

Curriculum Changes and Professional Development in Tanzanian Schools

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Abstract

Changes in curricula are important phenomena in any education system. For these to be effective, there is a need to involve teachers in professional development programs regardless of their educational background. This study provides insights into the effectiveness of professional development programs concerning several curriculum changes made in Tanzania's secondary schools. Data were collected in Dar es Salaam and Mtwara regions through a survey involving 272 teachers. The findings revealed that few teachers have been able to attend proper coordinated professional development programs, such as short courses, seminars and workshops. It was also found that most teachers have experienced at least 2 to 3 national changes of the school curricula in their teaching career, which makes it imperative to have continuous training and retraining. But more importantly, these teachers have encountered problems in coping with the changes made in curriculum, while the authorities have failed to provide necessary assistance to enable them cope with these changes. The study recommends that the ministry responsible for education, in collaboration with other education stakeholders—including the Tanzania Institute of Education (TIE)—should have a comprehensive plan that should reach out to as many teachers as possible on the ground to effectively cover crucial issues that are needed to bring positive change to student performance.

Keywords: *curriculum, curriculum changes, education, development programs, secondary schools in Tanzania*

<https://dx.doi.org/10.56279/NJIY8787/TJDS.v22i1.5>

1. Introduction

An effective curriculum is one of the critical components of education besides infrastructure and technology, policies and procedures and leadership. A proper and sound curriculum, therefore, is expected to align learners with the prevailing market needs on a global scale (Kandiko-Howson & Kingsbury, 2021; Hapsari & Widiastuty, 2023). Hence, teachers and other stakeholders are expected to adhere to curricula issued by the responsible authorities to ensure that learners get current and useful knowledge and skills (Law, 2022). Given the ever-changing technological environment and content knowledge, teachers and students must pick the motion of change and utilize diverse learning materials, otherwise it may hinder effective transition. It should be noted that any

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curriculum change may introduce different teaching and learning approaches, such as project-based approaches, integrated learning or competency-based learning. This can have a positive impact on students by providing a more active, engaged and relevant learning experience. Students can develop skills such as problem-solving, teamwork and decision-making through hands-on experiences in real-life situations (Pahrudin, 2019). However, with sound implementation strategies, it is curriculum change players (mostly teachers), who play a crucial role in fostering a healthy learning process, and also facilitating global competitiveness (Law, 2022).

Several prominent authors have argued that the need to improve teachers' professional development is fundamental to the success of any educational change as teachers are not innate (Desimone, 2009; Darling-Hammond et al., 2005; Desimone et al., 2002). Consequently, professional development is key to the success of any reform or initiative, provided that it is linked to ongoing learning of individuals and school improvement and related policy and program implementation, which present further evidence for this assertion. Teachers' professional development is considered to give teachers the tools they need to carry out reforms in the ways they are intended (Zahid et al., 2023).

In Tanzania, like most developing countries, curriculum changes have taken place at different levels of education since independence, and the implementation such changes has been in the hands of teachers and other education stakeholders, with the support of the government. According to Killion and Harrison (2017), teachers have played a vital role in establishing a setting that is supportive of learning by offering direction, fostering dialogues, and supplying information to learners according to the set curriculum to ensure that it is implemented.

A change in curriculum is an essential endeavour for an educational system. Tanzania, like many other countries, has passed through a complex process of curriculum changes that have resulted in different changes in the main teaching and learning process in schools from pre-school, primary school, secondary education and teacher education programs as summarized in the Table 1. All these curriculum changes from 1961–2023 have accumulated and targeted several issues that brought a lot of pressure to teachers and education stakeholders on how they should appropriately implement the curriculum.

In many developing countries, including Tanzania, teachers recognize the importance of curriculum changes for the functioning of the education system. In any education system, curriculum changes always lead to new expected standards that require improved and revised teaching strategies, which underscore the need for professional development programs. It is professional development programs that assist teachers to be able to implement new curriculum.

