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THE DEVELOPMENT OF 21ST CENTURY SKILLS TO SECONDARY SCHOOL STUDENTS IN TANZANIA: HOW COMPETENT ARE THE TEACHERS FOR THE TASK?

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ABSTRACT

This study explored teachers' competence in developing 21st-century skills in teaching and learning processes. Specifically, the study assessed teachers' ability in planning and in implementing lessons that develop 21st-century skills. A purposive sample of 32 Geography teachers from 10 secondary schools in Morogoro municipality was involved in the study. Data were collected through interviews, documentary analysis and classroom observations. The findings indicate that most of the Geography teachers in secondary schools in Tanzania are less aware of 21st-century skills which include creativity; critical thinking, communication and collaboration thus limiting their ability to integrate 21st-century skills in planning and implementation of their lessons. From these observations, the study recommends that in-service training be provided to secondary school teachers on how to integrate 21st-century skills in lesson planning and implementation.

KEYWORDS: 21st Century Skills, lesson planning, lesson implementation, Teachers, Competence, Tanzania.

1. INTRODUCTION

The term 21st Century skills encompasses a set of knowledge, skills, work habits and characteristics that are perceived by different stakeholders as essential standards for a learnt person (CBSE, 2020). Voogt and Roblin (2010) define 21st-century skills as "an overarching concept for the knowledge, skills and dispositions citizens need to be able to contribute to the knowledge society." In general terms, the 21st Century skills include communication, collaboration, critical thinking and creativity as proposed by the US-based partnership for 21st Century (P21) (Joynes, Rossignolis & Amonoo-Kuofi, 2019). The development of 21st-century skills is a global concern which intends to ensure that the education provided addresses the learning needs and wants for sustainable development (United Nations, 2016). The knowledge economy era has compelled education systems to restructure their curricula at different levels of education to ensure that students adequately develop the 21st Century skills to fit in the labour market (Goldberg, 2012).

The 21st-century skills are important for the holistic development of students, who are expected to serve as a workforce at global and local levels and thus stimulating the production of goods and services for social and economic development. The need for such skills in the community has placed a new demand for teachers to ensure that teaching and learning are centred towards the acquisition of 21st-century skills (Sulaiman & Ismail, 2020). Teachers are expected to facilitate the acquisition of 21st-century skills by adopting skills-centred pedagogy in the subjects taught and nurturing skills through extracurricular activities (Suto & Eccles, 2014). Most teachers are facing challenges in facilitating the acquisition of 21st-century skills due to limited competencies, inadequate resources and poor teaching and learning environments (Beswick & Fraser, 2019)

This study evaluated secondary school teachers' competence in developing 21st-century skills for students in Morogoro Municipality in Tanzania. The study assessed geography teachers' ability in planning and implementing lessons that reflect the development of 21st-century skills. The study focused on 21st-century skills as delineated in the Tanzania education curriculum. The key 21st-century skills emphasized in teaching and learning in the current Tanzania curriculum include critical thinking, creativity, communication, collaboration, information literacy, media literacy, technology literacy, flexibility, leadership, initiative, productivity and social skills (MoEVT, 2007). Given the time and resources, all the skills cannot be accommodated in one study, this study, therefore, focused on four competencies (4cs) namely, creativity, critical thinking, communication and collaboration.

To reach vision 2025 and agenda 2030, the education policy in Tanzania emphasizes the development of 21st-century skills as a prerequisite for competent, competitive and innovative workforce training for social, economic and political transformation (MoEVT 2014). The need to develop 21st-century skills is instigated by technological advancement and the competitive market demand at global and local levels. To stimulate the acquisition of 21st-century skills among students, the Tanzania education system thus shifted from content to a competency-based curriculum (CBC) in 2005 (Kopwel, 2014).

The Government of Tanzania realizes the importance of education as a strategic agent for economic transformation from low agricultural productivity to a semi-industrial country by 2025 (MoEVT, 2014). Therefore, deliberate efforts have been made in transforming the curriculum and teacher education to ensure that teachers and students develop the necessary skills required in addressing the contextual needs of society at global and local levels (Rao & Namamba, 2017). The transformation of the education system from content coverage to competency development in 2005 in Tanzania emphasized the acquisition of 21st-century skills as a catalyst for manpower training for national development (Kopwel, 2014).

