Integration of the 21st Century Technologies in Religious Education Methodologies in Secondary Schools in Uganda

Abstract: The study examined how 21st technologies can be integrated into Religious Education (RE) methods of teaching in secondary schools in Uganda. With the exponential growth in the past, devices used to enhance educational technology, learners can learn anytime anywhere, thus, the need to integrate the new technologies in the teaching of RE in secondary schools to make it more relevant in the 21st century. Of particular importance, is the notion that, in the 21st century, the teaching of RE is no longer concerned with imparting morals and passing of national examinations as it has traditionally been, rather, the teaching of RE ought to be concerned with empowering learners with lifelong skills that enable them to meet the new demands of development and market economy that are driven by technological innovations. There is no doubt, therefore, that the 21st century ought to be characterized by rapid advancement in technology and most secondary schools in developed countries have embraced the application of these new technologies in teaching.

Keywords: Integration, Technologies, 21st Century, Religious Education and Methodologies

INTRODUCTION

The design of 20th -century teaching emphasized time-based memorization of facts based on teacher-centered methodologies which are too outdated to meet the market demands of the 21st century. In the past students were passive learners of content and demonstrated understanding through routine learning of memorization of facts and summative assessments. The 21st century has seen a dramatic shift in the economic model for industrialized countries, therefore, needs skills that support creativity, flexibility, innovation, collaboration, fluency in information, and communication technologies. Old pedagogies focused on memorialization and transmission of content to achieve the mastery of knowledge, which cannot measure up to 21st -century market demands. Besides, the new pedagogies of the 21st century are based on teacher-student partnership in the learning process. New pedagogies based on technology are used to discover and master content and enable the deep learning goals of creating and using new knowledge in the world (Swallow, 2017). According to Marcus (2019), using technology in RE lessons expands the classroom, promotes face to face environment, online, and blended learning. Technologies such as smartphones and blogs promote among RE learners note-making, research, collaborative intellectual exchange through sharing notes, production of new knowledge and resources.

Various studies carried out by Fullan and Langworthy (2014) and Marcus (2019) about technology integration have highlighted the necessary shift in teaching and learning strategies towards dynamic learning environments. Research in technology in education indicates its undeniable use in RE classroom environments. Therefore, the primary challenge for teachers of Religious Education is to align the subject curriculum, teaching methodologies, and learning to economic models based on a global knowledge-based workplace. To prepare RE students for future work and life that emphasizes new knowledge construction, teachers of RE should integrate technology into their teaching methodologies.

With new technology replacing basic skill competencies, schools are tasked to shift the RE curriculum and teaching to support the broad idea of 21st-century learning and future work preparation. The traditional methods of teaching the subject which is centered on lecture methods, dictating notes, textbook use, desks lined in rows, and paper -pen note-making are too outdated to compete with 21st-century demands (Swallow, 2017). Technological innovations enhance RE student-centered learning in addition to changing the very way the secondary school executes teaching and learning processes. Technological innovations are taking a variety of forms, placing the learner rather than the institution at the center of the innovation design. Thriving in today's fast-changing world requires a breadth of skills rooted in academic competencies such as literacy in technology, cooperation, collaboration, resilience, critical and creative thinking, communication, and networking. This interplay of skills is central to both the concept of the breadth of skills as well as the educational strategies needed for the RE students to approach societal issues with technology (Winthrop, McGivney, Williams, and Shankar, 2016). Technological innovations have a major influence on RE teaching methodologies in the teaching and learning processes (Swallow, 2017).
Besides, the 21st-century demands and market practices necessitate RE secondary school teachers to make adjustments in their teaching methodologies to embrace new technologies. Social networking tools are helping teachers and students to build connections and network with alumni to support their career pathways. Technology is enabling blended teaching, changing RE curricula, and spawning rich forms of online research and collaboration (Economist Intelligent Unit, 2008; Marcus, 2019). With this backdrop, Utkarsh- Lokesh (2013) and Fokide (2017) add that technology is a tool to aid Religious Education teaching-learning processes, and it should not be used as a separate tool but should be integrated into all subjects taught in all classrooms. Besides, any learning concerning technology should be based on the theme and objectives of the subject to be taught and the goals of education. Using technology enhances in RE lessons students' critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate tools and resources. It is against this background that 21st-century technologies need to be integrated into the teaching and learning of Religious Education to propel a generation that meets the job demand markets.

UNESCO (2017) challenges education systems to respond to the pressing need of integrating technologies into learning objectives, content, and pedagogies to empower learners with lifelong skills. This is because integrating technologies into pedagogies can develop sustainable competencies, new skills for learners, values, and attitudes that lead to more sustainable lifelong learning and communities. Goal 4 of SDGs is about ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. In this context, integration of technologies in RE will help the learner use the skills acquired in all opportunities throughout their lives, apply the acquired skills and knowledge in everyday situations to promote sustainable development and to empower fellow young people. Besides, the integration of technologies in Religious Education promotes a learner-centered approach in which learners engage in action and reflect on their experiences in terms of the learning process and personal development rather than the mere transfer of knowledge and passive learning. Furthermore, the application of technologies in RE lessons enhances the learner-centered approach which requires learners to reflect on their knowledge and learning processes to manage and monitor them.

Technologies are powerful tools for RE application for their efficiency which enables tasks to be carried out more quickly and easily. Technologies can provide the RE teachers the potential to access local, national, and global resources not usually available in the classroom environment (Fokide, 2017). Besides, if integrated with RE, technologies promote interactivity, cooperation, and communicability which enables RE learners to interact with sources or other people in a way not possible with their teachers or books. It can also be extended to video conferencing with other partners teaching RE at national and international levels to bring together diverse populations of learners to explore different views on a particular topic or joint project. It enables pupils to engage in active learning and to be creative in how they explore, express, and present their work. Through the application of technologies, RE teachers can create their classroom materials and activities using ICT sources and networks. Besides, social media networks such as WhatsApp, Twitter, and Facebook provide the teacher with information about happenings in the world of RE or religious issues in the diaspora. Technologies can also be useful tools for the dissemination of useful information and happenings in the world about religions. Technologies enhance learners' understanding of RE to make informed decisions about the need to study the subject and its relevance for the communities they live in (Reade and Artley, 2010; Marcus, 2019).

