

ICT Integration Situation in the Primary Schools in Bundibugyo District

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Abstract

The purpose of this study was to investigate the factors affecting ICT Integration Situation in the Primary Schools in Bundibugyo in Uganda. The study used a cross-sectional research design with a sample size of 189 respondents (60 pupils and 129 teachers). Stratified and simple random samplings were used as sampling techniques while questionnaires and interviews were used as research instruments. The study found that the factors that are affecting the use of integrated ICT in the primary schools in Bundibugyo include lack of teacher preparedness, lack of learners' preparedness, and lack of administrative preparedness.

The study recommended that: Teachers should be made prepared to use integrated ICT at primary school level by receiving frequent ICT related trainings. The National Curriculum Development Centre (NCDC) should ensure that the approach is incorporated in the curriculum.

The learners should be mentally prepared and gradually introduced to use integrated ICT so that they can grasp the content progressively without getting discouraged or frustrated with the ICT-enhanced learning process. Finally, the school administrators should support learners by providing ICT-related books in the library so that the learners can make further discoveries. Similarly, the school administrators and Primary Teacher Association (PTA) members to ICT technical experts in their schools to provide technical assistance such as repair, installation, maintenance, technical advice to teachers and learners.

Key words: ICT Integration Situation And Primary Schools

Background Of the Study

The rapid growth in Information Communication Technology (ICT) in the 1960s brought about the birth of e-learning in education system in the United States and European Schools. This brought remarkable changes in the twenty-first century especially in the education sector. This is because Education in the world over has been recognized as an important means for promoting economic and social development both at individual and national levels. By integrating ICT during regular classroom instruction, teachers demonstrate to the students' innovative ways of teaching and learning. Countries like United States, Australia, Japan, Malaysia and

Philippines have ongoing initiatives on ICT integration in education (Venkatesh et al., 2021).

In most parts of Africa, the purpose of e-learning integration has been to catalyze a pattern shift towards "21st century learning" and support "Education for All" goals at various levels throughout the regions education system (Victoria et al., 2023). However, there is no basic infrastructure to enable the integration of e-learning even to provide basic access to digital information.

In Uganda, despite the recognition e-learning has received at all education levels; there is still very limited adoption and effective utilization (Richard et al., 2023). Several e-learning initiatives at the lower

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education levels, for instance have concentrated on putting into place ICT infrastructure that supports e-learning with very limited emphasis on content development and pedagogical aspects. Notably in partnership with the Ministry of Education and Sports is Uganda Connect-UConnect (2007) which has provided 34 Primary Schools with computers and internet facilities in the urban areas. It comes as no surprise that the ICT facilities in most cases have been used for administrative computing and

computer skills development with no activity related to e-learning (Anthony, Kazaara, Kazaara, et al., 2023).

This study adopted TPACK Model for Technology Integration by Mishra and Koehler (2008) for teaching – Technological Pedagogical Content Knowledge. TPACK is a way of thinking about the knowledge teachers need to understand to integrate technology effectively into their classrooms (Mishra & Koehler, 2008).

Problem Statement

E-learning integration into the classroom teaching using 3D pictures, videos, and audio tapes, can make pupils' learning more learner-centered and participatory than the conventional learning approach (Christopher, Moses, et al., 2022). This is because when pupils watch a 3D animated English language lesson or Mathematics, or religious education or any other subject; they will be more interested in the motion pictures because it interests them. Accordingly, when the teacher explains to them what is in the motion pictures, they will be able to remember it so easily. For example, when ABCD alphabets are given to pupils in lower classes in cartoon format, they will be more interested in learning thus their learning will be enhanced. Unfortunately, majority of primary schools in Uganda, Bundibugyo inclusive still use teacher-centered approach of teaching hence making children less involved and thus making them become consumers of information disseminated by the teachers (Anthony, Kazaara, & Kazaara, 2023). Limited infrastructure and little expertise in the use of digital technology tools (Oye et al. 2011); attitude towards the technology, quality of the content in the eLearning and multimedia technology, e-learning and multimedia technology quality, support by ICT technical staff, and stakeholder involvement (Moses, 2023). To further compound the lack of eLearning integration in education system of Uganda, there are only a few researches to attest to this fact and the few have been done at the secondary school level (Okidi, 2006), or university level (Kigozi et al., 2011; Kituyi & Tusubira, 2013). To the best of the researcher's knowledge, there is no empirical study on eLearning integration at the primary school level in Uganda. Unfortunately, it is also still difficult to integrate ICT into the primary school setting because of lack of a suitable framework. It was therefore imperative that the current study be done to come up with a comprehensive framework for integrating ICT in primary school setting (Christopher, Komunda, et al., 2022).

