

An Analysis of the Basic Education Curriculum in Tanzania: The Integration, Scope, and Sequence of 21st Century Skills

Aneth Komba and Richard Shukia

Abstract

This study generated evidence on whether or not the basic education curriculum is geared towards developing problem-solving, collaboration, creativity, and critical thinking skills among those who graduate from the basic education system. It was informed by a mixed methodology research approach. The data were collected using interviews and documentary review. The findings reveal that the intention to promote 21st century skills through the basic education system in Tanzania is clear, as it is stated in various policy documents, including the Education for Self-Reliance philosophy, the 2014 Education and Training Policy and the National Curriculum Framework for Basic and Teacher Education. Furthermore, these skills are clearly reflected in every curriculum and syllabus document, yet those who graduate from the basic and advanced secondary levels are claimed to lack these skills. This suggests a variation between the enacted and the intended curriculum. We conclude that certain system elements are weak, and hence threaten the effective implementation of the curriculum. These weak system elements include limited finance, a teacher shortage, and the lack of a teacher continuous professional development programme. This research suggests that due consideration should be given to provision of the resources required for the successful implementation of the curriculum. These include, allocation of sufficient funds, the employment of more teachers and the provision of regular continuous professional development for teachers as a way to strengthen the system elements that we identified.

An Analysis of the Basic Education Curriculum in Tanzania: The Integration, Scope, and Sequence of 21st Century Skills

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1. Introduction

Over the past few decades, a strong emphasis has been placed on ‘basic’ skills—reading, writing, and counting—and they remain an important core element of education, as we move into the decade of the 21st century. Notably, 21st century skills are not new, but have become “newly important,” since today’s working class must be able to “find and analyze information from multiple and use this information to make decisions and create new ideas” (Silva 2009). The integration and importance of 21st century skills have been widely recommended. Specifically, John Dewey defined an educated person as “one who thinks and reflects before acting, responds intelligently to a problematic situation and finally assesses the consequences of a chosen plan of action” (Silva 2009). Instead of simply being another “thing to teach”, 21st century skills need to be integrated into the curriculum such that they engage students and provide them with an atmosphere wherein they can apply their knowledge and learn from experience.

Using mixed online and offline learning formats, individuals’ communication and collaboration skills can be enhanced. Such a classroom is intended to foster a learning environment, wherein individuals learn and grow together, especially since students often understand the technology better than their teachers. Thus, 21st century skills can be incorporated into the school curriculum. A classroom should incorporate such skills as problem-solving and innovative thinking by creating an atmosphere that allows students to encounter real-life problems, create new solutions to these and identify criteria for evaluating these solutions. The literature shows that many countries explicitly identify a wide range of 21st century skills as integral to their curricula, moving beyond the primacy of academic knowledge (Care, Kim & Vista, 2017). However, the four 21st century skills that are most frequently incorporated into the school curriculum of many countries are communication, creativity, critical thinking, and problem-solving. Other skills identified include information technology, social, and entrepreneurship skills (Care, Vista & Kim, 2018). Knowledge is, however, largely lacking regarding the extent to which 21st century skills are incorporated into the basic education curriculum in Tanzania. Hence, little is known regarding the extent to which the curriculum is geared towards promoting 21st century skills and producing graduates with the necessary skills to sustain their livelihoods and contribute to the national economy. This paper narrows this gap in knowledge. The works of Komba and Shukia (2021), the draft paper on the Competence-Based Curriculum and Atuhurra & Kaffenberger (2017) inform the current study in several ways. These works, however, drew attention to the curriculum in a general sense, while the current study focuses more on the curriculum related to 21st century skills, as defined in this study. The paper consists of nine major sections; namely, the main purpose of the study, the background information about the education system in Tanzania and the current curriculum, the theoretical framework, the methodology, the findings, the discussion, the conclusion and the recommendations.

2. Main Purpose of the Study

This study generated evidence on whether the basic education curriculum is geared towards developing problem-solving, collaboration, creativity, and critical thinking skills among graduates. The study was informed by the following specific objectives:

- To explore the key stakeholders' efficacy beliefs regarding the extent to which the basic education curriculum is geared towards promoting the acquirement of 21st century skills by students.
- To examine the potential barriers which hinder teachers from adequately equipping learners with 21 century skills and the possible ways to alleviate these.
- To investigate the scope and sequence of the curriculum content coverage, as well as the time devoted to teaching 21st century skills. Among others, this involves quantifying the curricular content and the activities/tasks against the allotted time in curricular materials.

3. Basic Education in Tanzania

The structure of the formal education system in Tanzania encompasses pre-primary education, primary education (Standards I to VII), Secondary Ordinary-Level education, Secondary Advanced-Level education, and three or more years of tertiary education (1–7–4–2–3+), as presented in Figure 1.