From the account of the use of technology in RE, it provides access to information, the ability to communicate, and opportunities to collaborate on a universal scale unparalleled to the prior decades. Preparing students to become active and effective contributors in this knowledge-based connected world, requires a fundamental change in educational pedagogy (Fullan & Langworthy, 2014; Swallow, 2017). Current developments in technology continue to open up new opportunities for Religious Education potential to enhanced communication, collaboration, and promotion of communication at a global level (Reade and Artley, 2010). Religious Education provides a unique context and opportunity to understand technology integration in the curricular processes and pedagogical approach. As RE teachers are trying to re-shape RE learning in the 21st century, they need to recognize the importance of integrating new technologies in the subject and its contribution to academic scholarly and students' marketability in the employment world. Understanding the growing need for RE- technology integration in support of 21st-century skill development emerges as an important issue in secondary schools and the need to prepare them to move forward with technology initiatives. RE teachers should use their knowledge of the subject matter to facilitate experiences that advance student learning, creativity, and innovation in the classroom environment. Notably, RE teachers are mandated with the responsibility to design and develop digital age learning experiences and assessments, incorporate contemporary technologies to maximize content learning in the context of the new technologies (Swallow, 2017).

Furthermore, the ICT policy for Uganda (2008) demands that all teachers use technologies in their teaching approaches at all levels of education. However, research carried by Nankya Ndidde, Lubega, Meng Yuqiu; IAR J Huma Soc Sci; Vol-1, Iss- 4 (Nov-Dec, 2020): 259-266
Babikwa, and Baguma (2010) and Bandhana (2012) found that many primary and secondary teachers were not trained to apply technologies in their pedagogies. They also argue that the integration of technologies into pedagogy should contribute positively to the students’ learning processes. In this respect, teachers need to know when, why, and how to use appropriate technological applications and resources in the subjects they teach. This integration if applied in RE lessons can develop high-level learning skills and support individual differences among students. This implies that the RE teacher should take into consideration learners’ capacity and literacy levels of different technologies in their environment, their interests, intelligent quotient levels, individual response and characteristics, and learning strategies of the learners. It is important to note that the current approach to teaching RE does not meet the 21st-century market demands, thus, the need to adopt new approaches that embrace educational technology.

### Types of technologies that can be used by the RE teacher in the classroom environment

Technologies used in teaching RE classroom lessons among others include: computers, the internet, broadcasting technologies (radios, televisions), and telephones. In the Ugandan education system, technologies such as the telephone, radio, and television are in operation as ICT and instructional tools are used in some schools on a small scale. Besides, radios and televisions have for years been used for language instruction (Ndawula, Kawuma, Mwebembezi, 2013). The 21st-century RE teacher can use digital videos with their learners to develop learning materials that express a wide variety of learning outcomes. Furthermore, RE teachers and students can record visits to religious sites and interviews with members of the community to develop a presentational material that expresses a wide variety of learning outcomes including students’ reflections. Using digital video can stimulate students’ reflections during classroom presentations in addition to arousing health discussions. After watching the digital video, RE students can prepare questions stimulated by this video for discussion with their teacher and even write a report of the observed lessons (Becta, 2010). RE students can use digital media to network, communicate, and work collaboratively in their academics and support each other in learning and contribute to the learning of others. Digital tools can be applied to gather, evaluate, and assess learning (Thiemann, 2016). According to Schreiber and Siege (2016), the use of media by teachers and students is very important as it addresses globalization issues in all its diversity in real-life situations. Teachers and students can get information through watching Television, surf the internet, use social networks, blogs, and Twitter, exchange knowledge using mobile phones through SMS, and WhatsApp via smartphones. Skills in computer application and information sciences are very important in improving RE teachers’ professional careers and participation of learners in school activities.

In this respect, schools have to meet the challenge to have their staff integrate the fast-growing technologies in their pedagogies to open up opportunities for individual students and communicative lessons.

Religious Education students can use interactive whiteboards to record their suggestions and contributions arising from class discussions with the teacher and other materials developed from websites (Becta, 2010). Reade and Artletly (2010) argue that when used effectively, the interactive whiteboard may provide opportunities for higher quality RE learning experiences. Electronic whiteboards are very effective in teaching small and large groups. Whiteboards promote interactive learning in such a way that the teacher can project teaching content from a laptop to help the students understand quickly. In flipped learning, students can use their personal computers or handset devices to watch lectures hosted on school servers culminating in a class discussion based on videos.

In Macedonia, Mirascieva, Petrovski, Gjorgjeva (2011) acknowledge that in RE lessons, the internet is used most often for research and search for learning content and information. Internet technologies, whether it is a computer networking class or sending e-mail messages, improves teacher-student communication skills. Besides, smartphones have the potential for supporting instruction through WhatsApp, e-mails. Downloads, telegrams, and Zoom. Significantly, the programs for word processing, graphics, and photography, graphics, movies online, and offer new opportunities for students to present their RE project work. An important dimension of RE teaching with internet technologies is to know how to critically approach this technology, think about and evaluate the contents to be taught. For RE teachers, it is useful to know the teaching support systems such as relevant internet pages, platforms for RE, blogs, Wikipedia, and other instructional media support systems to make RE teaching interesting. Teachers can also use technology systems to keep track of students’ attendance, achievement, and attainment (Becta, 2010). Technology especially the internet provides the opportunity for learners to express themselves and share their experiences. Therefore, RE teaching based on traditional approaches is not required anymore. Technology dominates individuals’ everyday lives and offers means for the dissemination of religious views and teacher educators’ views regarding technology and teaching of RE. Technology may have an impact on how religion is taught and experienced in class in classes (Tomaselli, 2015; Karamouzis and Fokides, 2017).