Table 1: Curriculum Changes in Tanzania Since Independence (1961 - 2023)

Curriculum Change Era, and Respective Year	Focus of Change	Key Changes
1. Post-Independence 1961-1967	Initial efforts were made to remove colonial influences and align the curriculum with national development goals.	Emphasis on African history, culture, and Swahili language. However, the structure largely remained similar to the colonial education system.
2. Education for Self-Reliance (ESR) 1967-1981	Introduction of the Education for Self-Reliance policy under former President Julius Nyerere. It was the first locally prepared curriculum. The main objective was to change the colonial education system which was racist, and the content did not reflect the Tanzanian culture by integrating African history.	Emphasis was on instilling practical skills, through agriculture, and cooperation to support rural and national development. Integration of vocational training and productive work within the school system. General science subject in secondary school was broken into individual subjects – Physics, Chemistry and Biology.
3. Structural Adjustment Programs (SAPs) and Education Reforms 1980–1999. In 1982, the Makwetta Commission issued a detailed report.	Economic challenges and Structural Adjustment Programs led to changes in education financing and policy. Musoma Resolution and Education for All (EFA). The report provided a proposal to improve the ongoing curriculum, and it was informed from the research findings of the study conducted in 1991/1992.	Introduction of cost-sharing in education, reduction of government funding, and involvement of private sector. Curriculum revisions to align with new economic realities and focus on cost efficiency. New combinations were introduced e.g. Business, vocational studies, agriculture, computer studies; Civics, Science and Mathematics were improved.
** Introduction of Education and Training Policy 1995	The policy of 1995 addressed issues of underdeveloped human resources. The government realized that the majority of the working populace had inadequate knowledge and skills to survive the scientifically and technologically growing economy.	The emphasis was made to provide the population with these skills hence, the 1995 National Science and Technology Policy was implemented alongside the 1996 Education Sector Development. Program and the 1999 National Higher Education Policy. The latter policies were devised to meet the particular needs of the sub-sectors of the ETP.
4. Education Sector Development Program (ESDP) 2000 – 2015	Comprehensive reform aimed at improving quality, access, and equity in education.	Implementation of Primary Education Development Program (PEDP) and Secondary Education Development Program (SEDP). Universalization of Primary Education and expansion of secondary education.

** Revised Education and Training Policy 2014	<p>It was more on a comprehensive policy to address contemporary educational challenges.</p> <p>The revised policy in education and training of 2014 made secondary education a part of compulsory and fee-free basic education beginning in 2016.</p>	<p>Introduction of new curricular frameworks to support quality education, ICT integration, and inclusive education.</p> <p>Emphasis was on pre-primary education, improved teacher training, and continuous professional development to improve the quality of education and training curriculum so that they <u>meet the needs for national Development.</u></p>
5. Competence-Based Curriculum (CBC) 2005-2023	<p>Shift from content-based to competence-based curriculum to enhance skills and practical knowledge.</p> <p>Different stages of CBC implementation were:</p> <p>i) Pre-school, primary and secondary education from I-IV (2003-2005).</p> <p>ii) Secondary school V-VI (2008).</p> <p>iii) Teacher Education at Certificate and Diploma Level (2006-2009).</p>	<p>Emphasis on student-centred learning, critical thinking, and practical skills. Continuous updates to align with global standards and technological advancements.</p> <p>Curriculum revisions to modernize content and pedagogy through technology. Introduction of language courses e.g. French, and Arabic. Introduced cross-cutting issues including environment, HIV AIDS, Reproductive Health, Gender and Vocational Skills.</p>
** Current revised Education and Training Policy of 2023 – Not officially approved.	<p>The new and revised education and training policy of 2023 has placed greater emphasis on developing skills that are relevant to the changing job market, such as critical thinking, problem-solving, communication and digital literacy (integrating the 21st Century Skills).</p>	<p>Curriculum content knowledge and pedagogy have changed, where vocational skills, technology and soft skills are integrated.</p> <p>Cross-cutting issues are also embedded including Climate Change, environment, gender and special needs.</p> <p>The structure of the education system now has a loop for the <u>vocational strand and academic strand.</u></p>
6. New Curriculum for 2023	<p>The curriculum adheres to the educational vision (2025), which aims to prepare an educated Tanzanian with knowledge, skills, and positive attitudes, by valuing equality, justice, and lifelong education for sustainable national and international development.</p>	<p>The emphasis of this curriculum has changed the duration of primary education to six years, secondary education is four years. These ten years are compulsory and categorized as basic education.</p> <p>The teaching and learning materials, and assessment approaches that will be used to develop the intended competencies to the learners have been specified.</p> <p>Moreover, the Curriculum states the professional and academic qualifications expected teachers.</p>

Source: Education and Training Policy (1995, 2014 and 2023). Mabadiliko na Maboresho ya Mitaala (1961-2010). Curriculum for Primary Education STD I-VI (2023), Ministry of Education, Science and Technology.