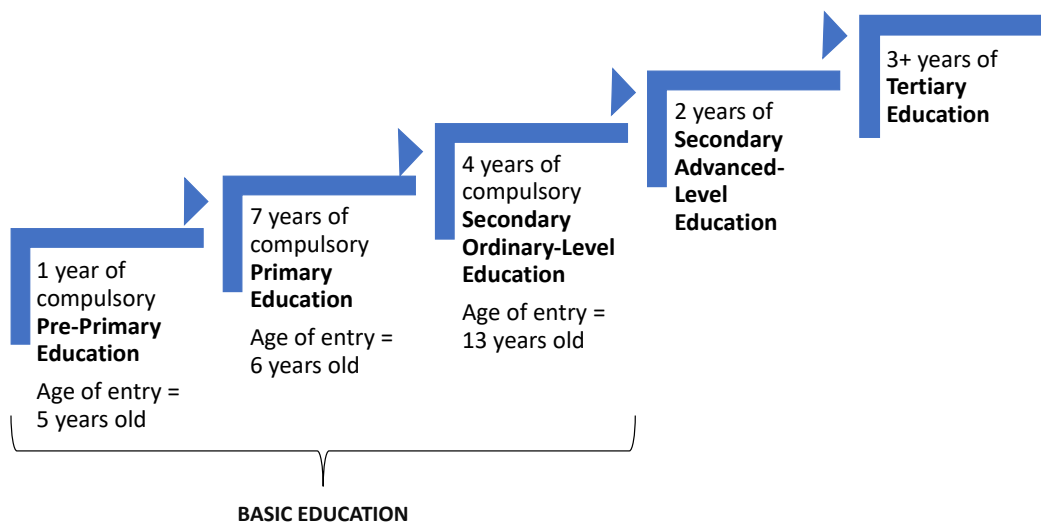


Figure 1: The structure of formal education

Figure 1 demonstrates that basic education comprises three education levels: one year of pre-primary education, seven years of Primary Education, and four years of Secondary Ordinary-Level education, making a total of 12 years. Basic education is fee-free and compulsory for all school-age children. With regards to those who graduate from this level, a number of stakeholders take the view that this group lacks the skills required to cope with daily life challenges. It is further noted that graduates of this level lack the basic 21st century skills and are, for example, unable to communicate or argue critically in various contexts. The next

section will present an overview of the Basic Education Curriculum, the instructional time allocated and the language of instruction employed in Tanzania.

3.1 The Pre-Primary Education Curriculum and Syllabus

The main goal of pre-primary education is to promote children’s holistic development and so prepare them for primary school. To achieve this goal, the curriculum is organised into six main competences; namely, the ability to relate to each other, the ability to communicate, the ability to protect their health, the ability to care for the environment, the ability to master artistic skills, and the ability to master mathematical concepts (TIE, 2016). Table 1 presents the number of periods and time allotted to each of these types of competence.

Table 1: Number of Periods and Time per Competence for Pre-primary Education

Competence	No. of periods	Learning time per week (minutes)
1. The ability to relate to each other	2	40 (8%)
2. The ability to communicate	6	120 (24%)
3. The ability to protect their health	6	120 (24%)
4. The ability to care for the environment	2	40 (8%)
5. The ability to master artistic skills	5	100 (20%)
6. The ability to master Mathematical concepts	4	80 (16%)

The Primary Education Curriculum – 2019 is organised into two main parts: early grades (Standard I-II) and Standard III-VII (Wizara ya Elimu Sayansi na Teknolojia, 2019). The early grades’ curriculum content introduces pupils to basic literacy, and numeracy skills (3Rs), environmental education, and sports and arts. In Standards III-IV, the pupils are exposed to seven core subjects whereas, from Standard V-VII, they are introduced to eight subjects, as shown in Table 2.

Table 2: Core Subjects for Standard III-VII

SN	Subjects for Standard III-IV	SN	Subjects for Standard V-VII
1.	Kiswahili	1.	Kiswahili
2.	English	2.	English
3.	Mathematics	3.	Mathematics
4.	Science and Technology	4.	Science and Technology
5.	Social Studies	5.	Social Studies
6.	Civics and Morals	6.	Civics and Morals
7.	Religious Studies	7.	Vocational Skills
		8.	Religious Studies

In addition to these core subjects, the curriculum advocates the teaching of elective subjects, which include Arabic, French, and Chinese, and extra-curricular activities, comprising subject clubs, sports and arts, self-learning, and entertainment and production activities. Furthermore,

primary education pupils are introduced to 15 cross-cutting issues, which are expected to be intergrated into the core subjects by their subject teachers during the teaching and learning activities (Wizara ya Elimu Sayansi na Tekinolojia, 2019).

3.2 The Curriculum for Ordinary Level Secondary Education

The curriculum for Ordinary Secondary Education was developed in 2005 and revised in 2010. The curriculum is organised into five main learning areas; namely, languages, natural sciences, social sciences, business studies, and sports and arts (Tanzania Institute of Education-TIE (2010). Within each area, there are specific subjects. The areas and related subjects are shown in Table 3.

Table 3: Learning Areas and Subjects for Ordinary Level Secondary Education

SN	Learning area	Subjects
1	Language	Kiswahili, English, French, Arabic, and Chinese
2	Natural Sciences	Biology, Chemistry, Physics, Mathematics, Information and Computer Studies, Technical Education, Agriculture, and Home Economics
3	Social Sciences	History, Geography, Economics, and Civics
4	Business Studies	Commerce and Bookkeeping
5	Sports and Arts (Aesthetics)	Fine Arts, Theatre Arts, Physical Education and Music

The curriculum further splits the subjects into two categories: core and elective subjects. Thus, a student is expected to undertake core subjects and electives that are tailored to their class. Table 4 presents the core and elective subjects for ordinary level secondary education.

Table 4: Core and Elective Subjects for Ordinary Level Secondary Education

Class	Number	Subjects	
		Core subjects	Elective subjects
Form I-II	10	Mathematics, English, Kiswahili, Biology, Civics, Geography and History	Physics, Chemistry, or Book-keeping and Commerce, or Needlework and Cookery or Technical subjects
Form III-IV	06	Mathematics, English, Kiswahili, Biology, Civics and Geography	A student is expected to study one or more elective subject from Chemistry, Physics, Book-keeping, Commerce and History

3.3 The Amount of Instructional Time Allocated and the Language of Instruction

According to the pre-primary, primary and secondary education curriculum, a total of 194 days is allocated for teaching and learning activities each school year, which is equivalent to 39

weeks per year, divided into two terms. A week consists of a minimum of 40 periods, each of which lasts 40 minutes for primary and secondary education (Wizara ya Elimu Sayansi na Teknolojia, 2019).

