

**MODERN TECHNOLOGIES FOR EFFECTIVE TEACHER EDUCATION
PROGRAMME IN BAYELSA STATE.**

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ABSTRACT

The study investigated modern technologies for effective teacher education prog Bayelsa State. Three (3) research questions and three (3) hypotheses guided the study. was anchored on. Technological Pedagogical Content Knowledge (TPACK) framework theory. The study employed descriptive survey design. The population of the study was 3,798 which comprised of all the teacher education undergraduates in universities in Bayelsa State. The population covered undergraduates of Teacher education programme in Niger Delta University, Federal University Otuoke and University of Africa, Toro-Oruwa. The sample size of the study is 380 representing 10% of the entire population The instrument for data collection was a questionnaire tagged “Modern Technologies for Effective Teacher Education Programme (MTETEPQ). The Cronbach Alpha reliability index of 0.74 guaranteed the instrument’s usage was 0.78. Mean, standard deviation was employed to answer all the research questions while t-test was used to test the hypotheses. The results of the findings of the study shows that modern technologies have highly impacted positively on effective teacher education programme in Bayelsa State. As real-time communication such as WhatsApp, Facebook, WeChat, Zoom etc. aid interaction between students and teachers. Google grant access to e-books and educational materials. The use of ICT facilities also facilitates connectivity between the learners and teaching. E-mail/database enhance adequate storage of students’ personnel data electronically. Based on the outcome of the findings, the researcher made the following recommendation among others, that, teacher should be properly trained and retrained from time to time on the effective use of modern technologies such like real-time communications like WhatsApp, Facebook, WeChat etc.

KEY WORDS: Modern, Technologies, Teacher, Education, Programme

Introduction

The landscape of education has evolved significantly over the last few decades due to the pervasive influence of modern technologies. Traditional pedagogical methods are no longer sufficient in preparing students for a rapidly changing world, one that is heavily reliant on digital literacy and technological proficiency. In response to this, teacher education programs must address the changing demands placed on educators. To appreciate the significance of this shift, it is crucial to understand the key elements driving the intersection of modern technologies and teacher education programs. Students today are often referred to as "digital natives" because they have grown up in an era of pervasive technology. They are accustomed to interactive digital environments, and educators need to adapt their teaching methods to engage and educate these learners effectively. This can be done through the use of educational technological tools. Educational technology tools, including interactive software, online platforms, virtual reality, and various other digital resources, have become essential components of modern education. Integrating these technologies into teaching methods is crucial for enhancing the learning experience. Thus, modern technologies offer various pedagogical opportunities, such as personalized learning, flipped classrooms, and blended learning. These shifts require teachers to adapt and develop new skills to make the most of these innovative approaches. In a technology-driven education landscape, teachers are no longer just instructors but also facilitators, guides, and curators of educational content. They need to be proficient in technology to effectively perform their roles.

The study will explore the challenges that teacher education programs face in adapting to the integration of modern technologies, the opportunities they present in enhancing teaching and learning, and the best practices for preparing future educators. The research aims to provide insights into how teacher education programs can effectively address the demands of the 21st century, ensuring that educators are equipped with the necessary skills to foster meaningful learning experiences in a digital age.

Statement of problem

In the rapidly evolving landscape of education, the integration of modern technologies has become imperative for the enhancement of teacher education programs. Modern technology offers immense potential to revolutionize teacher training. However, many teacher education institutions like colleges of education, universities of education, NTI, faculties of education in universities have inadequate technological infrastructure such as hardware, software, and internet connectivity and this hinder the effective implementation of modern technologies, hindering the delivery of high-quality teacher education programs. Teachers and teacher educators also lack the necessary skills and training to acquire the full potential of modern technologies and these institutions lack adequate training and professional development opportunities and these have led to the struggle of incorporating technology effectively into their teaching methods. More so, there is also a disparity in having access to technology and digital resources among teacher candidates from different socioeconomic backgrounds which has resulted to unequal educational opportunities. Addressing these challenges is crucial for the successful integration of modern technologies into teacher education programs and for preparing educators who are well-equipped to meet the diverse and evolving needs of today's learners. Hence, it is against this background that the study tends to investigate modern technologies for effective teacher education programme in Bayelsa State.