The curriculum of Tanzania emphasizes integrating theories and practices in real-life situations; teachers are required to develop skills among the students (MoEVT, 2007). The teachers are required to design a learning task which is to be carried out with realistic content to develop competencies

(Paulo, 2014). The ability of the teachers to translate strategies, and integrates knowledge and skills have a positive impact on the implementation of 21st-century skills (Sulaiman & Ismail, 2020). The teacher can organize lessons, develop materials and set activities which focus on the development of 21st-century skills. It is through group discussions, acting in plays, preparing oral presentations and debates the 4cs are fostered and promoted among the students (Erdogan, 2019). Thus, teachers as an engine for skills acquisition in schools are required to be competent enough to enable students to acquire 21st-century skills (Mgaiwa, 2018).

Even though studies have established a poor mastery of 21st-century skills among students in Tanzania (Massay, 2020; Uwezo, 2013; Sauti ya wananchi, 2014; Haki elimu, 2021), there is limited literature on secondary school teachers' competence in developing 21st Century Skills in teaching and learning processes. The lack of such literature limits the inputs for intervention strategies towards the development of 21st-century skills in secondary schools in Tanzania.

Literature indicates a significant relationship between teachers' competencies and the ability to plan and implement lessons using specific skills desired by students. For example, Sulaiman and Ismail (2020) found that teachers' competencies in the subject matter are attributed to their capacity to foster21st-century skills in their students on that particular subject. Similarly, Beswick and Fraser (2019) argued that the importance of teachers' competence to impart 21st-century skills makes teachers require a tailored training programme to infuse creativity and critical thinking into students. Further, the study conducted in Malaysia on teachers' competence and 21st-century skills in transformation schools found a relationship between professional competence and 21st-century skills (Sulaiman & Ismail, 2020).

The dimension of teachers' competencies helps further the development of 21st-century skills and improves the quality of teaching. Muin et al (2020) also show students benefit from competent teachers who implement co-curricular activities well. A study by Oudeweetering and Voogt (2018) on how teachers conceptualize and perceive the enactment of 21st-century skills in the Netherlands found that teachers comprehensively possess digital literacy, innovation and thinking, critical thinking and communication in teaching and learning. However, there were no clear practically viable definitions of 21st-century skills; teachers rely on the teachers' self-perceived classroom activities. The same has been observed in Kenya whereas Wafumbwa (2021) pinpoints that the Kenyan assessment framework for 21st-century skills is too unsure and cannot guide teachers, thus teachers are not well-informed in any elaborative framework.

Moreover, Kim et al (2019) conducted a study in Uganda, Ghana and India on improving 21st-century teaching skills and found that teachers need to be equipped not only with the acquisition of 21st-century skills but also with the dissemination of 21st skills. They need assistance, guidance and support to improve their practices. Kim et al (2019) findings echo the findings in a study by Waweru (2018) who found that teachers are not well prepared to implement the competence-based curriculum

in new subjects as opposed to old subjects. Teachers, therefore, need support in infusing creativity and critical thinking.

Though the 21st-century skills are embarked on the Tanzanian school curriculum, most studies are based on CBC (Muneja, 2015; Makunja, 2015) and less on 21st-century skills. Though there have been some efforts towards operationalization of the 21st-century skills (TIE, 2010), stakeholders have the opinion that graduates of secondary education lack skills and competencies, including 21st-century skills (Haki Elimu, 2021), thus putting into disrepute competencies of teachers who are expected to facilitate the acquisition of such skills. Little is known about how teachers develop 21st-century skills in the teaching and learning process. This study, therefore, assessed secondary school teachers' competence in developing 21st-century skills in planning and implementing lessons.

This study was guided by a Social Constructivism theory developed by Lev Vygotsky. The theory holds that learners' ability to complete tasks needs the assistance of teachers as more knowledgeable and experienced people than them. In this theory, learning is situated as a social and collaborative activity in which learners are responsible for constructing their knowledge guided by teachers to move them from a zonal of proximal development (ZPD) into a fully competent person (Vygotsky, 1986). In this sense, the acquisition of 21st-century skills among students depends on the teachers' ability to plan and implement lessons that move students from their level of understanding to a higher level of knowledge.

2. MATERIALS AND METHODS

A descriptive study employed non-probability sampling to purposely select 32 Geography teachers from 10 public secondary schools in Morogoro Municipality. Data were collected through face-to-face interviews, document analysis of lesson preparation, and classroom teaching and learning observations. Content and descriptive analyses were used to analyse data.