According to the Pre-Primary Education Curriculum and Syllabus (TIE 2016), there are five (5) in-class periods per day, each lasting 20 minutes, making a total of 25 periods per week. The curriculum further includes one 20-minute period per day that is allocated to outdoor activities, including play. On average, the daily instructional time for primary education is two and half hours for Standard I-II, and six hours for Standard III-VII. A total of five hours and twenty minutes (5.20 hours) are allocated for secondary education (Forms I-IV). This is equivalent to 1,164 hours and 1,318.9 periods of instructional time for primary education, and 1,034.7 hours and 1,292 periods of instructional time for secondary education per year. The available information reveals that the total amount of instructional time (hours) allocated for the basic education curriculum (the number of instructional hours for primary and secondary education combined) per year in Tanzania is comparable to that in other countries around the world, including but not limited to Australia (10,120 days), Canada (8,379 days), China (6,117 days), Finland (6,327 days) and Rwanda (10,140 days) (Creese, Gonzalez, & Isaacs, 2016).

Regarding the language of instruction, Kiswahili, the official language of the majority of the population in Tanzania, is the medium of instruction in almost every public pre-primary and primary educational institution, whereas English is a medium of instruction from Ordinary-Level Secondary education through tertiary education.

4. The Curriculum Reforms in Tanzania

Since the country gained independence, the government of Tanzania has implemented various educational reforms, including curriculum reforms of basic education. Overall, these curriculum reforms have been intended to improve the learning outcomes and create an education system that is relevant to Tanzanians. In 2005, for example, Tanzania introduced a competence-based curriculum, which emphasises students' competence development rather than their acquisition of content knowledge. In 2014, the government of Tanzania implemented the 3Rs reform to strengthen the teaching and learning of the basic skills of reading, writing and arithmetic (3Rs). The overall purpose of this was to improve competence in the 3Rs at the primary education level, and during the early grades (Standard I-II) in particular. This reform constituted a major reorganisation of the subjects taught at each stage of primary school and a sharp narrowing of the focus of instruction in standards I-II. Despite these curriculum reforms, criticism of the quality and relevance of the education provided in Tanzania persist. There is an outcry from society that the education provided in Tanzania fails to promote skills that are relevant to the 21st century to help individuals to cope with ever-emerging challenges in their environment. Hence, this means that the education provided in Tanzania is failing to nurture knowledge, skills, work habits and character traits that are critically important if individuals are to succeed both at school and also in our ever-changing world. These skills include critical thinking, problem-solving, creativity, and collaboration.

Similar curriculum concerns could be traced back to four decades ago, when a report by the Presidential Commission for Education observed that, due to the constant changes both in Tanzania and in the global economic environment, education must prepare and enable the citizens to use their knowledge and skills to solve problems and become self-reliant (Presidential Commission for Education 1982). This observation has recurred recently. In 2019, the theme of the Annual Joint Education Sector Review was “Skills Development for Industrialized Economy”. The meeting emphasized the need for the education sector to produce skilled human resources equipped with skills such as life skills, ‘soft’ skills and socio-emotional skills, to mention a few.

During the fourth and fifth Parliamentary sessions in 2020 and 2021, respectively, one Member of Parliament consistently remarked that the education provided in Tanzania is irrelevant and has failed to enable graduates to cope successfully with the day-to-day challenges that they encounter in their environment. He went on to point out that graduates across all levels of education have limited life skills, such as problem-solving, creativity and confidence. Other Members of Parliament echoed that the existing school curriculum content is failing to produce graduates who are equipped with life skills.

On Thursday 22nd April 2021, Her Excellence President Samia Suluhu Hassan addressed the parliament of the United Republic of Tanzania for the first time. One of the priority areas that the sixth President identified was to improve the quality of education. Among other things, the President proposed a review of the 2014 Education and Training Policy and curriculum. Consequently, in her education budget speech addressed to Parliament on 5th May 2021, the Minister for Education Science and Technology announced plans to review the policy and curriculum. This suggests that the government of Tanzania intends to re-orient the school curriculum to accommodate the public concern related to the limited 21st century skills and Presidents’ directive. However, we know little about the extent to which the existing basic education (pre-primary, primary and secondary education) curriculum in Tanzania promotes or hinders the development of 21st century skills. Thus, this study seeks to generate evidence on whether the basic education curriculum is geared towards promoting 21st century skills among graduates.

The current study defines twenty-first-century skills as abilities and attributes that can be taught and or learned to enhance thinking, learning, working, and living in the community. These skills include creativity and innovation, critical thinking/problem-solving, communication, collaboration, information literacy, life and career skills, and personal and social responsibility.

5. Theoretical Framework

The study adapted the Lant Pritchett (2015) framework for accountability relationships. In this regard, it is argued that a well-established accountability relationship is key to ensuring that a system produces satisfactory levels of learning outcomes (Bruns et al, 2011). We use two elements of accountability identified by Pritchett (2015), namely, delegation and financing, to determine the coherence within the system. Informed by Pritchett (2015), we examine the

available curriculum documents to determine the incorporation of 21st century skills. Furthermore, we determine stakeholders' efficacy regarding the availability of these skills in curriculum documents and the capacity of the teachers to integrate and build the said skills in learners. In addition, we examine the sources of finance that may facilitate the proper implementation of the available skills. Pritchett's framework was regarded as useful, as it links the achievement of student learning outcomes with teachers' knowledge and skills to implement the curriculum as well as with sufficient financial resources for the provision of teaching, learning materials and teacher training.

6. Research Methodology

The study employed a qualitative research methodology using interviews with key informants as the main data collection tool. The informants include but are not limited to government officials from various ministries, including the Ministry of Education Science and Technology and Ministry of Regional and Local Government, members of parliament, heads of schools, teachers, parents, graduates and participants from Non-Government Organizations. The total sample size was 509, as indicated in the table below:

Table 5. Sample size and Distribution

	Category of Participants	Number
1.	Government officials	41
2.	Members of parliament	19
3.	Education officers from the regional, district and ward levels.	32
4.	Participants from Non-Government Organizations	82
5.	Academicians from higher learning institutions	53
6.	Students at higher learning institutions	0
7.	Members of the school boards	10
8.	Heads of primary and secondary schools	10
9.	Primary school teachers	30
10.	Secondary school teachers	48
11.	Primary school pupils	16
12.	Ward Educational Officers (WEO)	30
13.	Secondary school students	30
14.	Religious leaders	48
15.	Owners of private schools	10
16.	Parents	50
	Total	509

Among other things, the purpose of interviews was to explore the participants' own understanding and awareness of 21st century skills. In addition, interviews were organised to explore their efficacy beliefs regarding whether the existing basic education curriculum is geared to deliver. Furthermore, the study employed content analysis techniques to examine the

basic education curricular materials and related documents to explore the proposed instructional and assessment strategies.

