Publisher's note:

The author(s) of the article submitted the same article to more publications at the same time. A position in regard has been solicited and expected from Islamic University in Uganda and University of Somalia (UNISO).

European Journal of Education Studies
ISSN: 2501 - 1111
ISSN-L: 2501 - 1111
Available online at: www.oapub.org/edu

DOI: 10.46827/ejes.v10i5.47891 Volume 10 | Issue 5 | 2023

INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN SCHOOLS: IMPLICATIONS FOR CURRICULUM REFORMS IN SOMALIA

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Abstract:
The term information and communication technology is commonly used to refer to a wide range of human endeavors. In Somalia, from 2013 until now, the Ministry of Education has developed the primary and secondary curricula, and by 2020, it will have written the curriculum, syllabi, and textbooks in educational institutions and used ICT equipment. This paper focused on the integration of information and communication technology in schools as a veritable tool for curriculum reform in Somali schools. In Somalia, ICT infrastructure is frequently a deficient resource in academic institutions. It is usually challenging for institutions to offer advanced curricula due to limited resources. Many teachers lack the basic set of skills to use technology such as a lack of understanding of how to integrate ICT into their curriculum development area. Since the teacher's duties include implementing the curriculum to fulfill the requirements of the students, the teacher may need to develop lesson plans and syllabi within the parameters of the provided curriculum. Curriculum reform can be seen as a process that aims to change the objectives of learning and the way learning takes place. Recommendations provided in this paper were: the Ministry of Education should think about offering training programs or hosting in-service workshops, ICT facilities and equipment to Secondary schools so as to make curriculum reform.

Keywords: computers, curriculum, curriculum reforms, electronic devices, information communication technology, integration

1. Introduction

Curriculum plays an important role in the field of teacher education. The curriculum is the planned interaction of pupils with instructional content, materials, resources, and

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processes for evaluating the attainment of educational objectives. Today, information and communication technology (ICT) is of first rate in curriculum development and reform. In areas other than education, namely economics, and the military, the potential of information and communications technology (ICT) to improve human capacities and Curriculum development was first acknowledged. Both in the office and at home, there is a widespread understanding of the value of ICT contributions (Kali, 2018, p. 33).

ICTs have changed the way educational institutions function as well as the content and ways in which learning is delivered and acquired. It seems to sense that the creation and execution of curricula are inextricably linked. This is because ICT can help curricular objectives be met by fostering a learner-centered environment (Tella & Adu, 2019, p. 57).

Midoro (2018) observed that different learning theories, including behaviorism, cognitivism, and constructivism, all make use of ICTs to improve teaching and learning. ICTs are employed to more closely match the unique qualities of the learner from a behaviorist standpoint. The student can acquire knowledge and (routine) abilities at their own pace with the help of drill-and-practice applications and straightforward tutorials.

In cognitive theories, such as Jean Piaget and The Information-Processing Theory views, the mind as a system that processes information concentrates on the cognitive comprehension of intricate ideas and abilities. The development of reasoning and problem-solving abilities for clearly defined information and skills in certain subject matter domains is assisted by intelligent tutorials. Therefore, Cognitive theories focus on cognitive understanding of complex concepts and skills. Intelligent tutorials help the learner in developing reasoning and problem-solving skills for well-defined content and skills in specific subject matter domains (Midoro, 2012).

Constructivist theory, on the other hand, states that the student must actively engage in the learning process to construct new knowledge and understanding, ICT applications that support collaborative learning (like discussion forums, shared workspaces, and virtual worlds), can be incorporated into learning environments that support constructivist learning and ICTs in support of significant curriculum changes and reforms. Instead of the new curriculum content, new goals are aimed at competencies needed in the knowledge society, such as Information handling, meta-cognitive skills, and collaborative skill.

ICTs in the required curriculum frequently highlight how important it is that students learn about ICTs in education (the social rationale). Computer literacy, information literacy, media literacy, and digital literacy are all phrases used to describe learning about ICTs. The term "literacy" is frequently associated with the usage of ICTs. Now that ICTs are pervasive in society, it is even more crucial for students to learn how to use them effectively (Lii, 2022, p. 5).

ICT literacy refers to the skills and knowledge with which ICT is used in daily life. ICT fundamentals, file management, word processing, spreadsheets, databases, making presentations, locating information and communicating with ICT, social and ethical concerns, and employment opportunities with ICT are some of the topics covered. Application of ICT in Topic Areas: this refers to the use of ICT tools in the study of

particular subject areas, such as the humanities, social sciences, natural sciences, and mathematics. Measurement, modeling, simulation, robots, feedback devices, statistics, making visuals, spreadsheet design, and database design are some of the subjects covered (Joyce, 2016).

