outside the institutional learning system. Online learning can also broaden the range of courses available to students, especially for students living in rural or inner cities.

Moore in Tarihorana, Syafurib, and Masykurc (2021) noted that, there are three interactions that are essential in effective online courses (1) learner-to-learner interaction, (2) learner-to-instructor interaction and (3) learner-to-content interaction. Cheung and Cable (2017) identified and described eight principles that stand at the core of effective online teaching, they are: encouraging contact between students and faculty, collaborative learning, quick feedback, active learning, task time—encouraging students to allocate more time for completing tasks, high-expectations—the teacher should communicate their expectations in order to encourage and motivate students, diversified learning, and technology application. According to Stern (n.d) some of the main advantages of online learning include:

- I) Convenience: unlimited access from any Internet-enabled computer; accommodates busy schedules; no commuting, no searching for parking.
- (ii) Enhanced Learning: Research shows increased depth of understanding and

- retention of course content; more meaningful discussions; emphasis on writing skills, technology skills, and life skills like time management, independence, and self-discipline.
- (iii) Leveling of the Playing Field: Students can take more time to think and reflect before communicating; shy students tend to thrive online; anonymity of the online environment.
  - (iv) Interaction: Increased student-to-teacher and student-to-student interaction and discussion; a more student-centered learning environment; less passive listening and more active learning; a greater sense of connectedness, synergy.
  - (v) Innovative Teaching: Student-centered approaches; increased variety and creativity of learning activities; address different learning styles; changes and improvements can translate to on-ground courses as well.
  - (vi) Improved Administration: Time to examine student work more thoroughly; ability to document and record online interactions; ability to manage grading online.
  - (vii) Savings: Accommodate more students; increased student satisfaction resulting in higher retention and fewer repeats.
  - (viii) Maximizing of Physical Resources: Less demand on limited campus infrastructure; decrease congestion on campus and parking lots.
  - (vii) Outreach: Give students options; reach new student markets; appeal to current students thus increasing enrollments.

In spite of the benefits of online learning in pre-service teachers' education, a lot of challenges are also witnessed with the mode of learning which makes it problematic for them to adapt to the new approach. Olayemi, Adamu and Olayemi (2021) noted that online learning depends critically on electronic devices and effective library system with online resources with seamless access from across the globe. In most developing countries, learning is mostly done traditionally (face-to-face), thus adapting to online learning would require certain behavioral changes and regulatory directives in order to make it work for the learners and teachers. In our national context, most pre-service teachers live in remote areas with limited access to the Internet, thus making it difficult for them to link up with this mode of learning. Also, most pre-service teachers and lecturers are not technologically competent to handle the online learning mode. Online learning can only be effective where there is adequate support system. For such support to be sustainable, both students and facilitators must have seamless access to electronic devices, the Internet, as well as the required skills to navigate the platform (Olayemi, Adamu & Olayemi, 2021).

Plaisance (2018) stated that in online classes, teachers' ability to check learners' comprehension through visual indicators is quite limited. For example, even in a synchronous, teleconference session, some students may prefer to attend classes without video, making teachers unable to see their facial expressions, let alone asynchronous session in which learners do tasks on a Learning Management System (LMS). Traxler (2018) noted that the absence of quality interaction when learning online can negatively affect some aspects of learning, as social and emotional aspects of learning are as important as technical information. Dhawan

(2020) stated that some of the challenges associated with online teaching and learning include, accessibility, affordability, flexibility, learning pedagogy, life-long learning, and policy.