Several factors that hinder the full scale integration of eLearning in the education system of Uganda have been noted to include but not limited to: high cost involved, socioeconomic and technological conditions, lack of a systematic approach to teaching and learning, awareness and attitudes towards digital technologies, administrative and technical support, staff development (Ntirandekura et al., 2022),

Objectives of the Study

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To investigate the factors affecting ICT integration situation in the Primary Schools in Bundibugyo

Review Of Related Literature

As illuminated by Ramirez-Montoya, Mena, and Rodriguez-Arroyo (2017), teachers' preparedness to use ICT in education effectively, together with their digital competence, becomes central and recognized as being a key element for the construction of useful pedagogical knowledge for practice, thus improving students' learning.

Moreover, teachers' acceptance of technology integration in lessons and the use of innovative techniques to infuse 21st-century skills is vital to ensure the successful implementation of technology integration in the classroom (Oromo et al., 2023). Government decisions during the Covid-19 pandemic have resulted in the closure of many schools. This has made it necessary for teachers to work online where they face the prospect of designing lessons, homework, assignments and assessment suitable for online learning. Many teachers who report having little or no training in technology are faced with a major change in their practice. Change is usually done in small steps, testing what works and what does not, however the speed of response to the Covid-19 pandemic has not allowed for a slow and steady approach. In effect, almost overnight the nature of teachers' work shifted radically (Brighton et al., 2023). It moved into uncharted territory where there are no guidelines and where much of what works in person may not work online. Milman (2020) describes this teaching online response to the crisis as Emergency Remote Teaching (ERT) and not just online teaching. Hodges et al. (2020) also propose that ERT is a more suitable term.

Methodology of the study

The study used a cross-sectional research design. Cooper & Schindler, 2003; Best and Khan (2009) argued that cross-sectional research describes and interprets phenomena and is concerned with conditions relationships that exists, opinions that are held, processes that are going on, and effects that are evident or trend that are developing. The choice of this research design is justified since the study aims at identifying the general characteristics of Primary Schools in integrating ICT. The study population was 4,553 participants who included teachers, head teachers, and pupils from 157 Primary Schools in Bundibugyo (Bundibugyo District Education Report, 2018). However, the study using stratification method targeted 12 Schools thus making the target population to be 363 teachers, head teachers, and pupils. On the other hand, one head teacher was selected from each School to participate in an interview. The sample size was determined using Krejcie and Morgan (1970). According to Morgan Table, a sample of 363 participants is estimated at 191 respondents. In this study, a structured questionnaire was designed with specified answers and restriction of respondents' ideas limited. This makes it simpler to analyze considering the use of a standardized analytical tool in analyzing huge sample size in this study (Rogers, et al., 2011). The study adopted inflexible interview approach. Inflexible (rigid) interview approach is when the wording and the wording sequence of questions are planned before and they are also asked in a planned manner (Kumar, 2011). Data Analysis was done using Statistical Package for Social Scientists (IBM SPSS, version 22.0) software (Nelson et al., 2022). This process involves data editing, data coding and data entry into the computer for analysis. After processing (i.e. editing, coding, entry into the computer, and checking) the collected data, the researcher

analyzed it. The analysis involved frequency counts and percentage distributions were used to analyze data on the demographic characteristics of the respondents. In addition, frequency, and percentage distribution table were used to determine teachers and administrative preparedness in integrating ICT and availability, accessibility, and usability of ICT resources.

Results

This section captures information regarding teachers' preparedness to use integrated e-learning in terms of technological pedagogical content knowledge, availability of ICT resources, accessibility of ICT resources, and user-ability of ICT resources. The following gives the summary of the findings. (85.3%) of the respondents strongly disagreed that they can teach their subjects easily using a projector (mean = 1.22, Std = 0.640). This implies that the teachers in the surveyed primary schools do not have the knowledge and the competence to use a projector when teaching. In addition, (86.8%) of the respondents strongly disagreed that they can easily teach students how to prepare a PowerPoint presentation (mean = 1.17, Std = 0.470). This implies the teachers lack Microsoft Office skills and exposure hence not able to give what they do not have. Likewise, (89.9%) of the respondents strongly disagreed that they can easily teach students how to search internet resources to get updated information about their subject area (mean = 1.16, Std = 0.522). This implies that teachers lack internet usage and hence cannot search updated information to teach students neither do they know how to teach internet usage to their pupils. Additionally, (88.4%) of the respondents strongly disagreed that they can teach students how to use a computer to solve academic problem (e.g. mathematics, geography maps etc.) (mean = 1.17, Std = 0.532). Lastly, (87.6%) of the respondents strongly disagreed that they can easily use a whiteboard during their teachings (mean = 1.17, Std = 0.486).