A documentary review was conducted on the social studies syllabus for primary schools (STD III-VI). The review was conducted to ascertain the extent to which 21st century skills were being reflected in the contents and activities of the respective syllabus. These skills were critical thinking, creativity and innovation, collaboration and communication. Equally, the review ascertained the time allocated to each activity in relation to the aforementioned skills. The social studies syllabus for STD III-VI was purposively sampled, since it is in both of these grades that primary school learners acquire several skills as a result of the contents and activities they experience and are preparing for national examinations in STD IV and the Primary School Leaving Examination (PSLE) in STD VII, respectively.

The quantification of the contents, activities and time was conducted in three steps. First, the total number of subtopics that addressed each skill was identified, then the percentage of all of the subtopics that covered each skill was computed against the total number of all subtopics within the topic. Second, the number of activities across the subtopics that addressed each skill was identified, then the percentage of all activities that addressed each skill was computed against the total number of all activities in the topic. Third, the amount of time allocated to each activity in relation to 21st century skills was computed by taking the total number of periods allocated for all activities and dividing it by the total number of activities related to a particular topic.

7. Findings and Discussion

The findings of this study are organized around three major themes; namely, the key stakeholders' efficacy beliefs about the extent to which the basic education curriculum is geared towards promoting 21st century skills among students, the potential barriers which may hinder teachers from properly equipping learners with 21st century skills and the possible ways to alleviate these, as well as the scope and sequencing of the curriculum content coverage and the time on task in relation to 21st century skills.

7.1. Stakeholders' Efficacy on the Extent to which the Basic Education Curriculum Promotes 21st Century Skills Among Students

The Ministry of Education Science and Technology, through the Tanzania Institute of Education, is responsible for setting and communicating the national learning goals. An analysis of the documents revealed that the policy documents have set and communicated 21st century skills as being among the targets set for basic education. The findings regarding the review of the training policy, national curriculum framework and curriculum documents are discussed below.

7.1.1 Education and Training Policy-ETP and 21st century skills

An analysis of the education policy document revealed that Tanzania is envisioned to develop a competitive industrial economy. Education lies at the apex of realizing this goal, with an educated-led society. The 2014 Education and Training Policy (ETP) sets several objectives that pave the way for this transformation. Among others, the objectives are designed to streamline the development of human resources, which is a stepping-stone towards accelerating the national priorities and demands, particularly economic growth, that reflects human growth (Ministry of Education and Vocational Training - MoEVT, 2014). The ETP is informed by an Education for Self-Reliance (ESR) philosophy which, among other things, emphasizes: striking a balance between education and the needs of the community or target groups; developing critical thinking and an inquiry mind; learning both theoretically and practically; developing self-confidence, decision-making skills, and a respect for human values; and participating in economic activities (Nyerere, 1967). The 2014 policy highlights a number of policy statements with the intention of promoting the development of 21st century skills among graduates:

.....this policy is focused on strengthening the provision of education and training in order to equip graduates at all levels with the competencies and skills required to compete both nationally and globally (MoEVT, 2014 pp 19).

The policy emphasizes the need to equip the graduates with the relevant skills to enable them to survive in the 21st century. It is expected that these skills will enable graduates to cope with their life challenges by either being employed or self-employed and creating employment for others.

7.1.2 The National Curriculum Framework for Basic and Teacher Education of 2019 (NCFBTE)

The National Curriculum Framework for Basic and Teacher Education of 2019 (NCFBTE) highlights focus areas that contribute to human growth, with the motive of accelerating competitive economy development (Ministry of Education Science and Technology-MOEST, 2019). These areas are aligned with the ESR and global employability skills for the 21st century. The NCFBTE advocates the promotion of skills, which would enable students to develop the mental processes required to adapt to and improve the modern work environment. These skills include critical thinking, complex problem-solving, creativity, collaboration, and communication, among others. Furthermore, the framework stipulates which educational outcomes should be realized by the education system, as it states:

....learners who graduate from the education system will have the following characteristics that are deemed necessary for employability, entrepreneurship, efficiency, and productivity in the labor market and for self-employment. The characteristics include self-confidence, sociability, democratic, communicative competence, literate, inquisitiveness, critical thinking, and innovativeness, enterprising, ethics and flexibility (MOEST, 2019 pp12).

The framework's provisions imply that the basic education curriculum ought to be developed in a way that is geared towards promoting 21st century skills, as indicated below:

In order to enable Tanzanians compete in the national and international labour market, three categories of skills, namely *learning skills*, *literacy skills* and *life skills*, are needed and are important for all students at different levels of education. These skills imply two important things: First, when developing curricula for different levels of education, the learning outcomes shall be oriented towards having the 21st century skills acquired by all students in schools and colleges. Secondly, teaching and learning processes will be undertaken in such a way that students will develop such skills to prepare them for a more complex life and work environment in the 21st century (MOEST, 2019 pp5).

This document implies that Tanzania strongly emphasises the need to develop 21st century skills to enable graduates to compete in both the national and international labour markets.

7.1.3 The basic education curriculum and 21st century skills

The Primary Education Curriculum subscribes to ESR, ETP and the NCFBTE which, among other things, emphasizes a curriculum that promotes 21st century skills. The Primary Education Curriculum emphasizes the production of graduates who will play a critical role in ensuring the country's economic transformation into an industrial economy (Wizara ya Elimu Sayansi na Teknolojia (2019, 2019). This curriculum is divided into two main parts. The first part covers Standard I-II; its main goal is to develop competencies in the 3Rs. The second part covers Standard III-VII; its main goal is to enable pupils to develop skills in the 3Rs together with other life skills through studying the following subjects: Social Studies, Vocational Skills, Kiswahili, Mathematics, Science and Technology, Civic and Moral Education, English, and two optional subjects, namely French and Arabic (TIE, 2016 & Wizara ya Elimu Sayansi na Teknolojia 2019). The Standard III-VII curriculum emphasizes development of 21st century skills. The curriculum aspires to develop skills including but not limited to critical thinking, creativity, and problem-solving skills; participation in games, sports and arts activities; and developing talents and abilities, among others.