Digital tools such as blogs are becoming increasingly popular among RE teachers who are making the best of technology for teaching-learning processes. Mind-mapping software is a teaching-learning tool that can enhance learners’ skills to
critically think about pictures. It facilitates brainstorming and learners' critical thinking (Becta, 2010). Teachers are also using sites such as Wordle to create learning materials and assessment in RE. In such sites, learners can put all words they can think of that are connected to the topic of study into wordle, then at the end of the topic, they can repeat the same exercise and compare the words as a way of assessing themselves. Students can access support materials from the school learning environment. Wordle sites can be used to develop learners' higher-order skills and knowledge base (Becta, 2010). Teachers of RE can also use electronic communication mechanisms such as e-mails and SMS to communicate with colleagues, parents, policymakers, and the wider community. Teachers of RE can contribute to the school learning environment by informing learners' parents about the work that takes place in the classroom, the performance, attendance, and moral behaviors of their children (Becta, 2010).

Benefits of integrating 21st Century Technologies in RE

The 21st-century teacher needs to be familiar with new technologies and be able to integrate them into Religious Education classroom teaching-learning processes. The use of technology in learning helps the students to interact with content, instructional materials, interface with the instructor, and the rest of the learners in that class. Technologies can support learning arrangements in the classroom environment and enhances the production of technically literate teaching professionals. Notably, technologies can connect the learners and teachers to the source of information (Melita Mara Katitia, 2015). According to Becta (2010) integrating 21st-century technologies enhances Religious Education teaching-learning processes in the following ways;

a) Making use of a range of different technologies can cater to different learning styles;

b) Enabling learners to collaborate with peers and partner schools through the exchange of materials;

c) Processing course work and examination results, therefore, tracking students' performance;

d) Enhances subject knowledge, accessing information, sharing of knowledge and information, and professional development in RE.

Furthermore, the 21st-century teacher of RE can use new technologies to access RE learning materials online that may not be available in the school library. Teachers can also make use of quality recorded video materials to develop the critical thinking of RE learners. Learners can also access online materials for revision on different websites (Becta, 2010). Thieman (2016) argues that technology should be introduced in the content to be taught to make students align these new dimensions of knowledge with 21st century needs. It should give opportunities for students to apply the relevance of technology to their everyday lives. RE teachers should use technologies to enhance their productivity, professional practice, understand the social, ethical, legal, and human issues surrounding the use of technology in the learning-teaching environment of the subject. In the wider education, emphasis on the integration of ICT in teaching-learning processes has a multiplier effect by; enhancing learning and providing students with new skills; students relax from the traditional methods of learning and improves teachers' training in new skills of delivering content.

Taking into consideration that technologies are important for developing skills and lifelong learning but they are absent in most secondary schools like Uganda. Computers, laptops, smartphones, tablets, and the internet which have the potential for supporting instruction are not enough and most of them require stable energy sources. In other words, the integration of technologies in RE requires stable electricity that is readily available. A constant supply of electricity impedes the integration of technologies in RE teaching (UNESCO, 2020). In Macedonia, RE teachers use photo slide shows, movies, videos, computer programs, the internet, CDs, and other technologies that support learning visibility (Mirascieva, Petrovski, Gjorgjeva, 2011). The Uganda White paper (Uganda White Paper, 1992, page 76-78) recommends that Information Technology (IT) be included as one of the vocational subjects in the secondary school curriculum. This is because IT encourages secondary school students to articulate their different affiliations and define their respective historical cultures and tradition. IT also informs students about what is going on in the world. Technologies act as a central role in students' academic performance and networking.

Barriers to Technology use in Religious Education Lessons

Barriers to technological adoption in RE teaching may include; lack of enabling factors such as availability of technology equipment, knowledge, and skills; lack of trained personnel; limited resources for staff; cost factors; management issues; reliability of technology systems and networks; software; disruption of energy; time, security and infrastructure. Whereas these barriers to technology adoption in RE exist, it is a new source for the creation of quality jobs and alleviation of poverty for the majority of RE unemployed graduates (Becta; 2010). Whereas technology is not a solution to 21st-century education problems, it is effective, time-saving, and has potential increased outcomes (Utkarsh- Lokesh, 2013). Many secondary school head-teachers are spending money investing in technology but they don't know how to use it. Yet, these school head-teachers do not spend money on training teachers on how to properly use technology to the extent that interactive whiteboards end up being glorified as television sets in the classroom or simply used as regular whiteboards. In the majority of secondary schools, teachers use computers primarily for administration and not for instructional activities with students, whereas teacher trainees in universities are
using technology with their students, they are not preparing preservice teachers to integrate technology in their teaching subjects. Technology integration in secondary schools is limited due to costs related issues and skilled human resources (Thieman, 2016). Rigid higher education and secondary school curriculum influence approach to training teachers. There is the resistance of teacher educators and teacher trainees to change and embrace the use of new technologies in their methodologies. Some teacher trainers are not yet aware of the new trends that are driving education such as 21st-century skills and SDGs (Kagoda, 2020). Yet, the contemporary society needs teachers who are creative, adaptive, resilient, critical thinkers, innovative and ready to embrace change to propel the achievement of the SDGs by 2030 (Dengerink, 2015; UNESCO, 2020).

