# PROMOTING TECHNOLOGY-BASED LEARNING IN NIGERIA: ROLE OF THE STAKEHOLDERS

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**ABSTRACT**

*This study investigated the roles of stakeholders in promoting technology-based learning in Nigeria. The population of the study comprised all senior secondary school III students in public secondary schools, their teachers and parents in Akoko South West, Ondo State. Simple random procedure was used to select ten (10) schools out of seventeen (17) secondary schools in the Local Government. Four hundred (400) samples comprised 300 students, 50 teachers and 50 parents were randomly selected from the population. Self-developed questionnaire served data collection purpose. The validated instrument has a reliability index of 0.68. Findings from the study revealed that parents are to provide Iinformation and Ccommunication Ttechnology(ICT) gadgets for their children at home and monitor them so as to guide against abuse of the technology; it was discovered that Government, Parents.Teachers'.Association (PTA)., old students, philanthropists are to build and equip ICT units in schools and to, organize workshops and seminars for teachers on ICT. It was concluded that building and equipping of ICT centers by the government is very germane, PTA, old students association and philanthropists. However, teachers are to strategically and technically make use of technology to foster teaching and learning in Nigeria. It was recommended that workshop and seminars are to be organized for personnel in ICT in schools by the Government and teachers are to use new innovative method to blend learning and make the process technology-based.*

**How to Cite:**

## INTRODUCTION

Technology has been used in all facets of life since its advent in which education is not left out. It has been used to transfer knowledge from teacher to students, texts to students, students to students, even, it makes learning to be mobile and learning is at learners' pace and the convenient time. Teacher can reach out to his students without face-to-face interaction and teaching can be in such a way that all students in the group will be carried along. Both teachers and learners can carry out activities using technology (using gadgets) via the internet. It can collect process and save data or information about students and send this information to the appropriate quarters where they are needed without carrying files.

Technologies, in general become the information source, offer many ways to enrich the learning experience motivate learners and meet the diversity in their backgrounds, and allow teachers to facilitate and monitor collaborative learning activities, to keep records, to track student progress as well as to provide timely feedback to the students[1]. Technology involves people. It operates within, and has an effect on, society. "The technology curriculum aims to develop technological literacy to enable students to participate fully in the technological society and economy in which they will live and work"[2]. He further explained that the curriculum leaves no doubt that technology should operate within the context of society as a whole "understanding the nature of the relationship between technology and society is vital to technological practice".

The term stakeholder has been used widely in business journals and other sector of life. It is referred to the people who must be consulted, concerned or have role to play when technology is used to transfer learning. Stakeholders include those who have some kind of claim on the services of the organization (claimants) or those who can influence the workings of using technology in some ways to foster learning ("influencers"). Emilie postulated that other members in the community and organizations are to work together and promote environmental learning and environmental management practices in schools which is vital to improve school programs, creating a conducive learning environment in the school and providing support to teachers for school activities, amongst others. As further pointed out by Epstein, when parents, teachers, students, and others view one another as partners in education, a caring community forms around students and begins its work. According to him, it is through this partnership that stakeholders (teachers, students, parents, and organizations) learn from each other and engage through practices in

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[1] L. Kerry, "Who are the stakeholders?," *The Journal of Technology Studies* 33, no.1 (2007): 2-8.

[2] P. Torres, "Active Engagement of Stakeholders during the Pandemic: Basis for Creating         Flexible Learning Environment for Students," *International Journal of Innovative Science and Research Technology* 6, no.2 (2021).

relation to the school programs. Stakeholders are learning from each other through a process of social participation as referred to the concept of communities of practice.

Parents have greater involvement in the elementary level as they were more participative when the children were still young or in their primary years and slowly dwindled when the children reached the secondary level.[3] It was observable that parents' participation remarkably declined at some point. At this level, greater independence was given to the student resulting to a lesser parent involvement almost in all aspects of student life at school. Meanwhile, according to the Theory of Psychosocial Development of Erickson[4], if children are encouraged and reinforced for their initiative, they begin to feel industrious and confident in their ability to achieve goals. If this initiative is not encouraged, if it is restricted by parents or teacher, then the child begins to feel inferior, doubting his own abilities and therefore may not reach his or her potential. The involvement of the parent becomes a crucial factor to the success of the child, the very reason that greater involvement is expected during this stage.