7.1.4 Curriculum intention to promote foundational skills

The primary School Education Curriculum for Standard I-II delineates the expected learning competences that pupils in these grades should acquire. These include the mastery of foundational skills. In the context of this paper, we define foundational skills as reading, writing and numeracy (3Rs) skills. An analysis of the pre-primary and primary education curriculum reveals that the curriculum for pre-primary and primary education places significant emphasis on reading, writing and arithmetic (3Rs) skills. Of the instructional time allocated to pre-primary education, for example, 48% is allocated to communication (reading, speaking, listening, and writing), mathematical concepts and social skills (which are related to each other). A recently-introduced curriculum reform, among other things, it involves a shift from the six subjects that were offered to Standard I-II pupils before 2015 to allocating more time to promoting competences in reading, writing, and arithmetic. Fifteen hours per week are allotted to teaching, and there are six 30-minute periods per day. The total instructional time is three

hours per day, 80% per week of which is allocated to the 3Rs, whereas 20% is allocated to other subjects: Healthcare and the Environment; developing Sports and Arts; and Religious Education, as presented in table 6 below:

Table 6: Instructional Time Allocated within Pre-primary Education

Subject	Number of hours per week	Number of periods per week
Reading	5	10
Writing	3	6
Arithmetic	4	8
Healthcare and the Environment	1	2
Developing Sports and Arts	1	2
Religious Studies	1	2
Total	15	30

The findings indicate that reading occupies 33.3% of the total allotted early literacy instructional time, while arithmetic and writing occupy 26.7% and 20%, respectively.

7.1.5 Stakeholders’ beliefs about the efficacy of the basic education curriculum in promoting 21st century skills

The findings reveal that the participants had mixed opinions about whether the basic education curriculum is geared towards delivering. The majority of the participants interviewed (i.e., 384 (75%) of the 509) held that the basic education curriculum is relevant and designed to promote competences that will enable graduates to survive in the 21st century. On the other side, 125 participants (25%) noted that basic education is irrelevant, as it introduces students to content which is irrelevant both to the community and for survival in the 21st century (see figure 2). They claimed that graduates of basic education lack creativity and problem-solving skills. Furthermore, the participants stated that the curriculum fails to impart the life skills necessary to enable individuals to cope with their respective communities after leaving school. These findings suggest that the curriculum documents, i.e., the intended curriculum, are well-developed, and clearly aim to equip graduates with 21st century skills. Hence, this suggests that the issues arise from what is being implemented in classroom i.e., the enacted curriculum.

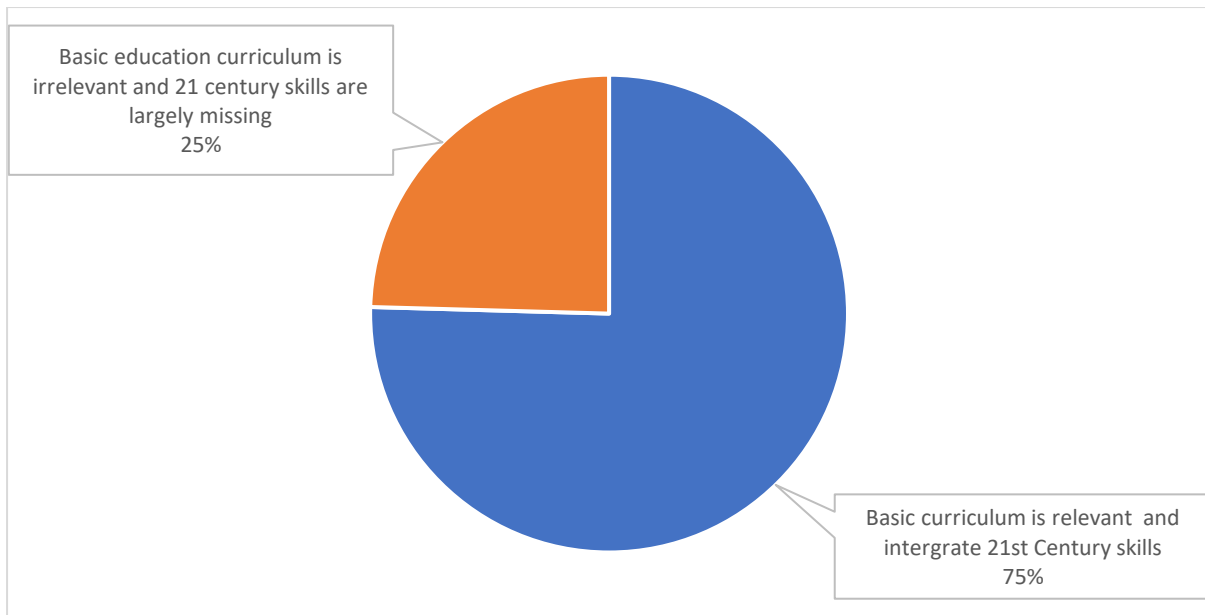


Figure 2: Views Regarding the Efficacy of the Basic Education Curriculum in Promoting 21st Century Skills

Since the findings from the analysis of the curriculum documents, policy documents and stakeholders’ views suggest that the basic education curriculum is relevant and integrate 21st century skills, hence it is vital to examine the potential barriers to this curriculum achieving its aims.