Despite the acknowledged fact that they are instrumental in implementing curriculum changes, teachers still face challenges such as having inadequate training, limited resources, and handling large class sizes: all of which hinder effective curriculum implementation (World Bank, 2018; UNESCO, 2014). These challenges can be traced way back to the late 1990s when it was realized that many teachers failed to achieve quality education due to un-supportive arrangements of professional development by the government—through the Ministry of Education—to prepare the teaching workforce (Mosha, 1995; Omari, 1995). On its part, the World Bank (2012) highlights that in Sub-Saharan Africa, including Tanzania, teacher quality is a significant determinant of student performance. In making sure that issues of teacher's professional development are considered by different countries, the Global Partnership for Education (2020) stressed that the best way to support teachers is through targeted policies and investments (a multifaceted approach) that improve teacher training programs by providing ongoing professional development, and ensuring that teachers have access to necessary resources and support systems.

The government of Tanzania, through the Ministry responsible for Education, integrated the issue of teacher professional development programs by linking training with all the major curriculum changes introduced by the Tanzania Institute of Education. Therefore, in 1995 the Ministry introduced an official education policy, known as the Education and Training Policy, that was revised in 2014 and 2023. Among other things, the policy acknowledges that training and retraining of teachers in Tanzanian schools is essential for improving the quality of education in the country.

Training and retraining of teachers was well stipulated by the Education and Training Policy of Tanzania (1995: 50) as follows:

Teacher professional development constitutes an important element for quality and efficiency in education. Teachers need to be exposed regularly to new methodologies and approaches to teaching consonants in an ever-changing environment. The teaching effectiveness of every serving teacher needs to be developed through planned and known schedules of in-service training programs. Therefore, in-service training and retraining shall be compulsory to ensure teacher quality and professionalism.

As a country, Tanzania has prepared proper plans for pre-service and in-service professional teacher development programs. These programs are embedded in teacher training colleges (TTCs) for pre-service training, and teacher resource centres (TRCs) to support in-service training. However, most of the plans are not implemented as stated in the master plan and the revised versions of the Education and Training Policy of the of 2014 and 2023. The experience in Tanzania in this regard seems like a culture of preparing good plans that are sometimes not fully implemented.

There are some success stories though, where in-service trainings were put into practice by various organizations. These include, for example, the Teacher Education Assistance for Mathematics and Science (TEAMS) project (1994–2004); the Science Education for Secondary Schools (SESS) project (1996–2003); and the Science Teachers Improvement Project (STIP) (1995–2003). Recently, the Ministry of Education, Science and Technology has approved new teacher professional development programs, including the Tanzania In-Service Teacher Training Program (TISTP), approved in 2021; and the National Teacher Professional Development Framework (NTPDF), which was approved in 2020. The NTPDF provides a comprehensive structure for continuing teacher training, aiming to standardize and improve the quality of in-service training across the country. It also targets enhanced focus on STEM education, digital literacy, and alignment with sustainable development goals. These programs have made it possible to conduct short- and long-term capacity building for teachers; and also seminars, workshops and improvement in STEM subjects across regions.

Most researchers are emphasizing the notion that curriculum changes and teacher professional development usually go hand in hand (Anderson, 2022). It is emphasized that professional development programs should be highly considered to make things happen in terms of adapting to curriculum changes, enhancing teaching skills, addressing student needs, improving student outcomes, building cooperation, and increasing morale and retention of teachers (Kennedy, 2016; Kurniati, 2017). This article, therefore, explores the effectiveness of professional development programs concerning several curriculum changes made in Tanzania, specifically determining the qualification, experience and training programs used in the professional development of teachers in secondary schools to adapt to such changes; and the effects of these programs on the ability of teachers to cope with curriculum changes.

2. Methodology

2.1 Study Design

This study employed a survey design to collect data from secondary school teachers in selected schools in the two regions. The design was used to effectively recognize the efficacy of professional development programs concerning several curriculum changes. Story and Tait (2019) argue that surveys provide evidence on practice, attitudes and knowledge on a particular phenomenon. The teachers were selected randomly; and included those who teach science, arts and social sciences subjects.