Parent's involvement in their child's education is the single most important predictor of student academic success. Another study concluded that concluded that parents have a major influence on their children's achievement in school and through life.[5] When parents are involved in their child's education, students of all backgrounds and income levels are found to perform better in academic work and extracurricular activities. Meanwhile, Parent involvement has been classified into reactive and proactive.[6] Reactive involvement means parents attend to school programs that are organized by the school such as parents' meetings, family gatherings, or volunteering whereas proactive involvement is the participation of parents in assisting their children, completing homework, discussing school activities, and following the children's improvement. In conclusion, parents need to be aware of their roles and responsibilities in educating their children.

Modern computer-mediated communication technologies have evolved to the extent that they can be effectively utilized in this re-engineering process because they have the potential to support interactive pedagogies. In Nigeria, the breakthrough in cell phone technology otherwise known as mobile

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[3] L. Hill, "Nature and effect of teacher professional development," 2009. *https://Journals.sagepub.com/doi/10.117/003172170*

[4] J. Mcleod, *"An introduction to counseling," F*ifth edition, (mcGrawn Hil education, (UK), 2013), p 6

[5] A. Henderson and Mapp, K L. "A new wave of Evidence: The Impact of School, Family, and Community Connections on Student Achievement," *Annual Synthesis,* (2002).

[6] C. Olmstead, "Using technology to increase parent involvement," *Doctoral Dissertation*, California State University, Fullerton 2013

technology, in 2021, has revolutionized the education sector[7]. A shift is now possible from static content (text, illustrations, graphs, charts, photos, or maps) towards supporting knowledge production through interactive learning environments (with animation, video, or interactive illustrations) and thus, facilitating flexible and distributed engaged learning that provide wider educational opportunities. For discussing content, online discussion forums and web conferencing technological devices in learning improves the quality of education. Social network is a new and updated trend in the technology world that has been referred to networked tools that allow learners to communicate, interact and share their ideas and interests with each other[8].

Social networks such as WhatsApp have opened up new interaction opportunities among teachers and learners. The use of social networks is becoming popular in everyday communication. It is even used for collaborative learning tasks, especially in language learning. The popularity of social networking site is due to their conversational tone as knowledge is effectively shared through a process of discussing, storytelling and collaborative editing[9]. Contemporary educational policy, curriculum designing, and instructional pedagogy have been profoundly affected by impressive new global information and communication technologies[10]. New modern competencies include the ability to collaborate with others on processes of problem-solving, textual construction, negotiation, and cooperative production and presentation even when working in different locations and connecting only by these new technologies. Like other fields of study, teaching have also influenced by new teaching sources and software[11]. He stressed further that wireless technologies such as laptop computers, mobile phones, especially smart-phones, create a revolution in education that transform the traditional classroom-based learning into lifelong learning which have worked well.

With the blooming of the digital age in 1990s, teachers were among the first that found creative and innovative ways to teach through integrating digital technologies such as Internet and other similar digital technologies like E-mail,

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[7] Ademiotan Laleye and Olotu O.P, "Downside uses of mobile phone among secondary school students and the influences on family and school performance in Ondo State," *Zaria Journal of Studies in Education* 4, no.1 (2021): 256-264.

[8] T. Anderson, "Social Networking. In *Stride Handbook 8- E-Learning.* IGNOU 2010. Accessed on June, 10 2013, *http://webserver.ignou.ac.in/institute/STRIDE_Hb8_*

[9] A. Laleye et al "Influence of social networking sites on lifestyles, acculturation and self-esteem of university students in Ondo State, Nigeria," *New Media and Mass Communication* 13, (2013): 17-26.