ICT integration across the curriculum is discussed to show how different topic areas can be combined using ICT to work on projects and address problems in the real world. There are some instances to demonstrate how ICT can assist students in integrating many subjects, such as math, science, and art, inside a single course. There are also examples of bigger projects that integrate ICT into the community or international projects that involve multiple courses and schools.

Abraham (2020) reports that Information and communication technology (ICT) was effectively incorporated into several curricula as part of the reform process to give students knowledge of fundamental and applied ICT features that can make learning noticeable and accessible while also boosting professional output.

2. The concept of information and communication technology

Abi (2019) describes ICT as "*all forms of electronic structures utilized for distribution of telecommunications and mediated communications*" in the middle of the 1980s, with examples including computers, video games, cell phones, the internet, electronic payment systems, and computers.

The term "information and communication technology" (ICT) is commonly used to refer to a wide range of human endeavors. A micro-electronic-based combination of computing and communications is used to gather, process, store, and disseminate verbal, practical textual, and numerical information. However, it is a broad word that embraces any form of communication, including radio, television, mobile phones, computer networks, hardware, software, email, satellite systems, and numerous related services and applications. It also covers the use of multimedia and Internet technologies (Nkomo, 2013).

The word "ICT" has also been used to refer to a group of related technologies that are used to gather, store, edit, and transmit data in a variety of formats. ICT refers to the use of Internet-based technology and computer-based technology to the provision of information and communication services to a broad audience.

Tafai (2017) argued that the technology called ICT is used to facilitate information-related activities. These tasks involve obtaining, processing, storing, and displaying data. Collaboration and communication are becoming more and more important in these tasks. The field of information and communication technologies may be broken down into three parts: the technology itself; the content that the technology helps to transmit; and the communication process that the technology supports and acts as a conduit for the information.

2.1 The utilization of ICT in curriculum development in Somalia

Every developing nation in the world must prioritize integrating ICTs into the curriculum and include it in their overall national learning strategy. We live in a technological age where information and communication technologies (ICT) are essential to the majority of activities, which is why this is the case. All students have the chance to become proficient, selective, creative, and productive users of ICT by using it as a tool for learning across the curriculum. Through the efficient use of ICT, they are better able to meet curriculum objectives (Tella & Adu, 2009, p. 57).

In Somalia, from 2013 until now, the Ministry of Education has developed the primary and secondary curricula, and by 2020, written the curriculum, syllabi, and textbooks in educational institutions and used ICT equipment. Therefore, ICT has a great impact on the development of the curriculum and reform in Somalia (Ibrahim et al., 2020). ICT is a new tool that is used in quality education, the quality of education depends on advanced curriculum, reform, and implementation, and although some universities in the country lack ICT equipment, this is evident in the fact that blackboards and chalk are still being used for teaching and learning in schools. which is a challenge in African countries, but there are universities such as the University of Somalia, SIMAD University, and Jamhuriya University that are very advanced in ICT (Tanad, 2018, p. 9).

The creation of new professions and improvements to current jobs as a result of the development of ICTs in society require new curricula at all levels of education. Students must grasp ICT literacy to become full-fledged members of society due to societal developments. Although many people are aware of ICTs' potential as a teaching and learning tool, their implementation is frequently challenging, leaving only a small number of students globally with the chance to learn using ICTs. The idea of education and curriculum is evolving as a result of societal developments (Gedi, 2015, p. 8).

2.2 Utilization of computers in reforming curriculum in Somalia

The curriculum has not been revised since the Somali government fell in 1991. However, the Ministry of Education has reformed the Somali curriculum in secondary schools several times since 2013, using ICT such as computers and the Internet.

To connect ICT tools and useful software to the primary goals and objectives of the established curriculum, a review of the curriculum is also required (Mwikali, 2014). Therefore, curriculum reform is a process of making changes that are good for education policy, fixing what is wrong, improving from deficiencies, initiating ideas, instilling innovations and action plans, and completely overhauling the curriculum to reflect quality training for the changing environment. Any educational system can implement this transformative approach to bring about a systematic shift in educational theory and practice.

Any curriculum must be adaptable and dynamic to keep up with developments and remain relevant. Therefore, revamping any curriculum entails redesigning it to incorporate new information, abilities, and practices. To enhance teaching and learning in the contemporary technological library environment, curriculum reform in higher

education institutions ensures a flexible teaching and learning environment that combines new technology, learning approaches, and facilities. underlined the need for a dynamic curriculum for it to be effective. As a result, the curriculum needs to be updated frequently to reflect the environment's changing needs. The primary noteworthy change in the new curriculum is that ICT is now a crucial component of the majority of disciplines taught in schools (Ajia, 2023).