2.2 Instruments

The current study employed questionnaires that contained both closed- and open-ended questions. Apart from the questionnaire requiring the teachers to provide their demographic information—including age, gender and level of professional qualification—it also needed the teachers to describe their experiences and identify training programs utilized in secondary school teachers' professional development, and the impact these have had on their capacity to adapt to the changing curricula.

The open-ended questions enabled secondary school teachers to list the responses following the research under investigation based on the chronological sequence that they experienced. The school teachers supplied what they experienced in terms of professional development programs, sponsorship of professional development programs, as well as syllabus changes and professional development. Quinlan (2005) ascertains responding to an open-ended questionnaire causes respondents to prioritize listing items they are more familiar with, and to add more items to lists of topics they are more knowledgeable about. Hence, this method was deemed vital in understanding the content of secondary school teachers' responses.

2.3 Participants

A total of 300 questionnaires were administered to secondary school teachers in Dar es Salaam and Mtwara regions in Tanzania. In the Dar es Salaam region, 10 secondary schools were involved; whilst 5 secondary schools from Mtwara region participated in the study. The teachers were given a period of 28 days to read, understand and complete the questionnaire. Appropriate responses were obtained from a total of 272 teachers (this depicts 90.67% of the overall administered questionnaires). Also, the survey's respondents included 171 (62.87%) male teachers, and 101 (37.13%) female teachers. Professional qualifications of the selected teachers consisted of 70 (25.74%) having a bachelor's degree, 194 (71.32%) having a diploma, and 08 (02.94%) had a postgraduate qualification. Their age extended from 21–55 years. The majority were aged 31–40 years; whereas in the other categories 57 (20.8%) were of 21–30 years, 96 (35.5%) were aged 31–40 years, 81(29.8%) were aged 41–50 years, and 38 (13.9%) were aged over 50 years.

2.4 Ethical Considerations

In adhering to research ethics, a research clearance was obtained from the responsible authorities. Furthermore, secondary school teachers, as the research respondents, received an information sheet with a written consent form, which made it clear that their participation was completely voluntary, confidential and subject to withdrawal at any time. Out of 300 administered questionnaires, 272 were fully completed and returned. Additionally, the researcher's contacts were provided to the respondent teachers to enable them communication with the researcher in case one had any concern about the research. The questionnaire was provided to teachers with enough time to complete it at their working places, residences, or any location that suited their needs; which influenced the high rate of response (90.67%).

2.5 Data Analysis

To analyse the survey data, frequency count, percentages and correlation analysis were determined through the use of the Statistical Package for Social Sciences (SPSS) software program. Frequency count and percentages were used to determine the teaching subjects, experiences of teachers in years, professional qualification, professional development programs, as well as the sponsorship of professional development programs. Moreover, correlation analysis was used to

determine the relationship between teachers' capacity to adapt to curriculum changes, and the re-orientation programs provided by the appropriate authorities to enable effective adaptation.

3. Results

This study aimed to explore the effectiveness of professional development programs concerning several curriculum changes made in the curriculum of Tanzanian secondary schools, specifically determining the qualification, experience and training programs used in the professional development of teachers in secondary schools, and the effects of these on the ability of teachers to cope with the curriculum changes. Therefore, this section presents the results of the study through tables which depict the frequencies, percentages and correlations to determine the teaching subjects, experience and qualification of the teachers, as well as the teachers' teaching experience in secondary school, and the number of changes in the syllabus. It further provides the responses of secondary school teachers towards syllabus changes and professional development, the types of professional development programs attended by the school teachers, the sponsorships of the professional development programs, as well as the suggested additional professional development programs by the secondary school teachers.

3.1 Teaching Subjects, Experience and Qualification of Teachers

This study found that the majority (188 (69.12%)) of the secondary school teachers teach science subjects, 60 (22.06%) teach arts subjects, whilst 24 (8.82%) teach social science subjects, as indicated in Table 2. This implies that the majority of secondary school teachers teach science subjects, while social science subjects have a smaller number of teachers. Also, the results in Table 2 show that the majority of secondary school teachers (182 (66.91%)) have a working experience of between 1 and 10 years. This implies that regardless of having good experience in the field of teaching, the teachers still need professional development programs to adapt to the changes in education curriculum, which is dynamic with new approaches and tools emerging all the time.