3. FINDINGS

The study indented to assess geography teachers' competence in imparting 21st-century skills to students through lessons. It sought to evaluate teachers' ability in planning and in implementing lessons that develop 21st-century skills. The 21st Century skills assessed by the study were creativity, critical thinking, communication and collaboration skills. The study findings are presented based on the specific objectives which were: assessing teachers' ability in planning lessons that develops 21st Century skills and teachers' ability in implementing lessons that develop 21st Century Skills:

3.1 Teachers' ability in planning lessons that develop 21st Century skills

Lesson planning is among the important factors for teachers' effectiveness. It can help to arouse a sense of control, security and confidence between teachers and students. Lesson planning contributes to the management of time, and creativity and can reinforce the links between the teachers' teams. Literature (Rodríguez-Gallego, 2014) denotes that the choice of content, methodological strategies,

resources and assessment activities depend much on the lesson plan. Teachers as key implementers are expected to demonstrate competence in preparing lessons that develop 21st-century skills.

To assess teachers' ability in planning lessons which reflect the development of 21st-century skills, the Geography subject lesson plans were assessed and analysed against eighty variables and these were as to whether teachers stated the learning outcome clearly (SMART), the list of teaching aids was shown on the lesson plan, the lesson plan provided the opportunity to students to explore or give their knowledge, the lesson plan linked the content and real-life situation, the lesson plan allowed students to work cooperatively, the lesson plan provided the opportunity to students to solve problems for themselves, the lesson plan stated ways of assessing students activities to check if the intended skills/ability had been achieved and whether the lesson plan provided a room for teacher-students interaction and among students themselves. The findings are indicated in Table 1.

Table 1 Teachers' ability to Planning Lessons that develop of 21st Century Skills

	Measures			
Variables	**WD**	**D**	**PD**	**ND**
The teacher states the learning outcome clearly (SMART)	11.8%	23.5%	47.1%	17.6%
The list of teaching aids is shown on the lesson plan	0	11.8%	29.4%	58.8%
The lesson plan allowed students to explore or give their knowledge	5.8%	29.4%	53%	11.8%
The lesson plan links the content and real-life situation	0	23.5%	23.5%	53%
The lesson plan gives opportunity to students to work cooperatively	11.8%	29.4%	17.6%	41.2%
The lesson plan provides the opportunity for students to solve problems for themselves	5.8%	17.6%	35.3%	41.2%
The lesson plan clearly states ways of assessing students' activities	0	11.8%	53%	35.3%
The lesson plan provides room for teacher students interaction and among the students themselves	11.8%	29.4%	47.1%	11.8%

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Source Field data WD= well done, D= done, PD= partially done, ND = not done

Findings in Table:1 indicate that the majority of the lesson plan reviewed did not reflect the 21st-century skills, only 35.3 percent (11.8 and 23.5 % well done and done respectively) stated the learning outcome clearly, which is SMART (specific, measurable, attainable, relevant and time-bound). This implies the majority of the lesson plans analysed did not specify the intended learning outcomes. One of the lesson plans stated the specific objective as "To explain the concept of climate." This statement does not show the intended outcome and the skills that the teacher intended to develop among the students.

This situation implies that the majority of teachers are not able to prepare lesson plans which reflect the development of 21st-century skills and the reason could be, a lack of awareness of the 21st-century skills incorporated in the secondary education curriculum. During an interview with teachers, the majority of them revealed that they were not aware of such skills. It is therefore difficult to integrate into lessons what they did not know and they were not sure whether such skills were incorporated into the curriculum. A Geography teacher from school A said,

> *The 21st Century skills are a new phenomenon to me and I am not sure if it is indicated in the curriculum. What I strive for is coverage of the topics indicated in the syllabus before the end of the year.'*

This revelation means, the incorporation of 21st-century skills in the curriculum does not result in teachers' preparation of lesson plans which reflect the development of such skills. The findings about the lack of teachers' awareness of the inclusion of 21st-century skills in the curriculum concur with the findings in a study by Makunja (2015) in Tanzania, who established that most of the teachers' lesson plans do not reflect the skills expected to be developed among the students. It is therefore proposed to the ministries dealing with education in Tanzania to develop on-the-job training to equip teachers with the knowledge and skills for preparing lessons that reflect the 21st Century skills and making teachers adequately involved in curriculum design and development.