Utkarsh- Lokesh (2013) notes that as the internet and its application have evolved, it is evident that digital technologies are transforming ways in which content knowledge is delivered to students. Many RE teachers have identified their lack of knowledge of technology and ownership as one of the main barriers to using ICT. A digital divide exists between the technology knowledgeable teachers and non-knowledgeable teachers in the RE teaching profession. This lack of knowledge-based RE teaching personnel may hinder technologies' adoption and application during teaching processes. In the present knowledge-driven world, it is significant for RE teachers to adopt teaching methodologies that enable learners to have a competitive advantage in the employment market. New technologies have the potential to provide opportunities for RE transformations in the teaching profession and employment market. In many developing countries technology usage in the classroom environment is very low due to a lack of formal policy, financial resources, basic infrastructure, and teaching staff with appropriate skills. Additionally, internet use and availability are neglected in most secondary schools in Sub-Saharan Africa. While technologies are being introduced in education in most countries, expansion remains slow due to a lack of effective policies, infrastructures such as the internet, equipment, and electricity. These necessities make the integration of technologies in teaching very difficult. Significantly, technologies cannot replace teachers or poor teaching, and this requires further training for the teaching staff which also necessitates funding (UNESCO, 2020).

Consequently, the use of technology in teaching in RE requires prospective teachers to have used the facilities and is familiar with the use of ICT in their classes. This calls for the teacher to have skills in operating particular technologies, which includes knowledge of operating systems and computer hardware. The teacher should also know how to use word processors, spreadsheets, browsers, and e-mails as a means to deliver RE lessons. Important to this, teachers need to be trained on how to use technology and digital learning (Melita Mara Kattia, 2015). In Uganda, the national ICT policy was initiated in 1998 and approved in 2003. Among others, the policy recognized the strategy to incorporate ICT in educational curricular and provide for equitable access by students at all levels of learning (Ndawula, Kahuma, Mwebembezi, and Masagazi, 2013) of which its use in RE teaching should be considered seriously.

Conceptual Framework

Integration is the act of bringing together smaller components into a single system that functions as one (The Free Dictionary,2015). In the context of this study, integration is the process that aims to use technologies in Religious Education teaching. It is about using laptops, computers, smartphones, videos, whiteboards, etc in Religious Education lessons. The aim of integrating technologies in RE methodologies is to increase student learning, attention, engagement, motivation, meeting individual needs, and interaction.

Technology means the application of scientific knowledge to the practical aims of human life or the change and manipulation of the human environment. It is the application of scientific knowledge to solve practical problems (Encyclopedia Britannica,2019). With teaching Religious education, computers and other technologies have penetrated all spheres of life today, without passing by Religious Education. Teachers of RE have to adjust to new changes in the 21st century if the content they are to be relevant for preparing their students for the labor market.

In this study, technologies include devices such as; computers/laptops, projectors, whiteboards, the internet, smartphones, blogs and broadcasting. Technology is a tool for research, communication, creativeness, innovation, collaboration, problem-solving and decision making which are essential for the teaching-learning environment. Through them, students can demonstrate creative thinking, construct knowledge, and develop innovative ideas using technology (Thieman, 2016). Technology is applied to scientific knowledge in practical ways. Technology does influence the religious beliefs, values, traditions, and practices of people. This implies that there is a spiritual dimension to considering the nature of life in a technological world. It is important to explore the theology of technology in society and the learning curriculum. Religious doctrines, beliefs, moral issues, and value systems have something to portray about the RE curriculum in a technological world (Bull, 2016). Besides, its benefits, technology remains a disruptive innovation because it is an expensive resource, may be insufficient and a lack of trained staff impedes the adoption of new technologies. Teaching RE will become more outcome-based and learner-centered if methodological and instructional paradigms shift to the application of technologies. Instead of focusing on teaching methodologies that enhance the memorization of content by students, RE teachers will focus on the application of technical
Knowledge to solve methodological issues. Textbooks and printing materials are being replaced by online materials, thus, RE teaching techniques should match the current trends in technology evolution.

21st Century is the current century of the Anno Domini era following the Gregorian calendar. It began on 1st January 2001 and will end on December 31st, 2100. It is distinct from the century known as the 2000s, which began in January 2000 and will end on December 31st, 2099 (Tsisana, 2015). It is an era characterized by freedom and technological advancement. The technological advancement informs the teacher of RE on what to teach and how to teach it. These technological advancements have affected many areas of the way we teach, communicate, and learn. 21st-century advocates for learner-centered teaching and using technologies.

Religious Education in secular usage is the teaching of a particular religion and its varied aspects, beliefs, doctrines, rituals, rites, and personal roles. It is concerned with learning to be humane and helping others to make the best of their humanity (Wikipedia the Free Encyclopedia, 2019). In this study, Religious Education is the subject taught to teacher trainees in colleges and higher institutions of learning, who are aspiring to teach the subject in secondary schools after completion of their study. The methodology is a system of practices, techniques, procedures, and rules used by those who work in a discipline. It is a branch of pedagogies dealing with analysis and evaluation of subjects to be taught and of the methods used in teaching them. It is a system of methods and principles used in a particular discipline (British Dictionary, 2012). The methodology is strategies used to teach a particular subject, for this particular case, Religious Education.

Technology acceptance Theory

Technology acceptance Theory was derived from the theory of reasoned action to measures users’ perceptions of and intentions to use technology within and across organizations. It is used to ascertain individual acceptance of the use of any new technology (Moman & Maoun, 2017). In the context of RE, the theory is used to ascertain whether Religious Education teachers can embrace the use of new technologies in their teaching methods or reject its use as they cling to their traditional methods of chalk and blackboard. Technology acceptance has become one of the most significant subjects used in many disciplines in colleges and institutions of higher learning. Universities have continued to invest in technologies to be relevant in the 21st century, this implies that RE teachers should make use of these technologies to be more relevant in the 21st century. RE teachers should have positive attitudes towards technology use to exploit the advantages that go with it. Traditional methods of teaching RE are too outdated to address challenges of learning such as those that were ushered in by COVID 19 and lockdown, which resulted in the closure of schools forcing millions of children to be out of the classroom. COVID 19 changed the traditional way of learning, giving a distinctive rise to e-learning, where teaching is undertaken remotely using digital platforms. With e-learning as a new element in teaching brought about by COVID 19, RE teachers have to either embrace or reject technological integration in RE lessons, but in the post-COVID 19 pandemics, the way to go is to blend technology with RE traditional methods of learning to be relevant in the 21st century.