[10]M. Celce-Murcia, Brinton, D. M., and Snow, A. S. "*Teaching English as a second or foreign language*" 4th edition. (Heinle and Heinle, Thomson Learning, 2014), p 12

[11]P. Chipunza, "*Using mobile devices to leverage student access to collaboratively-generated resources: A case of WhatsApp instant messaging at a South African University,*" Paper presented at International Conference on Advanced Information and Communication Technology for Education ICAICTE (2013)

Web quest, instant messaging, and Web-based groups in their classrooms[12]. The advances in technology and wireless networking expanded the opportunities of utilizing mobile phones in educational environments. Mobile phones and similar technologies suggest communicative language practice, access to authentic content, and task completion[13].

The availability of technological gadgets, facilities and equipment and the use of technology to foster teaching and learning were observed low in the education sector. The advantages of this technology cannot be overemphasized in schools, ranging from using for instructions to its usage for examination and processing of result. This is why this study explores the roles of stake holders in promoting technology based learning in Nigeria schools.

The main purpose of this study was to investigate the roles of stake holders in promoting technology-based learning in Nigeria. The following questions were raised to guide the study:

1. what are the roles of teachers in promoting technology-based learning in Nigeria?
2. what are the roles of parents in promoting technology-based learning in Nigeria?
3. what are the roles of P.T.A., old students and philanthropist in promoting technology-based learning in Nigeria?
4. what are roles of government in promoting technology-based learning in Nigeria?
5. what are roles of students in promoting technology-based learning in Nigeria?

**Methods**

The research designed for the study was a descriptive research design of the survey type which sought to establish the roles of stakeholders in technological-based learning in Akoko South West, Ondo State Nigeria.

The population of this study comprised all the public secondary school SSSIII students, teachers and parents in Akoko South West Local Government Ondo state. Four hundred (400) participants were invoked in the study. The sampling procedure was simple random sampling procedure. The researcher randomly selected ten (10) schools out of seventeen (17) secondary schools in the local government. In each of the ten schools, thirty (30) students were selected from selected schools and fifty (50) teachers, five (5) from each school

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[12] B. Bachmair et al. "Mobile phone as cultural resources for learning: an analysis of educational structures, mobile expertise and emerging cultural practices," Academic Press (2009).

[13] M. Chinnery, "Going to the MALL: Mobile Assisted Language Learning," *Language Learning and Technology 1, (2006):* 9–16

and fifty parents were selected from the towns and villages of the study through convenient sampling technique.

In order to collect data and provide answers to the research questions, Questionnaire on the roles of stakeholders on technological-based learning were employed by the researcher. The questionnaire was self-developed. It has twenty five (25) items of which five (5) items were on students'/teachers' roles, five (5) items PTA/old students, (5) items on the roles of parents, 5 items were on the roles of government and 5 were on the roles of students as stakeholders in promoting technology-based learning in Nigeria with a four-point Likert-scale of Strongly Agree, (SA) for 4, Agree, (A) for 3, Disagree, (D) for 2 and Strongly Disagree, (SD) for 1. The respondents were asked to respond to the items by choosing any of the four responses on the scale.

To ensure validity of the instrument, the initial draft of the instrument was scrutinized by experts in test and measurement and educational technology. Face, content and construct of the instrument were checked and all non-technical flaws in the instrument. Such inputs enhanced a thorough validation in order to ensure that the instrument actually measured what it was intended to measure in relation to the research questions.

The instrument was trial tested on a sample of 30 students who were not part of the real study sample, in Akoko North East, Ondo State. The data collected showed that the students did not have problems in responding to the items in the questionnaire. In computing the reliability of this research instrument, Cronbach's alpha was utilized and an estimated value of 0.68 was obtained. This means the instrument is good for use

After the questionnaire was administered and retrieved, the data from the respondents was analyzed using descriptive statistic means and standard deviations. The cut-off mean was 2.50. For the basis of decision, 2.50 and above is regarded as being acceptable, while below 2.50 was rejected.

## RESULT AND DISCUSSION

Research Question 1: What are the roles of teachers in promoting technology-based learning in Nigeria?

