Coronavirus Era: Implications for Reconceptualization of Curriculum Delivery in Kenyan Primary and Secondary Schools

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Abstract

The school curriculum encapsulates what a progressive society, based on the pluralist values of liberal democracy, believes its future citizens should know and be able to do. In this respect, the curriculum should serve the immediate and long-term needs of all students. However, COVID-19 has uncovered the inequities that have existed in curriculum and delivery, especially in developing countries. School closures due to COVID-19 have resulted in actual learning wastage. The primary question is: what changes in curriculum and delivery are essential to improving equity and learning access within this pandemic context? Therefore, the study was guided by e-learning theory as advanced by Richard E. Mayer, John Sweller, and Roxana Moreno in 2015. The theory outlines cognitive science principles that describe how electronic educational technology is used and designed to promote effective learning. The theorists advanced that channeling linguistic information through audio while concurrently showing non-text imagery is very effective. The theory applies to this study to suggest combining media to facilitate learning during the pandemic lockdown period. The study also adopted a documentary analysis approach. Documents on curriculum development and delivery were analyzed. In Kenya, the education sector has been struggling with how to adopt online-based solutions for curriculum delivery. Despite this, losses are more significant due to the lack of adequate structures to sustain effective e-teaching and e-learning. The suspension of face-to-face learning in all educational institutions led to "unfinished learning" as the learners were not allowed to experience all the understanding they would have had in a typical class. The study might be significant to Kenya and sub-Sahara Africa, as policymakers and curriculum developers would use the findings to formulate curriculum reforms to redress the coronavirus's impact on education. Conclusively, the study recommends the use of e-learning as a mitigation strategy for coronavirus challenges in educational systems.

Keywords: Coronavirus, curriculum, e-learning, Re-conceptualization

1. Introduction

The Kenya Institute of Curriculum Development Act No. 4 of 2013 mandates the Institute of Curriculum Development (KICD) to advise the Government of Kenya on matters of curriculum development; evaluate, vet, and approve any local and foreign curricula and curriculum support materials; implement the policies relating to curriculum development in basic and tertiary education and training; and develop, review, and approve programs, curricula, and curriculum support materials that meet international standards for basic and tertiary education institutions. Therefore, according to Print (1993), the curriculum incorporates all planned activities organized and systematically implemented by teachers in the schools. The curriculum, thus, refers to lessons and academic content taught in schools. Besides, dictionaries define "curriculum" as the courses offered by a school. However, most educators guide the curriculum as knowledge and skills that students are expected to learn. These include learning objectives that learners are expected to meet; the units and lessons teachers teach; the assignments and projects given to students; instructional materials; and assessments. Subsequently, all conditions that contribute to learning due to structure and organization and peculiar school practices within and without the classroom, an official timetable, or the syllabus are deemed as part of the curriculum. In addition, practices and activities that contribute to

extracurricular or co-curricular activities are an integral part of the curriculum.

Obizoba (2015) noted that theorists have advanced perspectives complex rules that govern curriculum theory building. Curriculum theory should, therefore, begin by defining its set of events. Besides, curriculum theory should also make clear its accepted values and sources for decision-making. In addition, curriculum theory should specify the characteristics of curriculum design. Furthermore, curriculum theory should describe the essential processes for making curriculum decisions. Also, curriculum theory should provide for continuous regeneration of the curriculum. In this respect, KICD conforms to the perspectives as advanced by various curriculum theorists. An additional perspective of the curriculum is how learning experiences harmonize with the generalized curriculum development standpoint. The view identifies curriculum as recognized as an avenue for presenting opportunities in educational delivery systems. Educational delivery systems are modes through which learners attain knowledge forms, skills, values, and attitudes that contribute to the contemporary world's practical sustainability but are not necessary. This implies that learners gain experience and develop not only through the procedures of various modes of instruction but also through methods of inquiry within the social and physical environments of learners. Subsequently, learners' experiences are actualized through field trips, supervision of projects, industrial attachments, online engagement, and field games.