Methodology

This study was a qualitative case study that investigated the integration of the 21st Century technologies in Religious Education methodologies in Secondary Schools in Uganda. Random sampling was used to select participants in the study to avoid bias. The participants were comprised of 30 RE teachers from government schools; 30 from private schools and 20 RE teachers from international schools, 140 students, and 60 parents who were randomly selected. Instruments for data collection included interviews, observation, and documentary analysis. Schooling children who are day-scholars were given interview items to take to their parents to get their opinions about the use of technologies in RE teaching. The purpose of involving parents was to establish whether technologies are used by parents to follow up with their children’s education.

Results

This section covers data presentation and interpretation of the findings from different respondents who are teachers, students, and parents. The findings are presented under different subheadings.

Teachers’ Experiences of Using Technologies in Religious Education classes

This study confirms that in the 21st-century integration of technologies into RE lessons is the most appropriate strategy to adopt to enhance the learning-teaching processes at all levels of education. On the integration of new technologies in teaching, RE, study findings revealed that it has the potential to improve teaching-learning processes as attested by one female student teacher who had this to say during an interview session: Most of us teachers, like our learners, are not trained in the use of computers. I have not had an opportunity to use a computer and they are not available for staff, except the one in the headmasters’ office which is used for entry of students’ records and assessments. In times of crisis like COVID 19 which led to the closure of schools and lockdown, I would have continued my lessons online but I had no training and the majority of students I teach are from rural areas where there are no televisions, radios, internet, and electricity. Besides, very few students have smartphones that can be used for online learning, and even then those who have them are unable to buy data.
The integration of appropriate technology into religious education has the potential to improve teaching-learning efficiency. Findings revealed that most religious education teachers have not significantly integrated new technologies into actual classroom teaching-learning processes. Application of new technologies in teaching is presently considered a key skill in line with Education policy. It constitutes indispensable support to the teaching and learning in the schools especially in times of crises like COVID 19 where learning was disrupted forcing 15 million Ugandan schooling children to be locked in their homes. It underpins the performance of many educational activities. It offers unprecedented opportunities to enhance educational systems and improve policy formulation. Exposure of Religious Education (RE) students to educational ICT has a significant and positive impact on their achievement especially in terms of acquisition of knowledge, comprehension, practical development of skills, and presentation skills. It improves their access to RE both in its distance learning and online tutorials. Information and Communication Technology in Education generally improves students' learning and better teaching method.

Teacher trainees were asked to identify the types of new teaching technologies that are used in RE classes to facilitate their teaching-learning processes. One of the teachers of RE in international school mentioned different types of technologies they use when teaching the subject; Whereas our students are not allowed to have phones in class but during lessons as a CRE teacher I can ably use digital videos and media, interactive whiteboards, computers, laptops, projectors, smartphones and broadcasting radios. But we are faced with many challenges as many of us are not trained to use technology facilities, these devices are inadequate in the school, lack of institutional support and conservatism of both teaching staff and administration to embrace new changes.

Results from interviews also indicated that the majority of the RE teachers who use technologies in their lessons are in international schools compared to government and privately owned schools. The study found that technologies were very important aspects that developed knowledge and understanding of RE lessons. It improves the status of teaching RE as a subject, consolidating, and deepening learners' knowledge and their progress. Religious Education teachers can assess themselves on how well they are teaching and they interact with learners and monitor their progress. In contrast to the above, an RE teacher from one of the private schools who was interviewed and preferred anonymity said; We use chalk and markers to write on the interactive whiteboard arguing that their presence in class is a problem since they replaced the blackboard where they used to write all their teaching content without any hindrance.

This narrative reveal that some teachers are still conservative, yet interactive whiteboards enhance the way teachers deliver their content and students learn. Another teacher who was interviewed mentioned that; School headteachers buy outdated computers or get donors who dump old computers and laptops in their schools. These computers are too slow to open and sometimes do not open at all. In some cases, the government donates some computers to schools but they are kept in the headteachers’ offices or library without use.

Results from interviews with RE teachers indicated that new technologies promote interactive learning during lessons. It further revealed that technologies have enabled learners and teachers to discover new content and information which enrich their teaching-learning abilities. Through technology, teachers can download a lot of content, organize videos about different religious events which helps learners understand in-depth religious education teachings. RE teachers were of the view that technologies are so important in executing administration and planning duties. Teachers can upload attendance registers into their computers, monitor student attendance to establish those who miss classes or dodge lessons. Technologies are used for processing students' marks, making mark lists, report forms, and monitoring of continuous assessment of individual learners. Students were asked about the benefits from teachers' usage of technologies in teaching RE and one of them studying in government-aided schools had this to say; It is a wonderful experience to use technology in our lessons as it enhances our learning and interacting with real-world experiences, promotes critical thinking, participation in the lesson is increased, communication skills are developed, it's exciting and keeps one alert, exposed to current innovations, doing things in a new way enhances problem-solving, Increases prospects for self-employment.