### Table 1: A Mean And Standard Deviation Table Showing The Result To Research Question One.

| SN | Promoting technology-based learning by teachers | Mean | SD | Remark |
|----|--------------------------------------------------|------|------|--------|
| 1 | Teachers to go on CAI | 3.70 | 0.61 | A |
| 2 | Make use of technological gadgets during teaching | 3.48 | 0.61 | A |
| 3 | Use new innovative methods of teaching that are imbedded in Edu-tech | 3.37 | 0.75 | A |
| 4 | Giving assignments to learners via technological devices like phone | 3.41 | 0.67 | A |
| 5 | Mobilize PTA, old students and philanthropists to support technology-based learning | 3.34 | 0.68 | A |

| | | |
|---|---|---|
| **Average mean** | **3.46** | |

Table 1 revealed the result of the analysis that answered research question 1. It was observed that all the items raised on the roles of teacher as stakeholder in promoting technology-based-learning were agreed upon by the respondents.  In item 1, which has mean value of 3.70 which means the majority of the respondents agreed the items that teachers' role as stakeholder is for teachers to go on computer based instructions in other to make learning active and interactive. In item 2, with mean value of 3.48 agreed with the item that teachers' role as stakeholder is to make use of technological gadgets during teaching. In item 3, of mean value of 3.37 of the respondents agreed with the item that teachers' role as stakeholder is to make use of different innovative methods of teaching in educational technology. Average mean of 3.46 indicated that all the items were agreed as the roles of teachers in promoting technology-based learning.

Research question 2: what are the roles of P.T.A., old students and philanthropist in promoting technology-based learning in Nigeria?

**Table 2: Mean And Standard Deviation Showing The Result To Research Question Two.**

| SN | Roles of P.T.A., old students and philanthropist in promoting technology-based learning in Nigeria | Mean | SD | Remark |
|---|---|---|---|---|
| 1 | Building of ICT centre in school | 3.72 | 0.60 | A |
| 2 | Electrification of ICT centre in schools | 3.53 | 0.67 | A |
| 3 | Equipping ICT rooms with ICT gadgets | 3.43 | 0.71 | A |
| 4 | Donating money for the maintenance of ICT centre | | | |
| | | 3.52 | 0.64 | A |
| 5 | Renovation and maintenance of existing facilities | | | |
| | | 3.40 | 0.69 | A |
| | Average Mean | 3.52 | | |

Table 2 revealed the result of the analysis that answered research question 2. It was observed that all the items raised on the roles of P.T.A. as stakeholder in promoting technology based-learning were agreed upon by the respondents with average mean of 3.52.  In item 1, with mean value 3.72 of the respondents agreed that P.T.A. role as stakeholder is to participate in building ICT centers in schools. In item 2, with mean value of 3.53 of the respondents agreed that PTA role as stakeholder is to electrify ICT centers and in item 3, with mean value of 3.43 of the respondents agreed that PTA role as stakeholder is to furnish and equip ICT centers. Items 4 and 5 have mean values of 3.52 and 3.40 respectively agreed

Research question 3: What are the roles of parents in promoting technology-based learning in Nigeria?

**Table 3: A Mean And Standard Deviations Table Showing The Result To Research Question Three.**

| SN | Roles of parents in promoting technology-based learning in Nigeria | Mean | SD | Remark |
|---|---|---|---|---|
| 1 | Provision of ICT gadgets for children at home | 3.47 | 1.22 | A |
| 2 | Buying data for children so as to access the internet | 2.58 | 0.95 | A |
| 3 | monitor the children while using ICT to curb them against downsides use of it | 3.52 | 0.70 | A |
| 4 | Buying recorded and educative software for their children | 3.41 | 0.78 | A |
| 5 | Guide the students on how to use ICT gadgets and material at home | 3.38 | 0.77 | A |
| | **Average mean**            **3.27** | | | |

Table 3 revealed the result of the analysis that answered research question 3. It was observed that all the items raised on the roles of parents as stakeholder in promoting technology based-learning were agreed upon by the respondents. In item 1, with mean value of 3.47 of the respondents agreed that parents' role as stakeholder is to provide ICT gadgets at home for their children. In item 2, with mean value 2.58 of the respondents agreed that parents' role as stakeholder is to buy data for children so as to access the internet.   In item 3, with mean value 3.52 of the respondents agreed that parents' role as stakeholder is to monitor the children while using ICT to curb them against negative uses of it. Items 5 seeks the opinion of the respondents on parents roles on guiding the students on how to use ICT gadgets and material at home with mean value of 3.38. The average mean of 3.27 indicated that all the items raised are the roles of PTA.