2.3 Challenges of ICT in the curriculum

In Somalia, ICT infrastructure is frequently a deficient resource in academic institutions. It is usually challenging for institutions to offer advanced curricula due to limited resources. Every university in Somalia has continual issues with costs and sustainability when trying to update the curriculum or add new, complicated resources like ICT.

ICT skills and knowledge are lacking, making it difficult to build or update the curriculum when it is necessary. Many teachers lack the basic set of skills to use technology such as a lack of understanding of how to integrate ICT into their curriculum development area. For example, how to improve curriculum to use ICT for data analysis; or to reform curriculum on how to use technology to learn basic factors in the reform (Abdi, 2023).

Chebiwot (2020) argues that once the curriculum has been mostly determined, instructors must look for the appropriate required resources to match the course objectives. Finding a solution that is both student-friendly and effective for your course is frequently challenging, if not impossible. This is much too frequently the case with both traditional publisher textbooks, but new possibilities like personalized digital course materials can allay these worries.

2.4 The challenges regarding curriculum development in Somalia

Each level of the curriculum development process requires teachers to think and act about the needs of society. However, the process that teachers are expected to follow is not always apparent. For instance, in Somalia, the majority of teachers lack the training and expertise required to take part in curriculum development. They have several difficulties when it comes to their involvement in curriculum creation because their approach to participation in the process is poorly defined and very difficult for teachers (Rwigema & Andala, 2022).

2.5 The teachers' role in curriculum development

According to Alsubaie (2016), there are several tasks and responsibilities for the instructor involved in curriculum organization. Since the teacher's duties include implementing the curriculum to fulfill the requirements of the students, the teacher may need to develop lesson plans and syllabi within the parameters of the provided curriculum. In Somalia, Teachers can contribute by effectively and collaboratively engaging with curriculum development groups and specialists to organize and produce lessons, textbooks, and

content. To align curriculum content with students' needs in the classroom, teacher involvement in the curriculum creation process is crucial.

2.6 Concept of curriculum development and reform

The curriculum is crucial to the subject of teacher education. The planned interaction of students with instructional content, materials, resources, and systems for assessing the achievement of educational goals is referred to as the curriculum. The term "curriculum" has numerous connotations. The term "curriculum" has other definitions as well. The word "curriculum" comes from the Latin verb currere, which means "to run," and denotes a route that one runs to accomplish a goal (Midoro, 2012, p.43).

According to Carrl (2020), "*a broad and ongoing process in which structure and systematic planning procedures feature heavily from design through evaluation*"; this is how the definition of curriculum development is put. This definition is accepted for this study because it covers every element, including design, dissemination, implementation, and evaluation.

According to Jaghav and Patankar, (2013), the process of developing a planned curriculum for instruction, training, and exhibition modalities. It is a phrase used to describe the process of establishing and putting into place exact curriculum-related instruction rules. It explains how educational institutions and various training organizations organize and direct learning, which can take place in groups or individually. The stakeholders in the education system and the needs of society dictate modifications to the curriculum as it is developed. The process of producing a curriculum goes through numerous stages, including preparation, planning, designing, creating, implementing, evaluating, reviewing, and improving.

Curriculum creation has traditionally been viewed as the preparation for an ongoing teaching and learning process in a formal institutional context. The methodical, dynamic processes of planning, development, implementation, and evaluation of curricula are responsive to place and time. Curriculum reform can be seen as a process that aims to change the objectives of learning and the way learning takes place.

3. Conclusion

The development of the curriculum is crucial for providing students with the right lessons and other activities they need to master the course's core abilities. It supports learners in achieving their aims and objectives and aids teachers in selecting their teaching strategy. Curriculum developers and designers must take into account the advantages of technology while creating the ideal curriculum for students. Therefore, to make their curriculum more appealing and relatable, higher education institutions are thinking about embracing digital technologies.

3.1 Recommendations

The following recommendations were proffered:

1. For teachers in educational institutions to be able to use the computers after the renovation project is over, the Ministry of Education should think about offering training programs or hosting in-service workshops.
2. The administration of various institutions and the government should create an environment that is supportive of developers' and designers' use of ICT in curriculum development and reform.
3. The government and education stakeholders should provide all the relevant ICT facilities and ensure adequate training for educators to enable them to utilize ICT effectively for curriculum tasks.

The government should provide ICT equipment to Secondary schools to make curriculum development and reform

Conflict of interest statement
The authors declare no conflicts of interest.

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