Kenya's basic education sector is distinct from other education sectors. Learners in this sector range in age from six to eighteen years old. The sector covers primary and secondary school education. Schools in basic education sector offer a variety of teaching and learning approaches. Working in Kenya's basic education sector is difficult due to the diversity of the learners, including their cultural background and age at this level. Inadequate school resources also contribute to the difficulties. Despite this, McGrath (2013) demonstrated that different pedagogical models can be used to meet the needs of effective teaching and learning. However, there is a significant challenge due to insufficient resources. As a result, curriculum planners cannot implement quality assurance during the planning process. Similarly, teachers in the basic education sector cannot achieve quality assurance during the implementation stage. Furthermore, the outbreak of COVID-19 has hampered curriculum delivery. This has revealed inequity in curriculum design and delivery in Kenya and throughout Sub-Saharan Africa. Due to COVID-19, school closures and lockdowns resulted in actual learning loss. Curriculum redesign and delivery are critical in addressing educational equity and access during the COVID-19 pandemic. As a result, KICD is expected to evaluate and design a curriculum to combat the COVID-19 pandemic. Furthermore, KICD should vet and approve curriculum support materials that are critical for mitigating the COVID-19 pandemic in primary and secondary schools.

2. Statement of the Problem

During the coronavirus era, the school curriculum and curriculum delivery have become a source of contention among academics. The developments have shaped a new understanding of how coronavirus has impacted on curriculum delivery worldwide. Due to these developments, many contemporary theorists have emerged, posing new challenges to education participation. Theorists in Kenya are questioning the curriculum design and mode of curriculum delivery in primary and secondary schools. The current investigation leads to critical pedagogy in school curriculum delivery based on new critical teaching/learning approaches. As a result, this study looked into the reconceptualization of curriculum and curriculum delivery in order to mitigate the impact of the COVID-19 pandemic in Kenya.

3. Significance of the Study

The study could be useful to Kenya's Ministry of Education and Africa south of the Sahara. The findings would be used by curriculum developers to incorporate information and communication technology into basic education curriculum designs. It could be used by education strategists to create a legal framework aimed at achieving learning competencies in schools. Teachers would create roadmaps for continuous improvement of teaching pedagogies based on the findings in information and communication technology. Finally, the study's findings would improve curriculum knowledge and curriculum delivery in primary and secondary schools. The study findings may add to the current research findings and literature by providing additional knowledge of teaching approaches. It may also help future researchers by identifying priority areas for additional research.

4. Theoretical Construct

Mayer, Sweller, and Moreno's (2015) e-learning theory was used in this study. E-learning theory is based on cognitive science principles that show how to use and design educational technology to improve learning effectiveness. Sweller and Moreno (2015) established design principles for learners who use technology to reduce extraneous cognitive load and manage intrinsic limitations at an appropriate level. E-learning theory, as a subset of Connectivism, emphasizes how technologies can be used and designed to create new learning opportunities in order to promote effective learning. Furthermore, the theory is applicable to this study because it focuses on managing extraneous cognitive and intrinsic loads in order to maximize learning efficiency. Also, the role of connectivism in technologies for the promotion of effective learning is addressed.

5. Research Methodology

The study used documentary analysis to obtain documentary evidence to support and validate facts stated in the research. The documents examined concentrated on curriculum and curriculum delivery. The KICD Act, studies on curriculum design and curriculum delivery, and reports from national education conferences were among the local sources of documents. Curriculum designs and curriculum delivery as proposed by UNESCO are included in international documents. Global studies on curriculum design and delivery were also reviewed. The findings of empirical studies conducted in Kenya and around the world on curriculum designs and curriculum delivery were outlined. These written materials on curriculum and curriculum delivery were read and reviewed analytically. The data was analyzed and interpreted by examining documents and records related to curriculum and curriculum delivery. The researchers extracted relevant factual statements to validate the study's individual research objectives. The study's objectives were to: identify curriculum changes that are critical to improving equity during the coronavirus pandemic period; identify curriculum delivery changes that are critical to enhancing learning approaches during the coronavirus pandemic; and assess the relevance of e-learning during coronavirus pandemics. The researchers gathered data for this review from secondary sources, primarily textbooks, peer-reviewed journal articles, and government and agency publications. Personal reflection on essential education practices in Kenya was also used by the researchers. To extract meaning from the texts, discourse and interpretative analysis were used. School curriculum design, curriculum delivery, and e-learning were among the variables investigated. These factors are regarded as critical for effective learning efficiency.