8. Potential Barriers to Promote 21st Century Skills and Possible Ways to Alleviate Them

The findings reveal three potential barriers namely the shortage of teachers, limited in-service teacher professional development and limited financing. These are briefly discussed below:

8.1 The Shortage of Teachers

The participants reported that the shortage of teachers in schools is a potential barrier to realizing the curriculum’s goals. Some of the participants took the view that the inadequate number of teachers overburdened the available few. Thus, the teachers would probably be inefficient not only at promoting 21st century skills but also implementing the curriculum. The participants’ views about the shortage of teachers were consistent with the data extracted from the document review. Table 7 presents the teacher gap in primary and secondary schools.

Table 7: Teacher Demand, Availability and Gaps in Public Primary and Secondary Schools

Teacher Availability and Demand				
Category of Teachers	Demand	Available	Gap (frequency)	Gap (%)
Primary Schools	274,549	173,591	100,958	37
Secondary Schools	159,443	84,700	74,743	47
Total	433992	258291	175701	40.5

As Table 7 shows that the shortage of teachers in primary and secondary schools amounts to 40.5%. According to the PO-RALG teacher recruitment plans, approximately 10,000 teachers will be employed in the financial year 2022/23 (July 2022 – June 2023). If the recruitment plan remains constant, it will take about 19 years to fill the primary school teacher gap and 14 years to fill the secondary school teacher gap.

8.2 The Limited In-service Teacher Professional Development

The participants were of the view that teachers lack the pedagogical competences to facilitate the promotion of 21st century skills among students. They proposed that teachers needed to engage in on-going professional development activities to update their pedagogical skills and so catch up with 21st century skills. Furthermore, the participants were of the view that the teachers lacked the pedagogical skills to teach the 3Rs in the pre-primary and early grades, thus, among other things, the participants recommended that the continuous professional development should focus on equipping teachers with the skills necessary for teaching the 3Rs. The participants' view about the lack of professional development programmes for teachers is consistent with the Controller and Auditor General (CAG) report (2020). The CAG reported that there was an inadequate provision of capacity building for in-service teachers and that only 18% of the 179,341 primary school teachers received in-service training during the financial years from 2015/16 to 2018/19 (URT, 2022). The report further revealed that the training was confined to in-service teachers teaching the 3Rs in Standard I-II, and not offered to the 147,027 in-service teachers who taught other subjects and grades, leaving 82% of teachers untrained. About 77% of the targeted secondary school on-service teachers were trained from 2015/16 to 2018/19. However, only 19% of the available in-service teachers in secondary schools were targeted. Overall, the proportion of in-service teachers in public primary and secondary schools who had received in-service training over the past seven years was less than 20%. The training focused on the 3Rs and certain subjects. Evidence is largely lacking to show that teachers have been trained how to support students' acquisition of 21st century skills.

8.3 The Limited Financing

The participants were of the view that the curriculum is not being implemented as planned because of the limited funding provided by the government. As a result, there exists a limited infrastructure to support the effective teaching and learning of 21st century skills. This is consistent with the analysis of the national budget for 2022/2023. The analysis reveals that the national budget amounts to TZS 41,100 billion, and that the allocation to the education sector is TZS 5,635 billion, equivalent to 13.7 percent of the national budget. This is about 6.3% less than the 20% advocated by the Incheon Declaration and Framework for Action Towards Inclusive and Equitable Quality Education and Lifelong Learning for All, to which Tanzania subscribes. Figure 3 shows the proportion of the education sector budget within the national budget.

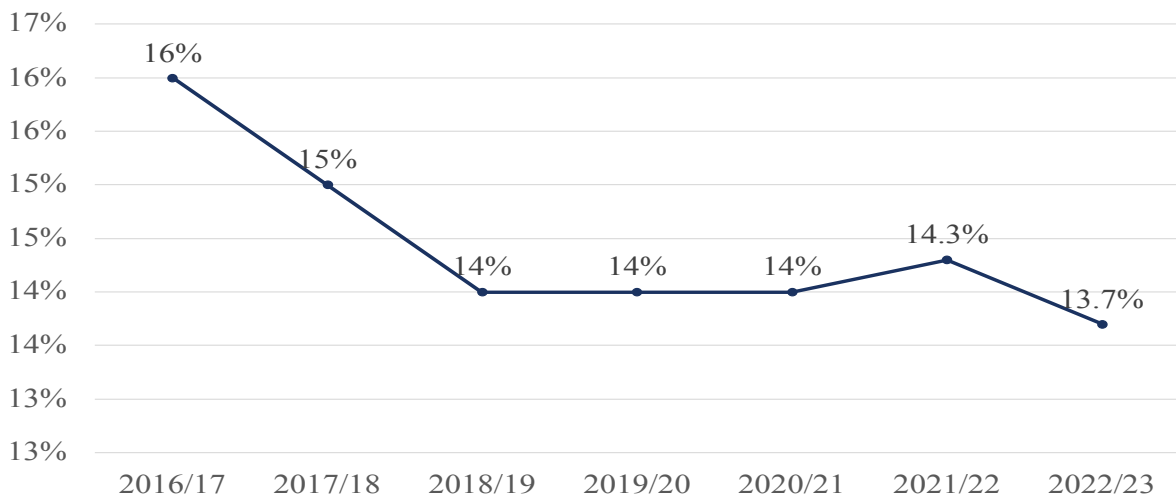


Figure 3: Proportion of the Education Sector Budget Within the National Budget

As Figure 3 shows, there has been a 6.3% decline in the education sector budget, from 16% in 2016/17 to 13.7% in 2022/23. With the limited and declining education sector budget, it is tempting to believe that it is unlikely that the planned basic education curriculum will achieve its goals, including the promotion of 21st century skills. The next part describes the scope in term of contents, activities and time allocated to 21st century skills in the Standard III social studies syllabus, which are summarized in Table 8.