The narrative above reveals that technologies enrich learning experiences by making learning real, fun, and enables the teachers to accommodate different learning styles. Technologies aid RE learning as it increases students' flexibility, sharing with peers, instant assessment, and feedback. Besides, the above narratives suggest that the use of various technologies in RE maximizes students' experiences in learning, can be used to monitor students' attendance/ progressive reports, communicate with parents of the learners and can download their children’s performance. Besides, the use of technologies in RE was found to promote interactive and active learning, teaching becomes learner-centered, learners can ably present their group findings, promotes teachers’ competence, bridges knowledge gaps, motivates and impacts on learners' activities and access to new RE content or information on the internet.
In a related but different incident, on students' benefits from the teachers' usage of technologies in RE, a student in Senior Five class from one of the international schools visited, who preferred anonymity was excited when their teacher used a laptop and a projector during RE lessons and had this to say; 

Coming to class with a computer excited the whole class, as the teacher slowly prepared to fix it to a projector. The whole class was eager to see how the lesson would be projected on the white wall. The lesson was about how youth spend their leisure during the holidays. The teacher had captured so many videos depicting those events. The lesson was so exciting, thrilling, and touching, more so, when he projected videos of secondary school youth at the beach engaged in reckless dancing, fornication, and drunkenness. I said to my heart "Oh God, teach me how to spend my leisure time decently so that I do not perish". The message from the videos was eye-opening, educative and it left every student touched. How I wished our teachers at Ordinary level secondary school had taught me using this new method in our class, I would be a different person now. Whereas the teacher's lesson was exciting, he told us that it was not possible to use the projector and the laptop in each lesson because they were shared by teachers of other subjects.

The study findings also suggest that technologies have ensured students' collaboration and networking among their peers, they can access information and ideas from different people. Through the use of smartphones, they can socially interact with each other, network, and discuss RE issues through social media platforms such as WhatsApp, Facebook, telegram, YouTube, and others. Besides, learners can apply technologies in solving day-to-day problems, analyze situations, critically think, communicate information, and be able to develop models and ideas that can transform their lives. Technologies increase students' engagement and participation. Application of technologies in RE promotes targets of SDGs and 21st -century skills that learners need in the employment market.

The study findings further indicated that several parents use new technology to get involved in their children's learning while at school through communicating with their teachers. Parents tried to establish daily performance, behaviors, and even class attendance of their children while at school. This creates positive parent-teacher relationships which in turn encourages them to support the learners where there are learning gaps. It was also established that students' knowledge of their parents' involvement in their learning through the use of technologies enhanced their self-esteem, interest in learning, and they got more organized not to disappoint their parents. In line with this, a parent who preferred anonymity revealed that; 

I download my child's performance on the internet, follow up her behavior by texting her teachers, monitor visitation dates, get communications about my child's needs and pay fees.

From interviews with another parent about teachers integrating technologies in their RE lessons, she had this to say; 

Teachers should focus on modern technologies to keep pace with current changes or else, they are left behind. Our children are never the same after exposing them to how these technologies work and their significance for now and future, it was through a simple SMS that the headteacher called me to pick my daughter from school when she had an acute attack of pneumonia.

The findings from the interviews suggest that parents have keen interests in the teachers' use of new technologies in RE lessons. Parents were of the view that the application of new technologies in RE lessons enhances their children's future career opportunities and prospects in the world of employment. Parents argued that using technologies in RE lessons helped their children understand nature and the mysteries of life. New technologies increased their children's potential to engage in online learning and allow parents to track their children's academic progress and general behavior while at school.

**Teachers Response on barriers to Technology use in RE**

The study indicated that there are so many barriers to technology use. From observation, it was found out that the majority of schools have insufficient computers and laptops due to limited resources. While teachers lack skills and knowledge on how to use technology. There are also high costs for internet services and electricity. An RE teacher who preferred anonymity said; 

I like using technologies in teaching but I cannot afford data for the internet because it is taxed by the government. At school, only the administration building has the internet and I find it hard to frequent there in case I want to download some teaching materials. There is also the issue of COVID 19 which has made me poorer because the school I work in is private and during the lockdown, I was not paid because management relies on fees from students to pay staff. I cannot buy data when my children have no food to eat and when I am staying in a rented house which I pay for on monthly basis.

The study findings indicated that the government imposed Over the Top (OTT) taxation on phones making it harder for teachers to buy data. Upgrading the technological facilities is expensive and most schools do not have the trained manpower to handle the equipment. In Ugandan schools, students are not allowed to own phones, yet they facilitate learning and open new opportunities for teachers and learners. Internet is very expensive given the fact that most schools at least have more than forty students per stream at an ordinary level. The study established that
Besides the barriers identified, students and teachers can apply the knowledge acquired in technologies to their daily lives and world of work, thus, the more reason to embrace integrating technologies in RE teaching. In schools where students use tablets for learning, when they are given homework, their parents may not help them because they might not be familiar with the skills on how to use them.

**Discussion**

In Uganda, the majority of RE teachers were found to be using textbooks as the major source of lesson contents, blackboards for making notes and illustrations, enter students' grades manually and keep their records only in files which is outdated. The majority of RE teachers lacked skills in technologies such as the operation of laptops, computers, projectors, and other soft/hardware, yet, technology is a significant tool for both economic advancement, national growth and, the global market. The majority of RE teachers were found not applying Technology Acceptance Theory but preferred their traditional methods of delivering content. Similarly, studies carried out in Nigeria by Chidi Hechukwu & Nkechi Uchemi (2014), found that application of ICT technologies (computers, ROMS, GSM phones, projectors Audiovisual, Videotapes cameras, filmstrips, etc.) in RE were of paramount importance. In the same vein, a study conducted in South Africa by Erma (2014), found that the use of technology in RE eases obstacles such as geographical distance and time differences in the context of accessing content. Learning RE can also take place anywhere anytime as long as one has the appropriate technologies and teachers' guidance. Skills acquired through integrating RE along with technology have the potential to impact individuals and the wider society. Integration opportunities can bring new life to RE training and equipping students with new knowledge that may enhance their employment opportunities. There are numerous options available in the world of technologies that can be applied and impact in RE training of learners. Technology assists RE teachers to save time and opens up choices for students and trainees.