6. Data sources and Discussions

6.1 Evaluation of Curriculum Model

Curriculum models, according to Kolomitro& Klodiana. (2015), provide planned experiences for students to achieve. This is consistent with University of Calgary (2015), who sees curriculum as schools' planned efforts to achieve students' learning outcomes. Johnson (1967), on the other hand, defines curriculum as a structured series of learning outcomes that result from instructional delivery. Although Johnson and other scholars disagree on the definition of curriculum, they all agree that it is a series of planned activities. Furthermore, the planned activities must be delivered to learners via various modes of delivery to ensure effective learning efficiency. As a result, learning outcomes are critical in curriculum delivery. A curriculum model must flow systematically in order to be realistic. The development of a curriculum should be guided by principles.

Tyler (1949) developed the fundamental principles of a curriculum. The fundamental guidelines are instructions for determining the school's purposes, identifying educational experiences related to the goal, organizing the experiences, and evaluating the purposes. Curriculum development, according to Ornstein and Hunkins (2009), is a process of planning, implementing, and evaluating. As a result, curriculum models are beneficial to curriculum designers in terms of transparency and the application of specific teaching, learning, and assessment approaches. Furthermore, curriculum models are required for technical purposes. Human personal attitudes and values, on the other hand, are ignored in curriculum models. As a result, Ornstein and Hunkins (2009) advised using professional and personal judgment when designing and developing curricula to improve student learning.

Several studies (including Gosling & O'Connor, 2009; and O'Neill, 2010) advance two curriculum models: the Product Model and the Process Model. The product model focuses on the plan and intentions, whereas the process model focuses on the activities and effects. The product model assists teachers in developing precise curricula and assessment methods. Furthermore, it aids in the development and communication of transparent learning outcomes. According to Smith &Ragan (2005, the product model assists the curriculum designer in identifying the learning

outcomes. In this context, student motivation is critical to learning. As a result, learning outcomes should be broad and flexible. While being assessed, learners can demonstrate and express appreciation, pleasure, and enjoyment.

However, Knight (2001) contends that the process model encourages more intuitive curriculum planning in order to achieve good learning outcomes. Because curriculum models are similar to product and process models, they are classified as technical or non-technical. The technical approach is concerned with content, whereas the non-technical approach is concerned with learners. A curriculum blueprint for structuring the learning environment is developed through technical-scientific practice. This is also true for the product model. As a result, the technical process is logical and effective in providing efficient education. This is reflected in Wiggins and McTighe's backward design (2012). The Backward design model begins with a statement of endpoints (intended student needs) and what evidence will be gathered to assess the curriculum's success (architecture, engineering, and educational design).

However, Ornstein and Hunkins (2004) regard the non-technical approach to curriculum development as personal and subjective because it only focuses on the learners. The procedure model This approach focuses on the learner rather than the content. According to the reviewed literature, the method is student-centered. Non-technical curriculum development approaches abound, including the deliberative curriculum model and post-positivism models. The reflective curriculum model is a collaborative approach to dealing with real-world issues. The Post-positivism curriculum model places even less emphasis on intervention from educators, teachers and lecturers; thus, allowing chaos to emerge. In this regard, students use turmoil to look for instabilities in the curriculum.

Curriculum conceptualization is referred to as the needs analysis stage in the literature reviewed (Abiero, 2009; Shiundu & Omulando, 1992). Furthermore, the Ministry of Education, Trinidad and Tobago (2012) refer to the conceptualization stage as the situational analysis stage. All preliminary work is completed at this point. First, data on the existing curriculum is gathered to determine whether it meets the needs of society and learners. Following that, weaknesses, strengths, and emerging issues are addressed in accordance with the community's emerging problems and conditions (Abiero, 2009). Factors such as socioeconomic status and parental and societal expectations, according to Bennars, Boisvert, and Otiende (1994), are critical.