Aims and Objectives of the Study

The aim of the study was to determine the extent to which modern technologies leads to effective teacher education programme in Bayelsa State. The specific objective of the study were;

- 1.To determine the extent real-time communication leads to effective teacher education programme in BayelsaState.
- 2.To determine the extent to which ICT/instructional resources leads to effective teacher education programme in Bayelsa State.
- 3.To determine the extent to which electronic mail/database leads to effective teacher education programme in Bayelsa State.

Research Questions

1. To what extent does real-time communication lead to effective teacher education programme in Bayelsa State?

2. To what extent does ICT/instructional resources lead to effective teacher education programme in Bayelsa State?
3. To what extent does electronic mail/database lead to effective teacher education programme in Bayelsa State?

Hypotheses

1. There is no significant difference between the mean rating of male and female teachers on the extent real-time communication leads to effective teacher education programme in Bayelsa State.
2. There is no significant difference between the mean rating of male and female teachers on the extent ICT/instructional resources lead to effective teacher education programme in Bayelsa State.
3. There is no significant difference between the mean rating of male and female teachers on the extent electronic mail/database leads to effective teacher education programme in Bayelsa State.

LITERATURE REVIEW

The study was anchored on Technological Pedagogical and Content Knowledge (TPACK) framework. TPACK is a theoretical framework that emerged in the field of education. It was introduced by Punya Mishra and Matthew J. Koehler in 2006 as a way to understand the complex interactions between technology, pedagogy, and content knowledge that teachers need to integrate effectively for meaningful learning experiences. The TPACK framework consists of three primary knowledge domains:

Technological Knowledge (TK): This refers to an understanding of the use of technology, including tools, resources, and systems relevant to a particular subject or content area. It involves knowing how to use technology effectively and being aware of new and emerging technologies.

Pedagogical Knowledge (PK): This involves the understanding of teaching and learning strategies, classroom management, instructional design, and assessment techniques. It's essentially knowledge about the methods and practices of teaching.

Content Knowledge (CK): This is knowledge about the subject matter being taught, including concepts, theories, principles, and the ways they relate to each other. It's the traditional domain of subject matter expertise.

In the context of teacher education programs, TPACK suggests that educators should be equipped with the knowledge and skills to integrate technology seamlessly into their teaching methods while maintaining a deep understanding of the subject matter and effective pedagogical strategies. The use of modern technologies in teacher education aligns with the TPACK framework by emphasizing the need for teachers to develop a holistic understanding of how technology can enhance their teaching practices.

Concept of modern technologies

Modern technology is the advancement of old technology with new additions and modifications (Albright, 2006). For example, it is impossible for the people in this decade to live with a wired telephone placed on the table. So, the mobile phone which can be taken with us anywhere is the perfect example of technological advancement or simply, modern technology (Arinde, 2010). Any machine or device we see around us is the product of modern technology. It made things easier than we could ever imagine (Chaib, M & Svensson, 2005).

Modern technology has impacted every area of our lives and became a crucial factor in no time (Coffin, 2008). We even reached a point where everything we use in our daily lives is directly or indirectly related to the technological advancement of some form (Al-Rawahi & Al-Mekhlafi, 2015). So, modern technology cannot be avoided even if we intentionally wanted to. According to the latest insights as to how exactly technology has affected teaching, it was revealed that the use of modern technologies has increased the instructional practices of teachers (Jagtap & Padmawar, 2013). The transfer of knowledge becomes very easy and convenient as well as effective (Jagtap & Padmawar, 2013). What this means is that our minds tend to work faster when assisted with the use of modern technologies (Ayeni, 2011). The reliance and dependence of such an innovation, that simply make life easy is completely unavoidable in schools, universities and colleges. Modern technology is simply an advancement of old technology (Asikhia, 2010). It is all about doing things in a much quicker, efficient way by improving the workflow. Either it could be helping humans or doing the task alone, machines are always better

in terms of accuracy and efficiency. So, we are taking advantage of them to make our jobs easier. The realization that we can do a lot more stuff within minimal time, with less effort paved the path to modern technology as we see today (Bhattacharjee & Deb, 2016).