Table 8: Coverage of 21st Century Skills in the Standard III Social Studies Syllabus with the Associated Contents, Activities and Time Allocated

Class	21 st Century Skills	General contents/topic	Contents/sub-topic	%	Activities/Tasks	%		Number of periods allocated to syllabus activities
STD III	Critical thinking	1. Recognizing different events occurring in the environment	One out of two subtopics addressed critical thinking, namely; <i>“Conserving the environment surrounding society”</i>	50	Two of the eight activities in this topic cover critical thinking namely; <ul style="list-style-type: none"> Analyzing things that constitute the school, environment Analyzing the importance of a clean environment 	25		10.5 periods/42 periods
		2. Recognizing the principles of patriotism in society	One of the three subtopics addresses critical thinking, namely; <i>“Build a good relationship with the surrounding community”</i>	33.3	One of the six activities in this topic cover critical thinking, namely; <ul style="list-style-type: none"> Analyzing the concept of family 	16.6		5/30 periods
		3. Applying a knowledge of maps and the solar system in daily life	None	None	None	None		None
		4. Applying economic principles in production activities	Two of the three subtopics address critical thinking, namely; <i>“Recognising the production activities in the society”</i> and <i>“Applying entrepreneurial skills in social activities”</i>	66.6	Four of the six activities in this topic cover critical thinking, namely; <ul style="list-style-type: none"> Analysing the production activities in a family Assessing the responsibility of every family in production activities Assessing economic activities in the 	66.6		20/30 periods

Class	21 st Century Skills	General contents/topic	Contents/sub-topic	%	Activities/Tasks	%		Number of periods allocated to syllabus activities
					surroundings e.g areas with arable land and rainfall <ul style="list-style-type: none"> Analysing the importance of economic activities in society 			
			Total	37.5	Total	27.1	Total	5.1
	Creativity and innovation	1. Recognizing different events occurring in the environment	None	None	None	None		None
		2. Recognizing the principles of patriotism in the society	One out of two subtopics addressed creativity and innovation namely; <i>Promoting Tanzanian culture</i>	50	One out of six activities in this topic covered creativity and innovation namely; <ul style="list-style-type: none"> Dancing to and singing familiar traditional songs 	16.6		5/30 periods
		3. Applying the knowledge of maps and the solar system in daily life	One out of two subtopics addressed creativity and innovation namely; " <i>Using maps in different environment</i> "	50	One out of three activities in this topic covered creativity and innovation namely; <ul style="list-style-type: none"> Drawing maps of different things in the school 	33.3		3.3/10 periods
		4. Applying economic principles in production activities	None	None	None	None		None
			Total	25	Total	12.5	Total	4.1
	Collaboration	1. Recognizing different events occurring in the environment	None	None	None	None		None
		2. Recognizing the principles of patriotism in society	One of the three subtopics address collaboration, namely;	33.3	One of the six activities in this topic cover collaboration, namely;	16.6		5/30 periods

Class	21 st Century Skills	General contents/topic	Contents/sub-topic	%	Activities/Tasks	%		Number of periods allocated to syllabus activities
			<i>“Build a good relationship with the surrounding community”.</i>		<ul style="list-style-type: none"> Describing one’s relationship with one’s friends. 			
		3. Applying a knowledge of maps and the solar system in daily life	None	None	None	None		None
		4. Applying economic principles in production activities	None	None	None	None		None
			Total	8.3	Total	4.2	Total	5
	Communication	1. Recognizing different events occurring in the environment	One of the two subtopics addresses communication, namely; <i>“Promoting Tanzanian culture”</i>	50	One of the eight of activities in this topic cover communication, namely; <ul style="list-style-type: none"> Show how Tanzanian ethnic groups greet each other 	12.5		5.25/42 periods
		2. Recognizing the principles of patriotism in society	None	None	None	None		None
		3. Applying a knowledge of maps and the solar system in daily life	None	None	None	None		None
		4. Applying economic principles in production activities	None	None	None	None		None
			Total	12.5	Total	3.1	Total	5.25

Table 8 shows the four 21st century skills; namely, critical thinking, creativity and innovation, collaboration and communication, together with the respective contents, activities and the number of periods as stipulated in the social studies syllabus for Standard III. Approximately a third (37.5%) of the syllabus contents cover critical thinking, followed by creativity and innovation (25%) and finally communication (12.5%). Less than 10% of the syllabus activities was related to collaboration. Furthermore, slightly over a quarter (27.1%) of the syllabus activities covered critical

thinking, followed by creativity and innovation (12.5%). Likewise, less than 10% of the syllabus activities covered collaboration and communication skills, respectively. Comparatively, contents and activities that promote critical thinking have been highly prioritized in the aforesaid syllabus over those that promote creativity and innovation, collaboration and communication. Additionally, on average, each activity across the four 21st century skills was allocated five periods, equivalent to three hours 20 minutes, since every period lasts 40 minutes.

8.4 Analysis of the Standard VI Syllabus

This part describes the scope in term of the contents, activities and time allocated to 21st century skills in the standard VI social studies syllabus. Table 8 provides a summary of the preceding statement.

Table 8: Coverage of 21st century Skills in the Standard VI Social Studies Syllabus and the Related Contents, Activities and Time Allocated

Class	21 st Century Skills	General contents/topic	Contents/sub-topic	%	Activities/Tasks	%		Number of periods allocated to syllabus activities
STD VI	Critical thinking	1. Recognizing different events occurring in the environment	All three subtopics address critical thinking, namely; <i>“Conserving the environment surrounding society”</i> , <i>“Keeping records of historical events”</i> and <i>“Applying a knowledge of weather conditions in daily activities”</i> .	100	Three of the six activities in this topic cover critical thinking, namely; <ul style="list-style-type: none"> Analyzing hazards resulting from the destruction of the environment Analyzing ways to record information on historical events Analyzing the seasons of the year 	50%		18/36 periods
		2. Recognizing the principles of patriotism in society	All three subtopics address critical thinking namely; <i>“Promoting Tanzanian culture”</i> , <i>“Building good relations with the surrounding community”</i> and <i>“Honouring our heroes in society”</i>	100	Four of the seven activities in this topic cover critical thinking, namely; <ul style="list-style-type: none"> Analyzing Tanzanian culture Analyzing the relations between Tanzania and other African countries Assessing the liberation movements 	57.1		19.4/34 periods