Considering the benefits and issues associated with online learning, the pre-service teachers' perceptions become a considerable factor in the success of online teaching and learning mode in the wake of Covid-19 pandemic. According to Olayemi et al. (2021) Perception is very important in understanding human behavior because every person perceives the world and approaches life's problems differently. Individuals behave on the basis of their perception, as such one can predict their behavior in the changed circumstances by understanding their present perception of a phenomenon. Olayemi, et al (2021) investigated students' perception of online learning during the Covid-19 pandemic in Poland. The result shows that majority of the students had never experienced any form of e-learning. Abbasi, Ayoob, Malik and Memon (2020) in their study indicated that majority of the students had negative perceptions towards e-learning. Vitoria, Mislinawati, and Nurmasiyah (2018) focusing on students' perception on the implementation and integration of E-learning platforms, revealed that all students were of the belief that the E-learning module they took was useful and easy to use, stating that they understood information, and navigated and accessed documents effortlessly. Saleh, Sari and Alim (2021) in a study indicated positive perception among students as they expect that the implementation of online learning will be better through providing interesting learning-teaching videos, fun learning strategies to stop boredom and a drop in enthusiasm for learning, quizzes as self-evaluation material, and more lecture notifications to remind assignments. Mishra, Gupta and Shree (2020) stated that as far as students' perception on online teaching-learning, they opined that online learning process during the time of COVID-19 had helped them keep in touch with their lessons outside the four walls of the classroom. Some students reported a lack of interest and attention during the online classes as they were not accustomed to learning with smartphones and computers.

Gender is one of the factors that impact on perception of pre-service teachers with regards to online implementation. Tsai and Tsai (2010) indicated that male students were significantly more comfortable with computers than females, and that males had significantly higher Internet use intensity than females. However, in their study, females were found to be more communication-oriented Internet users, seeking interaction with others, while males were more exploration oriented in their use. Ashong and Commander (2012) in their study found that female students had positive perception towards online usage than male students. González-Gómez, Guardiola, Rodríguez and Alonso (2012) indicated that female students tend to find online learning more social and beneficial than male students do, and they had been found to display a higher degree of satisfaction than male students with online learning. Johnson (2011) found that females perceived greater social presence in online learning, performed better, and were more satisfied with the experience than males.

The outbreak of Covid-19 pandemic and subsequent lockdown resulted in

the shift in pedagogical approach in some educational institutions in Nigeria. The situation also exposed the level of readiness of our education institutions to adopt the new mode of learning which is online learning. Mishra, et al. (2020) stated that it is a well-established assumption that no pedagogical approach can replace the peak position of formal education due to having teacher-taught direct interaction. But, in the wake of COVID-19 crisis, online education became a pedagogical shift from traditional method to the modern approach of teaching-learning. The success or failure of implementation of online learning in teacher training institutions highly depends on the perception of the pre-service teachers. Many literatures abound on the benefits and challenges of online learning in higher education during the Covid-19 pandemic. However, there has been no study investigating pre-service teachers' perception of online learning implementation in teacher training institutions in Imo state to the knowledge of the researchers.

Therefore, this study was carried out to investigate the perception of pre-service teachers on the implementation of online learning in teacher education as they will play important role in the use of this innovative pedagogy during and after Covid-19 pandemic. The main purpose of the present study was to investigate pre-service teachers' perception of the implementation of online learning in teacher training institutions during Covid-19 pandemic. Specifically, the study determined:

1. The perception of pre-service teachers towards implementation of online learning mode during Covid-19 pandemic.
2. Online learning platforms implemented in teacher education during Covid-19 pandemic.
3. Whether pre-service teachers' perception of online learning mode implementation during Covid-19 pandemic is gender dependent.

### **Research Questions**

The following research questions were posited to guide the study;

1. What is the perception of pre-service teachers towards implementation of online learning mode during Covid-19 pandemic?
2. What are the online learning platforms implemented in pre-service teachers' education during Covid-19 pandemic?
3. What is the difference between the mean response of male and female pre-service teachers on their perception towards the implementation of online learning mode during Covid-19 pandemic?

### **Hypothesis**

Pre-service teachers' perception of online learning mode implementation during Covid -19 is not gender dependent.