Concept of teacher education programme

The National Council for Teacher Education has defined teacher education as a programme of education, research and training of persons to teach from pre-primary to higher education level. According to Barclay, Higgins & Thompson (2017), teacher education is a programme that is related to the development of teacher proficiency and competence that would enable and empower the teacher to meet the requirements of the profession and face the challenges therein. According to Goods Dictionary of Education Teacher education means, all the formal and non-formal activities and experiences that help to qualify a person to assume responsibilities of a member of the educational profession or to discharge his responsibilities more effectively. In 1906-1956, the program of teacher preparation was called teacher training. It prepared teachers as mechanics or technicians. It had narrower goals with its focus being only on skill training. The perspective of teacher education was therefore very narrow and its scope was limited. As W.H. Kilpatrick put it, Training is given to animals and circus performers, while education is to human beings. Teacher education encompasses teaching skills, sound pedagogical theory and professional skills. Teacher Education = Teaching Skills + Pedagogical theory + Professional skills.

Modern Technology in Teacher Education programme

Modern technology helps education in-depth. Students can use text, audio, and video to communicate back and forth with other students and teachers (Asare & Nti, 2014). Furthermore, modern technology allows you to never step foot in a brick-and-mortar school again (Baker-Tate, 2010). There are diverse ways modern technology is used in education, such as:

1. Real-time communication and teacher education programme

Real-time communication software is a category of application that enables the user to interact with one or more persons through video and audio calls as well as messages. Examples of real-time communication software include programs such as Skype, Hangouts, Google Meet, Zoom,

Facebook Messenger, E-mail, G-mail and WhatsApp. Thus, these General Applications software exemplify how technology addresses diverse needs, from professional work demands to personal interests, enhancing both productivity and leisure. Real-time communication tools, such as instant messaging and video conferencing, enable learners and educators to collaborate seamlessly, regardless of their physical location. This fosters teamwork and allows colleagues to share ideas, provide feedback, and work together efficiently on projects.

ICT & Instructional resources and teacher education programme

Technologies play an important role in training programme of teachers. ICT is very important for Pre-service as well as In-service teacher education programmes in the current Century. Without proper knowledge of ICT teacher cannot perform in his/her class room and it could not be said to be a complete one. ICT helps teachers to interact with students and helps them in preparation their teaching, provide feedback, effectiveness of classroom. ICT helps teachers in preparation for teaching. In order to introduce ICT in pre-service teacher education different methods and strategies are applied. Different tools are used such as word processing, Database, Spreadsheet etc. Various technology-based plans are used to help the teachers for their practice teaching. ICT prepares teacher for the use of their skills in the real classroom situation and also make students for their future occupation and social life. Teachers must provide technological support to learn using motion picture, animation, simulation training which helped student teachers to give model presentation. If the teacher is highly equipped with technology, the student will also be equipped with technology. Student accesses knowledge and information through TV, digital media, cable network, internet and social media i.e. Facebook, Twitter, WhatsApp, LinkedIn, Igo, Line, WeChat etc. ICT helpful for designed learning situations which are needed for both vocational education and the training of future teachers (in the teacher training institutes). It removes the traditional method of teaching and prepare teacher to apply modern method of teaching.