Class	21 st Century Skills	General contents/topic	Contents/sub-topic	%	Activities/Tasks	%		Number of periods allocated to syllabus activities
					currently existing in society <ul style="list-style-type: none"> Assessing the contribution of African heroes 			
		3. Applying the knowledge of maps and the solar system in daily life	One out of two subtopics covered critical thinking namely <i>Recognizing the solar system</i>	50	One out of four activities addressed critical thinking namely <ul style="list-style-type: none"> Analysing the concept of the Earth's revolution 	25		5/20 periods
		4. Applying economic principles in production activities	Two out of three subtopics addressed critical thinking namely; <i>Appreciating and protect national resources</i> <i>Recognizing production activities in the society</i>	66.6	Three out of six activities in this topic covered critical thinking namely; <ul style="list-style-type: none"> Analysing resources that are available in Tanzania Assessing production activities in Tanzania Analysing how production activities stir the relations between Tanzania and other countries 	50		14.5/29 periods
			Total	79.1	Total	45.5	Total	5.1
	Creativity and innovation	1. Recognizing different events occurring in the environment	None	None	None	None		None
		2. Recognizing the principles of patriotism in society	None	None	None	None		None
		3. Applying a knowledge of maps and the solar system in daily life	One of the two subtopics address creativity and innovation, namely;	50	Two of the four activities in this topic cover creativity and innovation, namely;	50		10/20 periods

Class	21 st Century Skills	General contents/topic	Contents/sub-topic	%	Activities/Tasks	%		Number of periods allocated to syllabus activities
			<i>"Using maps in the environment"</i>		<ul style="list-style-type: none"> Drawing and reading a map of the local area Drawing and reading a map of Tanzania 			
		4. Applying economic principles in production activities	None	None	None	None		None
			Total	12.5	Total	12.5	Total	5
	Collaboration	1. Recognizing different events occurring in the environment	None	None	None	None		None
		2. Recognizing the principles of patriotism in society	None	None	None	None		None
		3. Applying a knowledge of maps and the solar system in daily life	None	None	None	None		None
		4. Applying economic principles in production activities	None	None	None	None		None
			Total	0	Total	0	Total	0
	Communication	1. Recognizing different events occurring in the environment	One of the three subtopics address communication, namely; <i>"Keeping records of historical events"</i>	33.3	One of the eight of activities in this topic cover communication, namely; <ul style="list-style-type: none"> Presenting data on historical events 	12.5		4.5/36 periods
		2. Recognizing the principles of	None	None	None	None		None

Class	21 st Century Skills	General contents/topic	Contents/sub-topic	%	Activities/Tasks	%		Number of periods allocated to syllabus activities
		patriotism in society						
		3. Applying a knowledge of maps and the solar system in daily life	None	None	None	None		None
		4. Applying economic principles in production activities	None	None	None	None		None
			Total	8.3	Total	3.1	Total	4.5

Table 8 shows the four 21st century skills; namely, critical thinking, creativity and innovation, collaboration and communication and the respective contents, activities and number of periods as stipulated in the social studies syllabus for Standard III. More than three quarters (79.1%) of the syllabus contents cover critical thinking, followed by creativity and innovation (12.5%) and communication (8.3%). Conversely none of the contents cover collaboration skills. Furthermore, about half (45.5) of the syllabus activities address critical thinking skills and a third (12.5) cover creativity and innovation. Moreover, less than 10% of the syllabus activities cover communication and none of the activities addresses collaboration skills. These results suggest that contents and activities that promote critical thinking skills are more highly emphasized in the syllabus than those that promote creativity and innovation, collaboration, and communication skills. Additionally, on average, each activity across the four 21st century skills was allocated five periods, which is equivalent to three hours and 20 minutes, since every period lasts 40 minutes.

9. Reflection

The findings show that the intention to promote 21st century skills through the basic education system in Tanzania is clearly stated in various policy documents, including the 2014 Education and Training policy, the National Curriculum Framework for Basic and Teacher Education and curriculum documents, including the syllabus and textbooks. Despite this integration, the findings reveal that the participants had mixed opinions about whether the basic education curriculum is geared towards delivering, although the majority thought that the basic education curriculum is relevant and promotes competences that will enable graduates to survive in the 21st century. These findings imply that there exists a gap between the intended and enacted curriculum, which hinders the proper implementation of the curriculum.

The findings further reveal that critical thinking skills, compared to other skills, were predominant across the contents and activities of both the Standard III and Standard VI syllabuses. However, critical thinking skills were more prominent in the contents and activities of the Standard VI syllabus than the Standard III one. Furthermore, creativity and innovation skills were more evident across the activities stipulated in the Standard III syllabus compared to the Standard VI one. Moreover, while collaboration skills were addressed to a small scale across the contents and activities of the Standard III syllabus, such skills were not completely covered by the Standard VI one. Additionally, there were no variations with regard to the amount of time allocated to the activities of the two class levels. From the preceding statements, it can be deduced that the social studies syllabus for primary school prioritized the development of a single skill set (critical thinking) while neglecting the other skills sets (creativity and innovation, collaboration and communication), which are equally important for individuals living in the 21st century.

The findings suggest that, even though the analysis reveals that 21st century skills have been integrated into the basic education curriculum, this does not necessarily suggest that the skills will be delivered and promoted as planned. There are system elements which are weak, and hence threaten the effective implementation of the curriculum. These weak system elements include the limited financing, teacher shortage, and lack of a teacher continuous professional development programme. Moreover, research has revealed that there exist inconsistencies between the curriculum's goals and the teachers' classroom instruction (Atuhura & Kaffenberger, 2020).

10. Recommendations

On the basis of these findings, we suggest that due consideration should be given to provision of the resources required for the successful implementation of the curriculum. Hence, deliberate efforts must be made to ensure that sufficient funds are allocated, sufficient teachers are employed and that those already employed receive regular training. This will help to narrow the gaps between the intended curriculum and the enacted curriculum, and increase the likelihood that learners will be equipped with the skills envisaged in the curriculum and policy documents.

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