Learners Preparedness to Integrated ICT in their learning processes

This section captures the level at which learners are prepared to embrace ICT Integration in their learning adventure. Below is the summary of the findings; ICT resources are available in their schools: computers in classroom, internet connection, projector, website, email, computer laboratory, and whiteboards. This implies that lack of these ICT resources makes it impossible for pupils to integrate ICT in their learning escapade.

Secondly, the result shows that pupils cannot access ICT resources in the classrooms, computer laboratories, libraries, and school compounds of their schools. This implies that if ICT resources are not accessible to the pupils then it cannot be implemented, leave alone receiving integrated eLearning.

Finally, the results show that all the respondents indicated that the following ICT resources are not usable in their primary schools: computers, projectors, whiteboards, internet/email, computer labs, software packages [e.g. Microsoft Office]. All these narrows down to the fact that ICT resources are not accessible neither are they available. This therefore answers the question that says "what are the factors affecting ICT integration situation in the Primary Schools in Bundibugyo?"

Administrative Preparedness to Support Integrated E-Learning

This section captures information regarding technical support [e.g. offering ICT training opportunities for teachers], financial support [e.g. buying ICT resources like computers, projectors etc.], and managerial support [e.g. head teacher encouraging teachers to often use computer during class lessons].

The result shows that administrative preparedness to support ICT Integration in the surveyed primary schools is still not possible. This is because majority, (100%) of the respondents strongly disagreed that they are prepared to provide technical support to promote ICT integration. This implies that the head teachers and PTA members do not provide teachers with the opportunities of ICT training. In addition, (100%) of the respondents strongly disagreed that they are prepared to financially support ICT integration. This implies that the head teachers do not have budget for purchasing computers or installing internet or hiring a technical expert in ICT. Lastly, (100%) of the respondents strongly disagreed that they are prepared to managerially support integration of ICT in teaching and learning. This implies that the head teachers do not encourage teachers to often use computer during class lessons. Although the teachers cannot use what is not available or what they themselves are not trained to use.

Conclusions

The factors that are affecting the use of integrated ICT in the primary schools in Bundibugyo include lack of teacher preparedness, lack of learners' preparedness, and lack of administrative preparedness. The teachers are not prepared because they are not trained to use ICT resources and they do not have access to computers, internet connection, projectors, whiteboards or websites. Why, because these resources are not available in their schools thus affecting ICT integration. In addition, the pupils are not prepared to use integrated eLearning because they lack ICT skills and there are no ICT resources in their schools to facilitate skills acquisition. Likewise, the administrators are not prepared to support the use of integrated eLearning in their schools because they lack the financial resources and ICT skills to dispense its implementation in the teaching-learning processes. However, this study has come up with the most effective framework for integrating ICT in primary schools. This framework captures aspects of availability of ICT resources, accessibility, and usability, with both electricity and internet connection. In addition, the framework presents teachers, learners, and administrator's preparedness as possibilities of ICT integration

Recommendations

The findings of this study indicate that the factors that are affecting the use of integrated ICT in the primary schools in Bundibugyo include lack of teacher preparedness, lack of learners' preparedness, and lack of administrative preparedness. Therefore, this study makes the following recommendations in that regard:

Teachers should be made prepared to use integrated ICT at primary school level by receiving frequent ICT related trainings. That is to say, the National Curriculum Development Centre (NCDC) should ensure that the approach is incorporated in the curriculum. It should be holistic, i.e. cater for all learners in all spheres.

Furthermore, the learners should be mentally prepared and gradually introduced to use integrated ICT so that they can grasp the content progressively without getting discouraged or frustrated with the ICT-enhanced learning process.

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Additionally, the school administrators should support learners by providing ICT-related books in the library so that the learners can find time to make further discoveries on their own.

Similarly, the school administrators and Primary Teacher Association (PTA) members should employ ICT technical experts in their schools to help provide technical assistance such as repair, installation, maintenance, or technical advice to teachers and learners.

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