Although lesson planning documents indicated that 11.8 per cent of teachers planned to use teaching aids during the teaching and learning processes, the actual classroom observations revealed things that were not consistent with the contents of the lesson planning document. This implies even those few teachers who indicated using teaching aids in their lesson plans, the listed teaching aids were neither brought to nor used in the lesson. When asked during the interview, the majority of teachers reported that the schools lacked teaching and learning resources such as a globe, Manila papers, and clip charts which can be used in preparing teaching aids. This was attested by a geography teacher from school D who said,

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> '*Most of the teaching and learning aids listed in the lesson plans, are police officeried and pasted from the syllabus, they are not available in schools. Even when present, the time factor affects their actual usage in the class.*

It can therefore be deduced that the majority of teachers do not prepare and use teaching aids during the teaching and learning process. This lowers the development of creativity and critical thinking skills among the students.

Contrary to the study by Rahman et al (2020) which revealed technological teaching aid is mostly being used in teaching and learning processes in Malaysia, the classroom observations showed the majority of teachers do not use technology to facilitate teaching and learning processes. The majority reported not using the technology because they did not have computers and other technological tools to aid teaching and learning. However, all teachers involved in the study had smartphones; the study observed that they were not using them as teaching tools. When teachers were interviewed as to why they were not using their smartphones as technological tools to facilitate classroom teaching and learning, the majority acknowledged not having access to internet connectivity due to financial constraints as attested below,

> "*Although I own a smartphone, I do not use it as a teaching tool because I do not have money to buy internet bundles to access internet connectivity."*

Another teacher had to say,

> *"If the government could provide free internet connectivity at my school, I could use my smartphone as a technological tool to aid my classroom teaching and learning"*

In this regard, it is therefore important for the school administration to provide internet connectivity in their schools for teachers to access the internet. Studies affirm that the usage of smartphones as a technological tool in teaching and learning could address the technological gap in developing countries due to their availability and affordability (Bulk et al, 2013; Gawate & Jadhav 2019; Anshari, et al, 2017) It is, therefore, important for education authorities to awaken teachers on the usage of different technologies including smartphones to aid teaching and learning. Also, there should be reliable internet connectivity in schools to enhance technology use in teaching and learning.

When students learn by doing, they adequately develop creativity, critical thinking and problem-solving skills (Care et al, 2018). However, Table 1 indicates that only 35.2 per cent of the teachers (those assessed as well done 5.8 percent and as done 29.4 per cent) provide the opportunity for students to explore the lessons on their own. Most of the lesson plans show no activities set for students rather they are passive observers and listeners of what the teacher does in class. This deprives students of the opportunity of developing creativity and critical thinking. The majority of teachers who were

interviewed depicted a large number of students and a lack of learning and teaching resources as the barrier for them to provide activities that could explore students' ideas.

The part of the lesson plan which requires the teacher to reflect on the content in real life was poorly stated. The findings indicate that 23.5 per cent of the lesson had a linkage between content and real-life situations, 23.5 per cent considered partially done and the rest (53%) had no linkage to real-life situations. This was depicted by lesson plans in the reflection part as stated 'to guide students to present their discussion.' This does not show any implication in reflecting on real-life situations because it is just an activity to be performed by students. These findings are consistent with the findings in a study by Schleicher (2012) and Lupeja and Komba 2022 who found that there is an inability of the education system to connect the content to real-world relevance. Teachers have been concentrating on coverage of the syllabus as the assessment is mainly based on the examinations. Learning processes, therefore, have been inclined towards the demand of examination than imparting students with skills (Lupeja & Komba, 2021). Since teachers do not integrate the subject content with real-life situations, there is a need to address the applicability of the content and real-life situation to the opportunity for students to be creative and innovative.

According to Roekel (2011), students working together and cooperatively develop communication and collaboration skills. However, this study, found that only 47 per cent (5.8 and 41.4 % well done and done respectively) of the lesson plan analysed, provided opportunities for students to work together cooperatively. Most of the lesson plans indicated teaching and learning method was a group discussion, other methods such as gallery walk, think pair share and work partner were not indicated. The main reason given for not using other methods was over clouded classrooms. Similar findings are reported in a study by Massay (2020) who revealed that classes are too congested with students hindering the integration of four skills. Due to clouded classes, sitting arrangements do not favour teaching methods that develop collaboration skills, and impede the movement of students and participation in learning activities.