### **Methodology**

The descriptive survey research design was adopted in the present study to investigate pre-service teachers' perception of online learning implementation in teacher education during Covid-19 pandemic. The population of the study consisted

seven hundred and fifteen (715) 400-level pre-service teachers of Alvan Ikoku Federal College of Education, Owerri Imo State out of which a sample of four hundred and fifty (450) were drawn using purposive sampling technique. This consisted three hundred (300) females and one hundred and fifty (150) males. The instrument for data collection was a researcher-developed 4-points Likert type questionnaire titled “Pre-service Teachers Perception of Online learning during Covid-19 Pandemic (PTPOLC-19P)”. The instrument was divided into two parts; part A sought for the demographic variables of the respondents while part B dealt with items related to the objectives of the study. The instrument was validated by an expert in measurement and evaluation and two experts in teacher education from the School of Education, Alvan Ikoku Federal College of Education Owerri. Their expert judgement guided the restructuring of the instrument where necessary. The reliability of the instrument was determined using Cronbach's alpha formula and this gave a reliability coefficient of 0.83 which was acceptable for the study. The instrument was administered on the respondents on face-to-face basis by the researchers. The respondents were allowed to fill and return the instruments on the spot, the entire exercise lasted for a week. The data generated was analyzed using mean and standard deviation to answer the research questions. Any response mean within and above the criterion mean of 2.50 out of 4 points was accepted while any below was rejected. The hypothesis was tested at .05 level of significance using t-test statistical tool.

## **Results**

**Research Question One:** What is the perception of pre-service teachers towards implementation of online learning mode during Covid-19 pandemic?

**Table 1:** Summary of pre-service teachers' responses on online learning

S/N	Item	Males		Females		Remark
		Mean	SD	Mean	SD	
1	Online learning is interesting	3.12	0.93	3.01	1.03	Accept
2	I prefer online learning to face-to-face learning	2.96	1.10	3.11	1.00	“
3	Online learning saves me the stress of going for classroom learning	3.32	0.86	3.25	0.91	“
4	Online learning enhances my understanding of concepts.	2.68	1.25	2.73	1.30	“
5	I have wide access to learning materials in online learning mode	3.10	1.02	3.14	0.95	“
6	Online learning helps me interact with my colleagues during classes	2.92	1.24	2.83	1.31	“
7	Online learning is very easy to use	2.74	1.41	2.81	1.26	“
8	online learning provides lots of flexibility over face-to-face mode	2.87	1.21	2.91	1.20	“
9	I communicate easily with my lecturer in online learning mode through chats, e-mails and instant discussions.	2.85	1.20	2.79	1.24	“
10	Use of videos and pictures in online learning improves one's knowledge of the course taught.	2.93	1.11	2.91	1.08	“
11	Use of online learning enhances student's creativity	2.71	1.20	2.68	1.18	“
12	Online learning is difficult if you are not computer literate	3.06	0.96	3.11	0.91	“
13	Online learning is time taking compared to face-to-face mode	2.43	1.56	2.32	1.50	Reject
14	Online learning enhances self-paced learning	2.95	1.07	2.86	1.10	Accept
15	Online learning is expensive	3.02	1.00	2.95	1.01	“
16	Students' problem-solving skills are improved in online learning	2.74	1.14	2.81	1.06	“
17	There is a lot of distractions during online learning	2.88	1.03	2.84	1.02	“
18	Online learning enhances collaborative learning than face-to-face mode.	2.65	1.35	2.70	1.21	“
<b>Average Mean</b>		<b>2.89</b>	<b>1.15</b>	<b>2.88</b>	<b>1.13</b>	
<b>Grand Mean</b>		<b>2.89</b>				

Table 1 shows that, 17 items were accepted as they had mean responses greater than the criterion mean. Also, item 13 was rejected as it had response mean less than the criterion mean. The items had a grand mean of 2.89 which is above the criterion mean and implies that pre-service teachers had moderate positive perception of online learning implementation in teacher education during covid-19 pandemic.

**Research Question Two:** What are the online learning platforms implemented in pre-service teachers' education during Covid-19 pandemic?