Kenya has adopted the top-down curriculum development model. The KICD is the sole agency in Kenya responsible for curriculum development. Its authority is derived from the KICD Act (2013). The KICD is a semi-autonomous body that reports to the Ministry of Education. Teachers are never involved in the curriculum's design or development. Teachers are only used during the implementation phase. Teachers, according to Mosothwane (2012), serve as consumers rather than producers. This strategy has prevented teachers from participating in curriculum development processes (Shiundu & Omulando, 1992). As a result, the curriculum is developed externally without reference to the local context. Exclusion from curriculum development decisions results in a lack of ownership and commitment required for the curriculum's success. It leads to misinterpretation of innovative features, according to Okda (2005). This impedes the achievement of educational objectives. In light of this, Gilroux (1990) has proposed rethinking of by administers and teachers on their role and reject the cult of knowledge and expertise. Despite this, Kenya established a task force in 2012 to realign the education system with the constitution and the Vision 2030 goals. The task force emphasized the significance of evaluation in the curriculum development process ((GOK,2012)). However, this has been hampered by a failure to include teachers in the curriculum design and development processes.

6.2 Instructional Model for Curriculum Delivery

Curriculum delivery refers to how the curriculum helps students achieve their learning objectives. Curriculum delivery is accomplished through the use of instructional materials, teaching methods, and collaborative learning. Teachers have a significant impact on curriculum delivery. The mode of instruction and resources used determine the success of curriculum delivery and the achievement of learners (Stabback, 2016). The quality of instructional materials determines the effectiveness of curriculum delivery (Ko & Sammons, 2014). The mode of instruction used is heavily influenced by the instructional materials chosen. Furthermore, school leadership influences the effectiveness of curriculum delivery and the quality of instructional materials used in classrooms (Ko & Sammons, 2014).

A course's instructional delivery method describes how the instructors will deliver a lesson (JHU, 2021). The interaction between the teacher and the student is referred to as instructional delivery in this context. Its key points are the content and skills required by students. In a learning environment, they contribute to learning and collaboration with others. The teacher should be familiar with the curriculum and resources being used. Curriculum delivery is being transformed in order to improve learners' encounters and interactions with concepts and learning experiences. The selection and production of high-quality curricula and instructional materials should result in

transformative curriculum delivery. Curriculum delivery is thus intended to improve learning and teaching experiences in schools. Curriculum delivery in this context includes how students acquire skills.

Teachers use a variety of teaching methods. The teaching styles include generalized friendliness or sternness. According to Mackatiani (2017), sternness leads to learners being overburdened with homework on a daily basis. The preferred instructional strategies of the teachers are also included in the teaching styles. Teaching style, according to Atasoy et al. (2018), is more than just personality. It is related to teaching philosophy. It is also influenced by their classroom confidence or self-efficacy (Imbova M. et al., 2018; Mackatiani C. et al., 2017; Mackatiani C. et al., 2020; Zhang et al., 2019). Despite the fact that there are numerous descriptions and inventories of teaching styles, Grasha (1994) proposed five teaching styles. Expert, formal authority, personal model, facilitator, and delegator are some of the teaching styles. Each teaching style has advantages and disadvantages.

The expert approach assumes that the instructors are knowledgeable about a subject. The teacher's role is to help students gain competence by imparting knowledge. Furthermore, the formal authority approach is similar to the experts' approach. Because of their education, background, and position, the instructors' role in formal authority has status. Formal powers are more concerned with enculturating students into a field or discipline by ensuring the "right culture." In the personal model, however, instructors lead by example and model behavior. The personal model demonstrates the teacher's skills and processes. Students are guided through hands-on activities by the teacher. The facilitator is a coach who is concerned with fostering learners' independence. Finally, the delegator approach is student-centered. The delegator ensures that students are self-sufficient. Delegators may assign projects or problems to students to complete on their own.