Generally, it can be argued that most teachers have limited ability to the preparation of lesson plans which reflects 21st-century skills. Such a situation is attributed to a lack of awareness of such skills. Studies (Waweru, 2018; Wafumbwa, 2021) affirm the need for in-service teachers' training to develop the 21st Century. Similarly, Nzima (2016) revealed the importance of in-service training for teachers to improve classroom teaching and learning processes. Professional development is highly needed among teachers to polish their competencies as the study (Hardman et al (2012) found. The study acknowledged that teachers who participate in school-based training show significant differences in their pedagogical practices and demonstrate a positive attitude towards their teaching and learning. The effectiveness of the teachers learning outcome depends on professional development, mentoring, coaching and feedback (Guskey 2003, Fullan 2001). It is therefore important for the concerned stakeholders and the education authorities in Tanzania to give priority to in-service training to teachers to update their knowledge and skills.

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3.2 Teachers' ability to implement lessons that develop 21st-Century Skills

Also, the study assessed the ability of the teachers in implementing lessons which reflect 21st-century skills. According to the curriculum of Tanzania, students should possess and apply the knowledge acquired at school to solve life challenges (TIE, 2013). Implementation of lessons should focus on the development of 21st-century skills. Teachers have the role of fostering knowledge and skills in the students; thus, they are expected to build 21st including 4cs.

While assessing the competencies of the teachers in secondary schools in implementing lessons which develop 21st-century skills in Geography lessons, about 24 observations were conducted in classroom teaching and learning practices. The aim was to find out how skills such as creativity, critical thinking, communication and collaboration are developed among the students. The findings are discussed in the preceding subsections.

3.2.1 Teachers' Ability to develop skills in creativity in teaching and learning

Creativity skills refer to the ability of an individual to evaluate, elaborate and refine ideas and products (Kereluik et al., 2013). It brings about new ideas and new ways of using ideas. Students with creative and innovative skills can find out new solutions to tackle problems and face challenges in life. To assess the teachers' competence in developing creativity skills among students, the following (indicators) were observed during learning sessions: teacher's ability to use a wide range of idea creation techniques; teachers allowing students to develop, implement and communicate their ideas to others effectively; teachers cultivating the culture of being open and responsive and providing constructive feedback to students; teacher viewing failure as an opportunity to learn and encouraging students who fail.

Table 2 Teachers' Ability in Implementing Lessons which Develop Creativity

Variables	Measures			
	WD	D	PD	ND
The teacher uses a wide range of idea-creation techniques (such as brainstorming)	4.2%	58.3%	33.3%	4.2%
The teacher allows the students to develop, implement and communicate their ideas to others effectively (create their idea to tackle a problem)	8.3%	25%	50%	16.7%

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The teacher cultivates the culture of being open and responsive and provides constructive feedback to the students	16.7%	45.8%	29.2%	8.3%
View failure as an opportunity to learn and encourage students who fail	8.3%	33.3%	25%	33.3%

Source Field data WD= well done, D= done, PD= partially done, ND = not done

Findings in Table 2 indicate that 62.5 per cent (4.2 and 58.3 per cent well done and done respectively) of teachers develop creativity skills among their students by using a wide range of ideas creation techniques. The main idea-creation technique used by teachers was brainstorming. This was used as a way of introducing the lesson to most of the teachers while other techniques such as mind mapping and role play were not used.

Meanwhile, 33.3 percent (8.3 and 25 per cent well done and done respectively) and the rest either partially or poorly provide an opportunity for students to develop, implement and communicate their ideas to others effectively. The development of ideas is accomplished through students' activities which provide an opportunity to solve problems and come up with new ideas. It was observed that no activities were provided for students to perform in the classroom and outside the classroom. During an interview with a Geography teacher from school E, she said,

> *"The numbers of students in the class are so many, Thus, hard to concentrate on individual students' work We normally arrange them in groups and make them Discuss and choose a few of them to present and share their creativity.*"

With overcrowded classrooms, it is difficult to develop creativity among students even if the teacher can foster such skills. Teachers who cultivated the culture of being open among students were 62.5 per cent (16.7 and 45.8 per cent well done and done respectively). The rest neither asked questions nor provided an opportunity for students to respond to questions. Unfortunately, students were not courageous to ask questions when given the opportunity, as the result, there was one-way interaction. Similar observations are made by Paul (2014), who revealed that teachers are mostly using the questions and answers method and the majority of students never try to answer the questions to avoid being wrong. This implies that classroom set-up and particularly in this era of fee-free education policy has tripled the enrolment rate, had minimized the interactive teaching and learning among students themselves and students with their teachers.