Electronic mail/Databases and teacher education programme

As a cost effective and accessible communications tool, e-mail makes a significant impact on communications within and higher institution and it has become a vehicle for finding and using information resources. While the use of e-mail for all communications is growing rapidly,

few materials are readily available for students and teachers who want to use e-mail as an educational tool. Thus, we have not yet realized the potential of e-mail to enhance learning and to integrate this type of computing into the whole curriculum. The use of e-mail is a useful tool for communication among students and educators which facilitate students' progress.

Methodology

The study employed descriptive survey design. The population of the study was 3,798 which comprised of all the teacher education undergraduates in universities in Bayelsa State. The population covered undergraduates of Teacher education programme in Niger Delta University, Federal University Otuoke and University of Africa, Toru-Orua. The sample size of the study is 380 representing 10% of the entire population. The instrument for data collection was a questionnaire tagged "Modern Technologies for Effective Teacher Education Programme (MTETEPQ)". Likert scale rating of Strongly Agreed (SA) =4, Agreed (A) =3 Disagreed (D) = 2 and Strongly Disagreed (SD) = 1 was used to structure the instrument's items on 4-point. The instrument was validated by two experts in the Department of Education and Arts for content and face validity. After the administration of the research instrument, the researcher was able to retrieve 350 copies of the questionnaire, and used same for data analysis. The Cronbach Alpha reliability index of 0.74 guaranteed the instrument's usage of the instrument at 0.05 level of significance. Mean, standard deviation was employed to answer all the research questions and T-test was used for testing of Hypotheses. All the statistical analysis were aided by Statistical Package of the Social Sciences (SPSS) version 25.

RESULTS AND DISCUSSION

Research Question One: To what extent does real-time communication enhance effective teacher education programme in Bayelsa State?

Table 1: Extent to which real-time communication enhance effective teacher education programme in Bayelsa State

S/N	Real-time communication lead to effective teacher education programme	Male n=207		Female n=143		MS	Remark
		Mean	SD	Mean	SD		
1.	Real-time communication like WhatsApp enhances interaction and engagement in teacher	3.05	0.80	3.15	0.87	3.09	Agreed

	education programme.						
2.	Real-time communication Zoom lead to flexible learning in teacher education programme.	3.27	0.61	3.34	0.59	3.30	Agreed
3.	Real-time communication like Facebook enhances collaborative learning in teacher education programme.	3.09	0.97	3.15	1.06	3.12	Agreed
4.	Real-time communication WhatsApp enable students to give immediate feedback in teacher education programme.	3.12	0.81	3.01	0.88	3.07	Agreed
5.	Real-time communication like Google grant students access to e-learning materials in teacher education programme.	3.25	0.85	3.15	0.99	3.21	Agreed
6.	Real-time communication encourages technological professional development of student-teachers	3.32	0.79	3.20	0.88	3.27	Agreed
7.	Real-time communication leads to efficient resource sharing in teacher education programme.	3.49	0.67	3.57	0.60	3.53	Agreed
8.	Real-time communication encourages data collection and assessment in teacher education programme.	3.44	0.65	3.47	0.67	3.45	Agreed
9.	Real-time communication enhances continual improvement in teacher education programme.	3.25	0.66	3.34	0.66	3.29	Agreed
10.	Real-time communication enhances the quality of teacher education in teacher education programme.	3.18	0.74	3.17	0.72	3.17	Agreed
Grand Total		3.25	0.75	3.26	0.79	3.25	Agreed

The data in table 1 showed that the extent to which real-time communication enhance effective teacher education programme in Bayelsa State is high in a positive way (Mean=3.25). The table also showed real-time communication enhances interaction and engagement (Mean=3.09), lead to flexible learning (Mean=3.30), enhances collaborative learning (Mean=3.12), encourages immediate feedback (Mean=3.07), enhances accessibility (Mean=3.21), encourages professional development (Mean=3.27), leads to efficient resource sharing (Mean=3.53), encourages data collection and assessment (Mean=3.45), enhances continual improvement (Mean=3.29), enhances the quality of teacher education (Mean=3.17).