This study complements those undertaken by Eady and Lockyer (2013) and Marcus (2019) which highlight many types of technologies that have dramatically changed learning styles. Teachers use computers and interactive whiteboards in classes. Technology in schools has become mobile, with laptops, computers, tablet devices, and smartphones forming part of the teaching and learning processes. Integration of technologies in education allows teachers to design meaningful learning experiences that are embedded in technology. In this way, teachers draw upon their expertise and experiences in what to teach and how to teach it. It helps teachers keep up to date with curriculum developments, new educational policies, and advances in technology, and the latest technological tools available. The study found that teachers' integration of technologies in RE lessons excites students, enhances their active participation in-class activities, and collaboration in groups, creativity, and tolerance of their peers’ views. Similar studies conducted by Swallow (2017) in RE in a Catholic school found that integrating technologies in RE teaching facilitated, advanced, and inspired student learning, collaboration, and creativity.

Elaborating on the benefits of the use of technologies in the RE classroom, Bandhana (2012) acknowledged that technologies make learning more direct, practical, experiential, learner-centered, useful, and joyful. Learners’ practical and theoretical engagement in learning is conceived as the core goal of a good education. In this context, teachers of RE should engage in professional development to formulate a proper understanding of adequate competence with the educational uses of technologies. The dynamics of the use of technologies requires training of RE staff and the institutional willingness to avail technological infrastructures and systems to use in the learning environment. In this context, teachers need to know why, where, what, for who, when, and how to use technologies in their content and pedagogies. The effective use of technologies in RE lessons depends on the potential awareness and willingness of teachers to apply these systems in class and engage in an appropriate selection of content, materials, and to develop mechanisms for coping with difficulties of the learning environment, time, and class management.

Comparative analysis of a similar report by Reade and Artley (2010) demonstrated that primary and secondary schools have an opportunity to use technology throughout RE lessons. Pupils and their teachers need to develop their skills and understanding of the use of technology in RE to keep pace with developments. It is significant to note that ICT is transforming the learning, working life, and environment of the vast majority of schools. Drawing from a similar study conducted by Eady and Lockyer (2013) in Australia, technology is seen as part of teachers’ toolbox and it is among the resources that teachers use to help facilitate student learning. Advances in technology have influenced the way people create, share, disseminate, and develop information in society. Significantly, integrating technologies in different learning situations provides an important ground for students’ future life. In this regard, RE teachers are challenged to keep pace with societal changes and prepare learners for their future roles in society and the job market. These are some of the reasons why teachers should integrate technologies into their lessons. It has also been shown that integration of technology increases motivation, engages learners, caters to different learning styles, and improves learning outcomes.
The study also found that only a few students offered ICT as a subject. More so, private schools were better equipped in terms of using technologies compared to government schools. The majority of RE teachers used computers and laptops for teaching, entering students’ marks, and making reports. This study supports findings by Nankya Ndidde, Lubega, Babikwa, and Baguma (2010) who also acknowledge that in most secondary schools in Uganda, ICT is offered as a subject and this limits integration of technologies in pedagogy to only those teachers who train ICT students. Yet, the government of Uganda challenges all teachers at all levels of schooling to integrate ICT in their pedagogies. Their study findings revealed that in Ugandan primary and secondary schools, for students who offered ICT, student – computer ratio was very high especially in government-funded schools compared to private schools. In some government schools, it was found that there were two computers in the whole school, whereby one was for the Headteacher which was in the office and another for the teachers to enter marks for students which was in the staffroom. Besides, the cost of internet and maintenance was a big challenge for most schools.

In a study carried out by Karamouziz and Fokides (2017), it was found out that technological devices have a significant impact on all aspects of humanity, including religion. The established religions have a strong digital presence to have direct access to believers. Technology also provides the means for communication of a wide range of religious beliefs that might otherwise be largely unknown to non-participants. Technology also allows the development of religious activities such as teaching the subject in schools and reading texts for worshipping congregations. Setbacks in the use of ICT materials in RE included the failure of teachers and students to make use of the technologies due to lack of knowledge, phobia, and conservativeness. Many RE teachers in government-funded schools, also lacked personal computers and laptops due to high costs and school reluctance to purchase them for individual teaching staff.

The majority of secondary schools were found to have outdated computers and laptops which were either bought by headteachers or were given as donations. Similarly, Utkarsh-Lokesh (2013) contends that whereas schools are still using outdated technologies, they must invest massively if they are to remain relevant. One of the key aspects of the 21st Century is to promote student-centered learning but quite often whiteboards have turned to be teacher-centered learning resources due to their limited knowledge on how to use them. Complementary studies carried out by Erma (2014) indicate that a variety of technology tools available provide every opportunity for RE teachers with excellent opportunities to optimize their levels of teaching and training support. In the 21st century, RE teachers don’t need to cling to traditional teaching methods such as dictating notes which a teacher-centered approach is, but teachers should accept to apply Technology Acceptance Theory. Technology can be used to supplement classroom activities, expand online teaching-learning processes, and introduce blended learning opportunities as well as build mentor-mentee-relationships. Technology proved itself to be a means through which is a sense of belonging, created through different social networks. Technology enables a model of teaching and learning in which RE can inform the learners of their values, provide space for lifelong skills and interaction with society in a broader way. The focus on teacher-student interaction can provide a public platform where important issues affecting teaching RE can be raised and dialogue on the identified issues can henceforth commence.

Becta (2010) and Utkarsh-Lokesh (2013) concur with the view that teachers’ application of technologies in RE can allow teachers and students to share ideas, enhance critical thinking, raise self-esteem with online content, teachers can create up-to-date content in form of written notes, photos, audio and videos that can be presented in lessons using technology. Miller (2017) argues that in the digital age, religious education teachers should integrate technology into their dynamics of teaching. The gatekeepers of traditional religious education will continue to feel threatened by new technology like virtual reality, wireless devices, and social networks if the Acceptance Theory of using new technologies are not applied in teaching the subject. Today's teachers of RE will have to adapt and accept to use the new technology pathways to religious life and teaching. Religious Education teachers will have to adapt as their role will continue to change because the content is more within the reach of their learners (Melita Mara Katitia, 2015; Miller, 2017). As teachers of RE continue to plug in and engage with technology in their teaching activities, they must do so with caution. Technology should not demolish the institutionalized religion.RE teachers should be mindful that technology left unchecked could have negative effects on the learners’ spirituality. A related study conducted in Geography by Kagoda (2020) found that teachers and learners are not innovative enough to provide computer lessons, acquire skills that motivate learners, and enhance career development. The technology was found to be of great significance in learning but may also distract student's attention and concentration if not well supervised by the teacher.