On the aspect of giving the right remark when students respond to questions, only 41.6 percent (8.3 and 33.3 per cent well done and done respectively) of the teachers encouraged students who failed to

answer the questions correctly. On the other hand, most of the teachers remained quiet when students responded or invited other students to answer the questions. The teacher in the Geography class from school C was heard saying to a student:

> *"Salome you are wasting time over there, if you do not know how to convert a ratio scale into a statement, sit down and give a chalk to Maimuna to do it."*

Even when Maimuna got the answer correctly, there was no applause from the teacher. That means, those who could not respond correctly are discouraged from learning and those who could get it right there are mute. Such a situation is associated with a lack of effective teacher training to meet the learning needs of the 21st century. The findings are similar to the findings in a study by Nnorom and Mezieobi (2020) in Nigeria, who found that most of the teachers lack the adequate skills required to enhance the development of 21st-century skills. Moreover, the classroom observations and the interview voices, reveal that most of the teachers lack competence in developing creativity skills among students while those who are competent are hampered by teaching and learning environments which limit their ability to develop creativity among students. This implies that teachers are a significant factor to enhance or hinder students' ability development of creativity skills among students. So, an intervention strategy on capacity building for teachers is very essential.

3.2.2 Teachers' Ability to Develop Critical Thinking skills in teaching and learning

Critical thinking is the ability of an individual to reason effectively, ask pointed questions and solve problems and analyse and evaluate alternative points of view (PPRC, 2010). According to Kereluik et al (2013), critical thinking can be developed through solving problems and interpreting information. It is very beneficial to students since students acquiring critical thinking skills can have the ability to make better decisions in life and better judgments.

The study, therefore, intended to examine whether or not teachers were developing critical thinking skills among students in the classroom. The observations were made based on four indicators which focused on whether or not the teacher guides students to compare information from different sources; the teacher guides students to summarize or create their interpretation of what they read; interprets information and conclude; the teacher asks significant questions that clarify various points of view and lead to better solutions or understanding. The findings are indicated in Table 3.

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Table 3 Teachers' Ability in Implementing Lessons which develop Critical thinking

Variables	Measures			
	WD	D	PD	ND
Guiding students to compare information from different sources to complete an assignment.	4.2%	20.8%	16.7%	58.3%
Guiding students in summarizing or creating their interpretation of what they read	0	12.5%	16.7%	70.8%
Interpreting information and drawing conclusions	0	16.7%	8.3%	75%
Asking significant questions that clarify various points of view leads to better solutions or understanding.	12.5%	45.8%	37.5%	4.2%

Source Field data WD= well done, D= done, PD= partially done, ND = not done

Findings in Table 3 indicate that there is low development of critical thinking among students; only 25 percent (4.2 and 20.8 per cent well done and done respectively) of the teacher's guide students to compare different materials from different sources while summarization and interpretation of information are done by only 12.5 per cent. Most of the teachers interviewed said that teaching and learning materials are a hindrance to critical thinking development among students. Teachers fail to provide activities which involve comparing, summarizing, creating their ideas or interpreting different material since in the classroom only one book is available. The geography teacher from school F hinted during an interview session,

> "*In our school, there are no required resources such as a library, internet and a geography room. Even a text book, there is only one available. in such a situation, it is difficult to develop the intended skills".*

This means, with a single book in a class of 73 students, it is hard for teachers to develop critical skills among students through reading. Teachers use the traditional way of teaching, chalk and chalk boards, which is contrary to the competence-based curriculum which emphasizes the facilitation of the acquisition of 4cs through interaction with the material and among the learners themselves (Tambwe, 2017, Muneja, 2015). Therefore, it can be argued that critical thinking skill is a function of students' interaction with learning resources, the absence of such a situation results in inadequacy of skills.

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There is a need for intervention to improve students' development of critical thinking skills through the supply and effective use of interactive teaching and learning resources such as books, internet resources and geography models.