Research Question Two: To what extent does ICT/instructional resources enhance effective teacher education programme in Bayelsa State?

Table 2: Extent to which ICT/instructional resources enhance effective teacher education programme in Bayelsa State

S/N	ICT/instructional resources lead to effective teacher education programme	Male n=207		Female n=143		MS	Remark
		Mean	SD	Mean	SD		
11.	ICT/instructional resources provide diverse range of multimedia content	3.11	0.88	3.16	0.89	3.13	Agreed
12.	ICT/instructional resources lead to effective teacher education	3.36	0.70	3.19	0.68	3.29	Agreed
13.	ICT/instructional resources encourage enhanced instruction	2.89	0.86	2.82	1.04	2.86	Agreed
14.	ICT/instructional resources enhance flexibility and accessibility	3.04	0.84	3.03	0.95	3.04	Agreed
15.	ICT/instructional resources encourage resource sharing	2.98	0.85	2.92	0.91	2.95	Agreed
16.	ICT/instructional resources enhance efficient assessment	3.35	0.73	3.41	0.74	3.38	Agreed
17.	ICT/instructional resources provide access to a wide range of resources	3.43	0.74	3.52	0.74	3.46	Agreed
18.	ICT/instructional resources encourage innovation and adaptation	2.92	0.84	2.91	0.76	2.92	Agreed
19.	ICT/instructional resources enhance personalization of learning	3.40	0.58	3.45	0.65	3.42	Agreed
20.	ICT/instructional resources lead to professional development and support	2.99	0.74	2.93	0.78	2.97	Agreed
Grand Total		3.15	0.78	3.13	0.81	3.14	Agreed

The data in table 2 shows that the extent to which ICT/instructional resources enhance effective teacher education programme in Bayelsa State is high in a positive way (Mean=3.14). The table also showed ICT/instructional resources provides diverse range of multimedia content (Mean=3.13), leads to effective teacher education (Mean=3.29), encourages enhanced instruction (Mean=2.86), enhances flexibility and accessibility (Mean=3.04), encourages resource sharing (Mean=2.95), enhances efficient assessment (Mean=3.38), provides access to a wide range of resources (Mean=3.46), encourages innovation and adaptation (Mean=2.92), enhances personalization of learning (Mean=3.42), leads to professional development and support (Mean=2.97).

Research Question Three: To what extent does electronic mail/database enhance effective teacher education programme in Bayelsa State?

Table 3: Extent to which electronic mail/database enhance effective teacher education programme in Bayelsa State

S/N	Items	Male n=207		Female n=143		MS	Remark
		Mean	SD	Mean	SD		
21.	electronic mail/database contributes to the effectiveness of teacher education programmes	3.04	0.82	3.20	0.84	3.10	Agreed
22.	electronic mail/database enhances centralized record-keeping	3.31	0.62	3.32	0.59	3.32	Agreed
23.	electronic mail/database improves the quality of data analysis due to large storage capacity	3.05	1.00	3.20	1.04	3.11	Agreed
24.	electronic mail/database leads to effective communication	3.09	0.83	3.06	0.86	3.08	Agreed
25.	electronic mail/database encourages reporting and assessment	3.17	0.92	3.16	0.97	3.17	Agreed
26.	electronic mail/database improves collaboration among staffs	3.28	0.81	3.25	0.85	3.27	Agreed
27.	electronic mail/database enhances timely feedback	3.47	0.74	3.54	0.64	3.50	Agreed
28.	electronic mail/database improves the security of stored data	3.41	0.72	3.45	0.67	3.43	Agreed
29.	electronic mail/database gives access to educational content	3.21	0.70	3.32	0.70	3.26	Agreed
30.	electronic mail/database enhances support and training of staffs	3.17	0.73	3.17	0.74	3.17	Agreed
Grand Total		3.22	0.79	3.27	0.79	3.24	Agreed