Similarly, studies conducted by Albugami and Ahmed (2015) in Saudi Arabia found that many countries are investing in new technologies in Sub-Saharan schools but many teaching staff is illiterate in matters of technology. The study found that 90% of the teachers were not qualified in ICT procedures and needed training but funds were not enough. Some headteachers lacked leadership skills due to various barriers experienced in ICT use and its implementation in various learning and leadership areas. Teachers had no time to prepare ICT materials for lessons and to
successfully integrate technologies into classroom activities. Teachers as providers of information and knowledge were reluctant to adjust to new technologies and more so, integrating them in their teaching activities. Furthermore, the number of students in classrooms, insufficient amounts of ICT resources along with technical support, maintenance, and the absence of incentives were found to be barriers to the integration of technologies in various subjects. Optimism, fear, negative attitudes, lack of training, absence of infrastructure, financial resources, maintenance, and technical assistance were found to be a hindrance to ICT use in the classroom environment. A study conducted by Nankya Ndidiwe, Lubega, Babikwa, and Baguma (2010) in Ugandan primary and secondary schools and institutions of higher learning, found that the majority of teaching staff did not integrate technologies in their teaching due to limited skills. Acceptance theory is evident in the majority of the teaching staff not trained in pedagogical integration of technologies, therefore, the majority of teachers of RE choose not to use technology in their lessons.

Findings of this study also indicated that purchasing technologies such as computers, laptops, the internet, projectors, and maintenance were found to be barriers to integration. Related studies conducted by Eady and Lockyer (2013) in Australia, found that integration of technologies pedagogy required funding, time, patience, and diligence. Lack of teacher expertise and professionalism in technology skills, institutional support, resources, infrastructure, and budgets militated against the integration of technology in teaching and learning processes. Unfortunately, some donated computers were found kept in the school store unused because teachers did not know how to use them. RE teachers felt that if they were trained in the technologies, they would embrace integrating them in their subject to be on par with 21st-century demands. Knicker (2001) said how wonderful it would be if a professor of the Old Testament could stand in front of a television camera and broadcast lectures to the widest audience. The religious right has learned to use the technology, but many teachers need to catch up. Teachers of the 21st century need to be fluent in using technologies in their lessons.

Basing on technology and its role in 21st-century education as discussed in this study, Lokesh (2013) and Marcus (2018) noted that the place of technology in pedagogy is based on various factors and questions of effectiveness, time-saving and increased outcomes. The majority of schools invest in technology without consulting the teaching staff about their knowledge and skills. Concerning Technology Acceptance Theory, many teachers do not know how to apply technology in teaching; yet, schools are spending a lot of money to buy various technologies without training teachers on how to use them. Besides, the majority of the teachers of RE are not willing to accept new changes or replacing their traditional way of teaching. In this context lack of teachers’ knowledge on the use of technologies result in incidences where interactive boards end up glorified as television sets in the classroom or simply used as regular whiteboards and sometimes ends up in teacher-centered learning activities because the teacher spends most of the time talking. In some cases, school headteachers buy outdated technologies, yet for technology to be relevant, constant investment has to be made in that technology, its replacement, and updating. Additionally, technology is too expensive for many schools, thus, the functionality of the technology becomes limited.

This study established that the major purpose of integrating technologies in RE teaching-learning processes is to give a better value of knowledge and also to impact the learners’ understanding, skills, performance, and achievement. This is because using technologies in RE class can engage the learners in the three domains of learning which psycho-motor, cognitive and affective domains are achieved. Teachers of RE should apply Technology Acceptance Theory because using technologies in RE lessons provide a wide range of sensory stimuli, creates virtual learning realities; and enhance experiences for learners’ various situations. Strengthening the findings of this study, Bandhana (2012) argues that the traditional way of teaching is challenged by an unprecedented rapid creation and dissemination of knowledge and information in an attempt to create a knowledge-based society that knows how to use information. Integration does not mean the placement of hardware in the classroom but technologies must function, sound, and go beyond information retrieval to problem-solving. Technologies must facilitate teaching-learning activities; provide relevant examples and demonstrations, changing the orientation of the classroom, preparing students for employment, increasing flexibility of knowledge delivery, increasing access, and satisfying public demands of efficiency of the outputs of education.

**Conclusion**

Secondary school RE teachers are challenged to embrace Technology Acceptance Theory to train in and integrate 21st-century technologies into their classroom teaching-learning strategies. This implies that school administrators should invest in training their teachers on how to integrate new technologies in their classroom teaching for the benefit of the learners. The benefits of integrating technology in RE lessons are far-reaching; learners are capable of applying what they have learned in ICT to other opportunities and the job market. Technology Acceptance theory challenges teachers to accept change because integrating technologies in RE, strengthens students’ learning processes when combined with the appropriate pedagogical approaches. Application of technologies and resources in the direction of the given subject matter motivates weak students; increases interest in learning, develops higher-
order learning skills, and supports individual differences of students. Integration of technology in RE changes the learning styles and cognitive experiences of the learners reflects their real needs and can apply the knowledge acquired in real-life situations mostly self-employment.

**Recommendations**

1. Policymakers should promote the integration of technologies into pedagogies at all levels of education by funding availability, sustainability, access to technologies, and training of staff;
2. School headteachers should put in place an enabling environment for the RE teachers to train, access, and integrate new technologies in their learning;
3. Teachers should have the zeal to change their traditional methods of teaching, train and integrate technologies in their pedagogies;
4. Students should task their RE teachers and headteachers to train them in technologies that promote lifelong skills

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