3.2.3 Teachers' Ability in developing communication skills in teaching and learning

Communication is the ability to articulate oneself through all media of communication such as oral, written, nonverbal and digital as well as the skills necessary to be an active and respectful listener to diverse audiences (Kereluik, et al 2013). Students with the ability to communicate effectively can reason, make a criticism, present ideas and contribute to society. In order to assess teachers' competence in developing communication skills among students the four variables were observed during learning sessions, these were whether the teacher encourage students to convey their thoughts and ideas orally, written and nonverbal; the teacher listen effectively; the teacher cultivate the culture of asking and answering questions in front of the audience by allowing students to ask or answer questions; or whether the teacher invites students to demonstrate in front of other students. The findings are shown in Table 4.

Table 4. Teachers' Ability to Implementing Lessons which Develop Communication skills

Variables	Measures			
	WD	D	PD	ND
Encourage students to convey their thoughts and ideas effectively using oral, written and nonverbal communication skills (Use of debate or presentations)	12.5%	16.7%	12.5	58.3%
Listen effectively (the teacher waits sufficient time for the student to answer questions)	4.2	4.1%	41.7%	0
Cultivate the culture of asking and answering questions in front of the audience (allow students to ask questions)	6.7%	58.3%	25%	0
The teacher invites the students to demonstrate in front of other students	4.2%	16.7%	0	79.1%

Source Field data WD= well done, D= done, PD= partially done, ND = not done

It was observed that the teachers' students' interaction was low. Most of the time, teachers asked questions but no responses from students and the teachers continued with their lessons regardless. As indicated in Table 4, only 29.2 per cent (12.5 and 16.7 per cent well done and done respectively) of

the teachers encouraged students to convey their ideas orally through presentation and debate. Most teachers did not use debate and presentation because they perceived them as a waste of time during class hours. During the interview, a Geography teacher from school C said,

> "*In our school days, the debate allowed us to communicate and enhanced creativity skills but nowadays, it is hard to retain students in school for debate after school hours as during class hours we concentrate on pushing the syllabus to the end.* "

This implies that the development of communication skills through debating is ineffective among students due to examination-oriented school systems. Other teachers added that *"The English language is another barrier to students' interaction in schools where English speaking is very strict."* These findings are in line with the findings of numerous studies in Tanzania (i.e., Komba & John 2015; Mtallo, 2015; Massay, 2020, Lupeja & Komba, 2021) which regard debate as a means of both improving students' interaction and communication skills and improving students' language mastery. This means, there is a need of strengthening English language programmes in schools which would result in improving English language mastery and communication altogether.

It was observed that 45.9% (14.2% well done and 41.7% done) of the teachers listened effectively and wait sufficient time for students to answer questions. The teacher should lengthen the waiting time because a short waiting time denies students the opportunity to think and formulate answers to the questions asked. In contrast, most of the teachers did not give time students to think about the asked question. In this case when there was a delay in the answer the teachers chose another student to respond. Consequently, students were not given enough time to organize their thought and ideas. Denying them such an opportunity hinders the development of communication skills.

Table 4 indicates that 65 percent (6.7 and 58.3 per cent well done and done respectively) of the teacher asked questions and allowed students to ask questions. Mostly, teachers were the ones who asked questions, when students were allowed to ask questions, they did not show up. The teachers were capable of asking questions which needed responses from students but students rarely asked questions for clarification from their teachers. The findings concur with the findings in a study by Paul (2014) who found that although the second most used method of teaching was questions and answers after the lecture method, only 20.9 per cent of the teachers allowed their students to ask questions. This implies that students are the object of the processes and not the subject which hinders their ability to ask questions as part of communication skills.

Generally, teachers are not competent in developing communication skills since the language used in secondary schools as the media of communication is English, and teachers and students are not fluent in the English language as established by Massay (2020). Massay (ibid) found that teachers lack competence in integrating four English skills and most of the teachers use vernacular languages while

teaching. This means, there is a need to either change the medium of instruction from English to Kiswahili or improve the mastering of the English language to enhance communication skills among students themselves and students with their teachers.

3.2.4 Teachers' Ability in developing collaboration in teaching and learning

Collaboration is referred to as an effort to demonstrate the ability to work effectively and respectively with diverse learners to achieve shared goals with shared responsibilities (Roekel, 2011). Collaboration can be trained among students to make them accept differences and respect each other regardless of their differences (Sagala & Simanjuntak 2019). Students with collaboration skills work and understand others' perceptions on different matters hence peaceful coexistence.