**Table 2:** Summary of online learning platforms used during Covid-19.

S/n	Item	Mean	SD	Remark
1	WhatsApp	2.56	1.20	Accept
2	Google classroom	3.12	1.05	Accept
3	Zoom	2.86	1.13	Accept
4	e-mails	2.35	1.41	Reject
5	Facebook	1.54	1.55	Reject
6	Telegram	1.13	1.50	Reject
7	Teams	1.05	1.75	Reject
8	Twitter	1.25	1.70	Reject
9	LinkedIn	1.08	1.68	Reject

Table 2 shows pre-service teachers' responses on online learning platforms used during covid-19. The result shows that items 1,2 and 3 were accepted as they have mean responses above the criterion mean. while others were rejected as they had response means less than the criterion mean.

**Research Question Three:** What is the difference between the mean response of male and female pre-service teachers on their perception towards implementation of online learning mode during Covid-19 pandemic?

**Table 3:** Summary of gender responses

Gender	N	Mean	SD	Diff in mean
Male	150	2.89	1.15	0.01
Female	300	2.88	1.13	

Table 3 shows that male pre-service teachers had mean response of 2.89 with standard deviation of 1.15 while their female counterparts had response mean of 2.88 with standard deviation of 1.13. These resulted to a mean difference of 0.01 in favour of male pre-service teachers.

**Hypothesis One:** Pre-service teachers' perception of online learning mode implementation during Covid-19 is not gender dependent.

**Table 4:** Summary of t-test analysis on gender perception

Gender	N	Mean	SD	df	t-cal	t-0.5	Remark
Male	150	2.89	1.15				
Female	300	2.88	1.13	448	0.01	1.65	NS

Table 4 shows that, t-calculated value of 0.01 is less than the t-0.5 value of 1.65 at 448 degree of freedom. Based on the result, the null hypothesis is retained at 0.05 level of significance.

### **Discussion of Findings**

The result of the study revealed that the online learning platforms used in pre-service teacher education during the covid-19 pandemic include zoom, google classroom and WhatsApp. These platforms were regularly used by the lecturers to deliver lectures and give assignments to the pre-service teachers. Though other platforms existed but were not substantially used during the period as indicated on the response table, these include, e-mails, Facebook, team, twitter, telegram and LinkedIn. This finding is in line with the result of Ogbonnaya, Awoniyi and Matabane (2020) who among other platforms included Zoom, WhatsApp, and Google classroom as students most preferred online learning platforms.

The study revealed that pre-service teachers had positive perception towards online learning implementation in their programme during the Covid-19 Pandemic. The list of items on the questionnaire was accepted as they had response mean greater than the criterion mean. These includes flexibility of online learning, creativity, building of interest, provision of learning materials, self-paced learning, increasing problem solving ability among others. However, the pre-service teachers did not accept that online learning is time consuming as the lecture time was always structured like the face-to-face lecture time. This result is in tandem with the result of Shetty, Shilpa, Dey and Kavya (2020) which revealed that the students had favourable perceptions towards online learning for sustaining their academic interest and development during the pandemic. Also, the result is in line with that of Olayemi et al. (2021) which revealed that a lot of students had positive perception towards online learning.

Finally, the result of this study revealed that the positive perception of pre-service teachers towards implementation of online learning during Covid-19 pandemic was not dependent on gender as the mean response of male and female pre-service teachers did not reveal any statistically significant difference. This result is in contrary to that of Ashong and Commander (2012) as earlier reviewed.

### **Conclusion**

The study investigated Pre-service teachers' perception of online learning implementation in teacher education during Covid-19 pandemic. From the findings of the study, the conclude that the most utilized online learning platforms by the

students were Zoom, google classroom and WhatsApp. Their perception of online learning was generally positive and this was not gender dependent. This positive perception of pre-service teachers is an indication of impending success of implementation of online learning in pre-service teacher education.

### **Recommendations**

Based on the findings of the study, the following recommendations were made:

1. Lecturers and students should be trained on the use of various information and communication technology platforms for online learning.
2. Teacher training institutions should make available uninterrupted Internet facilities in the institutions to enable pre-service teachers have access to online learning.
3. The Government and Non-Government organizations should ensure that there is constant electricity supply in the institutions to enable pre-service teachers use electronic devices for online learning.
4. Teacher training institutions should as a matter of urgency include online learning in their programmes to enable pre-service teachers get conversant with it.

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