Research question 4: what are roles of government in promoting technology based learning in Nigeria?
**Table 4: A Frequency Count, And Percentage Showing The Result To Research Question Four.**

| SN | Roles of government in promoting technology-based learning in Nigeria | Mean | SD | Remark |
|---|---|---|---|---|
| 1 | Building and equipping ICT unit in schools | 3.59 | 0.67 | A |
| 2 | Employing ICT personnel to man ICT unit | 3.37 | 0.87 | A |
| 3 | Organizing workshops and seminars for ICT personnel | 3.48 | 0.63 | A |
| 4 | Sponsoring educative programs on radio and TV stations | 3.53 | 0.73 | A |
| 5 | Approve grant for the running of the ICT centers | 3.25 | 0.83 | A |
| | **Average mean**                **3.44** | | | |

Table 4 revealed the result of the analysis that answered research question 4. It was observed that all the items raised on the roles of Government as stakeholder in promoting technology based-learning were agreed upon by the respondents with average mean value 3.44.  In item 1, 3.59 of the respondents agreed that Government's' role as stakeholder is to build and equip ICT in all educations institutions, even in villages, towns and cities so that all asunder  will

have access to it. In item 2, with mean value 3.37 of the respondents agreed that Government's role as stakeholder is to employ personnel to man ICT centers. In item 3, with mean value 3.48 of the respondents agreed that Government's role as stakeholder is to organize workshops and seminars for teachers on how to use technology so as to be vast in educational technology. Item 4 seeks the view of the respondents on Government roles in sponsoring educative programmes on radio and TV and other social media which was agreed upon with mean value 3.53.

Research Question 5: What are roles of students in promoting technology-based learning in Nigeria?

**Table 5: A Mean And Standard Deviation Table Showing The Result To Research Question Five.**

| SN | Roles of students in promoting technology-based learning in Nigeria | Mean | SD | Remark |
|---|---|---|---|---|
| 1 | Students become more engaged in the learning process | 3.48 | 0.64 | A |
| 2 | Participating and contributing to the radio and TV sponsored educative programmes | 2.92 | 0.88 | A |
| 3 | Making positive use of ICT gadgets both at home and in school | 3.07 | 0.83 | A |
| 4 | Adjusting instruction, providing support and feedback | 3.24 | 0.76 | A |
| 5 | Using it to create flexible, adaptable assignments and group work. | 3.10 | 0.79 | A |
| | **Average mean** | **3.16** | | |

Table 5 revealed the result of the analysis that answered research question 5. It was observed that all the items raised on the roles of students as stakeholder in promoting technology based-learning were agreed upon by the respondents with mean value 3.16. In item 1, with mean value 3.48 of the respondents agreed that students' role as stakeholder is that it makes them to become more engaged in the learning process. In item 2, with mean value 2.92 of the respondents agreed that students' role as stakeholder is when the students participate and contribute to radio or TV educative programmes. In item 3, with mean value 3.07 of the respondents agreed that students' role as stakeholder is to make positive use of ICT both at home and in school. Item 5 seeks the view of the respondents on students' roles on the use of technology to create flexible, adaptable assignments and group work which was agreed upon by the respondents with mean value of 3.10.