The data in table 4.3 shows that the extent to which electronic mail/database enhance effective teacher education programme in Bayelsa State is high in a positive way (Mean=3.24). The table also showed electronic mail/database contributes to the effectiveness of teacher education programmes (Mean=3.10), enhances centralized record-keeping (Mean=3.32), improves the quality of data analysis due to large storage capacity (Mean=3.11), leads to effective communication (Mean=3.08), encourages reporting and assessment (Mean=3.17), improves collaboration among staffs (Mean=3.27), enhances timely feedback (Mean=3.50), improves the security of stored data (Mean=3.43), gives access to educational content (Mean=3.26), enhances support and training of staffs (Mean=3.17).

H₀₁: There is no significant difference between the mean rating of male and female teachers on the extent real-time communication enhance effective teacher education programme in Bayelsa State.

Table 4.4: Summary of t-test on the difference between the mean rating of male and female teachers on the extent real-time communication enhance effective teacher education programme in Bayelsa State

Gender	N	Mean	SD	Df	t-test	Sig.	Remark
Male	207	3.25	0.75	348	0.120	0.905	NS
Female	143	3.26	0.79				

NS=Not Significant

The table above showed the difference between the opinion mean ratings of male and female teachers on the extent real-time communication enhance effective teacher education programme in Bayelsa State. The mean response of male is 3.25 and the standard deviation is 0.75, while the mean response of female is 3.26 and the standard deviation is 0.79. The t-test calculated value is 0.120, the corresponded significance value is 0.905 showing > 0.05 at 348 degrees of freedom. Hence, it is concluded that there is no significant difference between the opinion mean ratings of male and female teachers on the extent real-time communication enhance effective teacher education programme in Bayelsa State. Therefore, the null hypothesis one is retained at 0.05 level of significance.

Ho2: There is no significant difference between the mean rating of male and female teachers on the extent ICT/instructional resources enhance effective teacher education programme in Bayelsa State.

Table 4.5: Summary of t-test on the difference between the mean rating of male and female teachers on the extent ICT/instructional resources enhance effective teacher education programme in Bayelsa State

Gender	N	Mean	SD	Df	t-test	Sig.	Remark
Male	207	3.15	0.78	348	0.232	0.817	NS
Female	143	3.13	0.81				

NS=Not Significant

The table above showed the difference between the opinion mean ratings of male and female teachers on the extent ICT/instructional resources enhance effective teacher education programme in Bayelsa State. The mean response of male is 3.15 and the standard deviation is 0.78, while the mean response of female is 3.13 and the standard deviation is 0.81. The t-test

calculated value is 0.232, the corresponded significance value is 0.817 showing > 0.05 at 348 degrees of freedom. Hence, it is concluded that there is no significant difference between the opinion mean ratings of male and female teachers on the extent ICT/instructional resources enhance effective teacher education programme in Bayelsa State. Therefore, the null hypothesis two is retained at 0.05 level of significance.

Ho3: There is no significant difference between the mean rating of male and female teachers on the extent electronic mail/database enhance effective teacher education programme in Bayelsa State.

Table 4.6: Summary of t-test on the difference between the mean rating of male and female teachers on the extent electronic mail/database enhance effective teacher education programme in Bayelsa State

Gender	N	Mean	SD	Df	t-test	Sig.	Remark
Male	207	3.22	0.79	348	0.582	0.561	NS
Female	143	3.27	0.79				

NS=Not Significant

The table above showed the difference between the opinion mean ratings of male and female teachers on the extent electronic mail/database enhance effective teacher education programme in Bayelsa State. The mean response of male is 3.22 and the standard deviation is 0.79, while the mean response of female is 3.27 and the standard deviation is 0.79. The t-test calculated value is 0.582, the corresponded significance value is 0.561 showing > 0.05 at 348 degrees of freedom. Hence, it is concluded that there is no significant difference between the opinion mean ratings of male and female teachers on the extent electronic mail/database enhance effective teacher education programme in Bayelsa State. Therefore, the null hypothesis three is retained at 0.05 level of significance.