Grasha's (1994) model of five teaching styles can be used in six different modes of curriculum delivery. The delivery of instruction in Face-to-Face is organized around in-person classroom meeting times. Converged learning combines physical and virtual classrooms to deliver instruction regardless of location. Furthermore, synchronous online ensures that instruction is delivered at the specified time and day, regardless of location. Furthermore, instruction is delivered online. Face-to-face sessions are not available to students. There is also hybrid teaching delivery, in which some traditional face-to-face contact hours are replaced by required synchronous or asynchronous online instruction. In synchronous online delivery, instruction takes place at the specified time and day, regardless of location. The learning management system is used to complete all learning activities online. There will be no face-to-face sessions, but remote participation is expected. Asynchronous online learners engage in activities at various times and locations, utilizing multimedia learning technologies.

In Kenya, the Sessional Paper No. 1 of 2005 on A Policy Framework for Education, Training, and Research reinforces the government's commitment to improving educational quality at all levels in order to produce people with the necessary knowledge and skills to face the challenges of the twenty-first century. The issue of curriculum delivery was addressed in the policy paper. The traditional method of curriculum delivery is face-to-face. The delivery of instruction in this mode is organized around in-person classroom meeting times. Teachers' instructional methods are a major source of concern. Although the government has created a curriculum, the resources available are insufficient. Due to limited resources, teacher-centered pedagogical approaches are used (Mackatiani et al., 2018). Furthermore, Mackatiani et al. (2017) discovered that understaffing of teachers contributes to school inefficiency by impeding the effective teaching-learning process. Without appropriate instructional methods, such measures cannot improve learning achievement. There is empirical evidence that teachers' instructional strategies influence student learning achievement. Teaching methods help teachers deliver content in order to meet stated objectives and learning outcomes.

Kenya's educational system is based on examinations (Mackatiani, 2017). Despite this, instructional approaches are centered on exams. As a result, teacher-centered techniques are employed. As a result, the exam-driven model leads to inefficiency in education. According to a 2016 KNBS economic survey, the pupil completion rate (PCR) in primary schools is low. This is consistent with the findings of KNBS (2016), who found that the PCR increased from 78.5 percent in 2014 to 82.7 percent in 2015. Learners are forced to repeat grades, particularly in class seven and form three. Headteachers encourage the practice in order to ensure that students enrolled in national examinations excel.

6.3 Relevance of E-learning

The emergence of COVID-19 resulted in the unexpected closure of educational institutions worldwide. To keep the epidemic from spreading, countries had to look for alternatives to traditional learning methods in schools. E-learning has largely replaced traditional face-to-face academic methods. This was done to prevent the virus from spreading through social gatherings in educational institutions. As a result, the education sector was forced to embrace

e-learning. E-learning refers to a formal learning system that uses electronic resources. Teaching in e-learning can be done entirely online using computer technology.

According to several studies (Aboagye et al., 2020; Mackatiani, C.I. & Likoko, S.N., 2022; Mackatiani, C.I., Likoko, S.N., & Mackatiani, N.I.,2021), the internet is the primary component of e-learning. E-learning eliminates the effort and travel costs associated with traditional learning. It also reduces the amount of administrative action, preparation and lecture recording, attendance, and leaving classes significantly. Teachers and students recognize that online learning methods encourage students to pursue lessons from anywhere and under difficult circumstances that prevent them from attending school. As a result, the student becomes self-directed. As a result, e-learning is the best option for preventing the spread of epidemics. ICTs (information and communication technologies) provide opportunities to enhance teaching and learning. Furthermore, Abdullah et al. (2020) state that ICT promotes the development of an educational policy that promotes creative, innovative thinking.

However, there are some difficulties with e-learning. The most important one is theoretical knowledge acquisition. The other uses everything that students have learned without putting it into practice. Furthermore, the face-to-face learning experience is missing, which may be appealing to many learners and educators. Other difficulties stem from the online assessments, which have a limited number of objective questions. According to Somayeh et al. (2016), the main disadvantage of e-learning is the lack of critical personal interactions between students and teachers. Lizcano et al. (2020) conclude that students are less likely to benefit from it. Despite the challenges it faces, e-learning ensures spatial distancing. Because of time, location, and health concerns, e-learning is adaptable. It encourages the acquisition of knowledge and skills by providing access to massive amounts of data, improving collaboration, and fortifying learning-sustaining relationships.