**Discussion**

The findings of this study revealed in research question 1 that all the items raised were agreed by the respondents to be the roles of teacher as stakeholder in promoting technology based learning in Nigeria. The respondents

agreed that teacher's role is to make use of technology while teaching the students by switching to Computer Assisted Instruction (CAI) vis-à-vis making lessons interactive, active and flexible. This also allows learners to learn at their own pace and take learning beyond four walls of class room.  The respondents also assented to the creativity on part of teacher to plan instructions to care for all ability levels in the class and accommodate different teaching methods. Finally, the respondents agreed that it is the role of teacher to mobilize PTA, old students and well-wishers to support the use of technology in teaching and learning. These findings aligned with that of the researcher who stated that wireless technologies such as laptop computers, mobile phones, especially smart-phones, create a revolution in education that transform the traditional classroom-based learning into lifelong learning which have worked well.[14]

Findings in research question 2 revealed that the respondents agreed that PTA, old students and philanthropist can play their roles as stakeholders in technology-based learning by building, electrification and equipping  ICT centers in schools as it was observed in item 1,2 and 3. Furthermore, they agreed that when the aforementioned associations donate money for the maintenance of ICT centers and giving prize and scholarship to best students in ICT will promote technological-based learning

Furthermore, finding in research question 3 showed that the respondents agreed with all the items. They asserted that provision of ICT gadgets for children at home. Buying data for children so as to access the internet and monitor the children while using ICT to curb them against downside uses of it. Equally the respondents indicated that buying recorded and educative software for their children and guide the students on how to use ICT gadgets and material at home are the roles which parents can play in contributing their quota to the promotion of technology based learning in Nigeria. The importance of this is to allow learners to learn at their convenient time and to do independent reading. This finding support the submission of the researchers that concluded that parents have a major influence on their children's achievement in school and through life.[15]

 It was observed in table 4 that all the items were agreed to be the roles Government can play to promote technological-based learning. This signals that it is the role of Government to: building and equipping ICT unit in schools, employing ICT personnel to man ICT unit, organizing workshops and seminars for ICT personnel, sponsoring educative programs on radio and TV stations and approve grant for the running of the ICT centers. But where government tarries, other stake holders in education can step in to rescue the situation

It was observed in table 5 that all the items were agreed to be the roles students can play to promote technology based learning. This indicates that it is

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[14] P. Chipunza, "*Using mobile devices to leverage student access to collaboratively-generated resources,".*

[15] A. Henderson and Mapp, K. L. "A New Wave of Evidence,"  2002.

the role of the students to become more engaged in the technology-based learning process, participating and contributing to the radio and TV sponsored educative programmes, making positive use of ICT gadgets both at home and in school, adjusting instruction, providing support and feedback and using it to create flexible, adaptable assignments and group work. This is in alignment to Erickson cited by[16], if children are encouraged and reinforced for their initiative, they begin to feel industrious and confident in their ability to achieve goals

The major findings of the study indicated the roles of teachers are to strategically and technically plan instruction by making use of technology to foster teaching and learning and to mobilize parents and associations in the community to donate technological-based educative material to schools; the roles of PTA, old students and other community organizations are to build ICT centre, well equipped and giving award and scholarship to outstanding performed students in ICT; parents are to provide ICT gadgets for their children at home and monitor them so as to guide against downside uses of ICT; government roles in promoting technology-based learning are to building and equipping ICT unit in schools, organize workshop and seminars for teachers on ICT and making positive use of ICT gadgets both at home and in school and participating and contributing to the radio and TV sponsored educative programmes as roles of students in promoting technology based learning.

## CONCLUSION

The study explored the roles of stakeholders in promoting technology based learning in Nigeria. It was concluded that building and equipping of ICT centre is very germane for government, PTA old students association and philanthropist. However, teachers are to strategically and technically make use of technology to foster teaching and learning in Nigeria while students are to making positive use of ICT gadgets both at home and in school. It was recommended that Government, PTA and old students associations are to build well equipped ICT centre in schools as this will boost the use of ICT in schools; workshops and seminars are to be organized for personnel in ICT in schools by the Government so as to improve their service delivery; parents are to provide ICT gadgets at home and monitor their activities and teachers are to change from face-to-face method of teaching to blended learning and technological-based learning.

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