Summary of Findings

1. The extent to which real-time communication enhance effective teacher education programme in Bayelsa State is high.

2. The extent to which ICT/instructional resources lead to effective teacher education programme in Bayelsa State is high.
3. The extent to which electronic mail/database enhance effective teacher education programme in Bayelsa State is high.
4. There is no significant difference between the mean rating of male and female teachers on the extent real-time communication enhance effective teacher education programme in Bayelsa State.
5. There is no significant difference between the mean rating of male and female teachers on the extent ICT/instructional resources enhance effective teacher education programme in Bayelsa State.
6. There is no significant difference between the mean rating of male and female teachers on the extent electronic mail/database enhance effective teacher education programme in Bayelsa State.

Discussion of Findings

Extent real-time communication enhance effective teacher education programme in Bayelsa State

Table 1 revealed that the extent to which real-time communication enhance effective teacher education programme in Bayelsa State is high. On the other hand, table 4 revealed that there is no significant difference between the mean rating of male and female teachers on the extent real-time communication enhance effective teacher education programme in Bayelsa State. Real-time communication software is a category of application that enables the user to interact with one or more persons through video and audio calls as well as messages. Some of the benefits of the use or real-time communication include: knowledge sharing, document sharing and collaboration, remote work support, reduced e-mail overload, enhanced accessibility, task management, enhanced customer support, reduced meeting overload, analytics and reporting, efficient crisis management, etc.

Extent ICT/instructional resources enhance effective teacher education programme in Bayelsa State

Table 2 revealed that the extent to which ICT/instructional resources enhance effective teacher education programme in Bayelsa State is high. Table 5 on the other hand revealed that there is no

significant difference between the mean rating of male and female teachers on the extent ICT/instructional resources lead to effective teacher education programme in Bayelsa State. ICT is very important for Pre-service as well as In-service teacher education programmes in the current Century. Student access knowledge and information through TV, digital media, cable network, internet and social media i.e. Facebook, Twitter, WhatsApp, LinkedIn, Igo, Line, WeChat etc. ICT helps Teacher to communicate properly with their students. So, ICT bridge the gap between teacher and students.

Extent electronic mail/database enhance effective teacher education programme in Bayelsa State

Table 3 revealed that the extent to which electronic mail/database enhance effective teacher education programme in Bayelsa State is high. On the other hand, table 6 revealed that there is no significant difference between the mean rating of male and female teachers on the extent electronic mail/database enhance effective teacher education programme in Bayelsa State. As a cost effective and accessible communications tool, e-mail makes a significant impact on communications within secondary and higher institution and it has become a vehicle for finding and using information resources. The use of e-mail is a useful tool for communication among students and educators which facilitate students' progress.

Conclusion

The study investigated the extent to which modern technologies leads to effective teacher education programme in Bayelsa State. The results of the findings of the study shows that modern technologies have highly impacted positively on effective teacher education programme in Bayelsa State. As real-time communication such as WhatsApp, Facebook, WeChat, Zoom etc. aid interaction between students and teachers. Google grant access to e-books and educational materials. The use of ICT facilities also facilitates connectivity between the learners and teacher. E-mail/database enhance adequate storage of students' personnel data electronically.

Recommendations

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

1. Teacher should be properly trained and retrained from time to time on the effective use of modern technologies such like real-time communications like WhatsApp, Facebook, WeChat etc.
2. All relevant authorities should support institutions to ensure they are adequately equipped with the trends on modern technological facilities; as it has been found to be an effective way of teaching and learning in the contemporary time.
3. Stakeholders of teacher education programme should ensure that they utilize e-mailing system and as well as to ensure adequate storage of students' data base to stimulate effective record keeping in the school.

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