Kenya is a Sub-Saharan African country with a population of 26 million children. According to UNESCO (2020), school closures impacted approximately 14.3 million students. Kenya needed to implement virtual learning. Digital learning must be implemented in schools. As a result, teachers and students were forced to participate in e-classes in order to slow the spread of the COVID-19 pandemic. National media outlets were to provide children with educational opportunities. Educational programming was to be broadcast on television and radio stations. Learners were to attend classes from the comfort of their own homes. According to the MoE (2020), the measure is fraught with difficulties. Many Kenyan students lack access to digital learning tools.This is due to a variety of underlying factors, including income disparities, limited or no access to electricity for certain segments of the population, and other social and cultural factors.

7. Findings

1. Tyler (1949) proposed curriculum development principles as instructions for determining the school's purposes, identifying educational experiences related to the purpose, organizing the experiences, and evaluating the purposes. The guidelines result in the creation of two curriculum models, namely the product model and the process model. The product model focuses on the plan and intentions, whereas the process model focuses on the activities and effects. Curriculum models are thus classified as either technical (product) or non-technical. Kenya's curriculum model is technical in this context. It is a top-down, content-based curriculum development model. Teachers are never involved in the curriculum's design or development. There is no participatory approach in the model.

2. There are several methods of delivery available. Face-to-Face Some students attend face-to-face while others participate virtually in the converged delivery. The virtual delivery of instruction via a learning management system is known as online mode. There is also hybrid delivery, which substitutes required synchronous or asynchronous online instruction for some traditional face-to-face contact hours. Following that, the identified modes are used to conceptualize the five teaching styles of expert, formal authority, personal model, facilitator, and delegator. The expert approach and formal authority are teacher-centered, assuming that instructors are knowledgeable about a topic and that the teacher's role is to impart knowledge. Instructors in the personal model lead by example, whereas the facilitator in the facilitation model is a coach. Delegator, on the other hand, empowers students to be self-sufficient. In Kenya, face-to-face delivery is the most common mode of delivery. Furthermore, as teaching styles, expert approach and formal authority are used. These teaching methods are centered on the teacher. As a result, learners are denied a participatory approach.

3. COVID-19's appearance disrupted learning in educational institutions all over the world. Countries are looking for alternatives to traditional school learning methods. E-learning has taken the place of face-to-face training. This was done to mitigate the impact of coronaviruses caused by social gatherings in educational institutions. Kenya, like any

other country, was impacted by the coranavirus. Schools were closed, and alternative methods of face-to-face instruction were sought. Educational programming was to be broadcast on television and radio stations. Learners were to attend classes from the comfort of their own homes.

Recommendation

1. Kenya's curriculum model is technical, and teachers are not allowed to participate in the development stage. This post-positivist curriculum model emphasizes less teacher intervention. In this regard, students use chaos to search for instabilities in the curriculum. This aspect has been witnessed in Kenya as a result of student unrest. The study recommends using the Process model, which focuses on the activities and outcomes that lead to a participatory approach in curriculum design. As a result, there is a need to rethink curriculum development in order to address newly emerging issues.

2. A review of the literature revealed that the most common mode of delivery in Kenya is face-to-face. In addition, expert-approach and formal authority are used as teaching styles. Improved access to education; structural, organizational, systemic, and pedagogical changes in the education system are all part of curriculum development. With the coronavirus outbreak, students have been denied access to education. Due to the pandemic, teaching has shifted from in-person to online. As a result, there is a need to rethink curriculum delivery in Kenya by addressing mode of delivery and pedagogical concerns.

3. According to the literature review, when there was a break in the coronavirus, schools were closed. Remote learning was to be used to mitigate the effects of the coronavirus. However, educational programs were broadcast on television and radio stations. In addition, the government unveiled a new digital learning model for 24,000 public schools. However, the program has yet to be implemented in schools. As a result, it is recommended that Kenya implement e-learning as a mitigation measure.

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