In assessing teachers' ability in developing collaboration skills among students, four variables were observed during teaching and learning sessions: whether the teacher uses different grouping techniques; whether students are allowed to present group work to class; whether the teacher guide students to work collaboratively and value individual contributions in a group and, whether students work in pairs or small groups to accomplish the task given. The findings were as shown in Table 5.

Table 5 Teachers' Ability in implementing lessons which develop collaboration skills

Variables	Measures			
	WD	D	PD	ND
The teacher uses different grouping techniques (e.g. think pair share, Jigsaw, talk partner)	8.3%	16.7%	37.5%	37.5%
Present group work to the class and accomplish a common goal as a group	8.3%	16.7%	12.5%	62.5%
The teacher guides the students to work collaborative, and values the individual contributions made by each team member	12.5%	8.3%	20.8%	58.3%
Students work in pairs or small groups to accomplish the task	8.3%	16.7%	41.7%	33.3%

Source Field data WD= well done, D= done, PD= partially done, ND = not done

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The findings in Table 5 indicate that the development of collaboration skills among students is insufficient only 25 percent (8.3 and 16.7 per cent well done and done respectively) of the teachers observed used different grouping techniques to group students. It was observed that the common grouping techniques were group discussion and think-pair-share. Most of the teachers interviewed were aware of the teaching practices which develop collaboration skills but were not applying due to different reasons as a Geography teacher from school G noted,

> *'I normally use the lecture method because it is not easy to conduct a participatory method in a class of 73 students while the class is capable of accommodating only 40 students.*

Regarding the persistence of the lecture teaching method among teachers, another Geography teacher from school H, had this to say,

> "*Group discussion is good if you have smart students but with the nature of our students is the wastage of time because when students present what they discuss most of the time are off points hence a wastage of time''*

The minimal use of group discussion methods affects collaboration forums for students which also prevents effective learning processes and sharing of knowledge, skills and experiences.

It was observed that classes were crowded and group discussions were poorly managed. A large number of students in a group resulted in a few individuals dominating the discussion and it was difficult for the teacher to supervise all the groups. A similar observation is made by other scholars (i.e., Muneja, 2015; Mkomele, 2015; d Tambwe, 2017) who reveal that a large number of students in the classroom can prevent a teacher from facilitating the development of applicable knowledge and skills since the teacher cannot practice some of the teaching practices which develop such skills.

Findings of the current study confirm that teachers' practice of lesson implementation does not enhance the development of 21st-century skills. The findings are in in-line with the findings in other studies in East Africa which established that, despite the need for developing 21st-century skills among East African countries, teachers' limitations with such abilities do not equip students with such skills (Kajoro, Chirure & Simiyu, 2010). According to Vavrus and Bartlett (2012), teachers' views of knowledge production are shaped by the cultural, economic and social context in which they teach. This means the teacher's ability emanates from their competence, teaching and learning environment as the obstacles towards competence development. Therefore, there is a need for the concerned stakeholders to improve the teaching and learning environment by supplying adequate teaching and learning resources.

4. CONCLUSION

The teachers' competence in developing 21st-century skills is very important in teaching and learning processes. The study assessed teachers' ability in planning and in implementing lessons that develop 21st-century skills. The study concludes that most teachers have limited competencies required for the development of the 21st-century skills such as critical thinking, communication, collaboration and creativity. Such minimal level of competence is manifested in their lesson planning and executions in classes. Other associated factors include high-class size, language barrier, lack of enough teaching and learning resources and inadequate training towards 21st-century skills. Since such skills are very essential to 21st-century learners to address the labour market needs, the study recommends in-service training to secondary school teachers on how to integrate 21st-century skills in their lessons planning and implementation. Also, the teacher education institutions such as colleges and Universities should restructure their teacher education programmes to equip teachers with 21st-century skills necessary for 21st teachers. Moreover, the school Quality Assurance Department (SQAD) should ensure that 21st Century Skills in lesson preparation and teaching and learning are emphasized whenever they conduct school visits. Lastly, teachers themselves should be proud of their profession and hence should struggle to update their knowledge and schools towards modernized pedagogy to enhance the development of 21st-century skills.

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