Table 2: Teaching Subjects, Experience and Qualification of Teachers

Teaching Subjects	Experience in Years		Qualification	
	Freq.	%	Freq.	%
Science	188	69.12	1 st Degree	70 25.74
Arts	60	22.06	Diploma	194 71.32
Social Science	24	8.82	Postgraduate qualification	08 02.94
			Total	272 100%
Total	272	100%		

Regarding professional qualification, Table 2 shows that the majority of secondary school teachers are diploma holders (194 (71.32%)), 70 (25.74%) are bachelor degree holders, while 08 (02.94%) possess a postgraduate qualification. The results

show that 71.32% are not university graduates. This implies that there is a need to provide teachers with professional growth opportunities to equip them with pedagogical abilities and enable them be abreast of contemporary developments in the field of education. Also, the teachers need to obtain advanced qualifications/certifications, as it was corroborated by most of the respondents in this study.

3.2 Changes in Syllabuses Witnessed by Secondary School Teachers vis-à-vis Their Teaching Experience

This study also presents the results of the analysis of the number of changes of syllabuses of subjects witnessed by the secondary school teachers vis-à-vis the experience of the teachers. It was found that experienced teachers have witnessed more changes as indicated in Table 3. For instance, those who have taught for over 10 years have experienced at least an average of 2 changes; while those with over 20 years in the profession have experienced about an average of 3 changes in the curriculum. Nevertheless, the results show that arts subjects have experienced more frequent changes than science subjects. It should, however, be noted that changes in syllabus affect all categories of teachers irrespective of their experience, qualification or teaching subject.

Table 3: Teaching Experience and the Number of Changes in the Syllabus

Teaching Subjects	Years of Experience and the Number of Changes in the Syllabus			Total (Frequency and No. of changes)
	11- 15	16- 20	>20	
Science	28 (2.0)*	14 (2.28)*	12 (2.83)*	54 (2.26)*
Arts	10 (1.2)*	08 (3.75)*	08 (3.25)*	26 (2.62)*
Social science	02 (02)*	00 (00)*	08 (2.25)*	10 (2.2)*
Total	40 (1.75)*	22 (2.82)*	28 (2.79)*	90 (2.35)*

Note: *Average number of changes in the syllabus

3.3 Response to Syllabus Changes and Professional Development

In light of the changes being introduced into the syllabuses from time to time, it is important to assess the ability of teachers to cope with the situation, as well as the efforts of the relevant authorities or administrators to assist teachers in this regard. The results are as shown in Table 4. It is clear from the results that the majority of secondary school teachers found it difficult to cope with these changes, while the relevant authorities have not been very helpful in assisting teachers to adapt. The assistance of secondary school teachers in this respect is very important given the low professional qualifications that most of them possess. Hence, the teacher respondents stressed the importance of professional development to assist them in carrying their duties effectively in their professional career, especially in the face of curriculum changes.

Table 4: Response to Syllabus Changes and Professional Development

Response	Rating (X)					Total Frequency	$\sum fx$	X	Decision
	A (5)	B (4)	C (3)	D (2)	E (1)				
Coping with the changes in the syllabus	04	26	116	42	18	206	574	2.79	Slightly difficult
Assistance given by the administration	22	48	78	64	22	234	686	2.93	Moderately helpful
Importance of professional development	214	32	04	00	06	256	1216	4.75	Very necessary

3.4 Correlation Between the Re-orientation Programs and the Ability of Teachers to Cope With the Changes in Curricula

Additionally, the current study revealed that the correlation coefficient (r) value between the level of assistance (or re-orientation programs) and teachers' ability to cope with the changes in curricula is 0.64, which indicates a positive association between both variables as indicated in Table 5. The P value is <0.01 , which means that the relationship is statistically significant. Therefore, an increase in the level of assistance (or re-orientation programs) by the relevant authorities increases the teachers' levels of abilities to cope with the changes in curricula.

Table 5: Correlation Between Re-Orientation Programs and the Ability of Teachers to Cope With the Changes in Curricula

	Re-orientation programs	Teachers' ability to cope with changes in curricula
Re-orientation programs	1	0.64**
Teachers' ability to cope with the changes in curricula	0.64**	1

3.5 Professional Development Attended by Teachers

Furthermore, the current study outlines the respondents' participation and attendance in professional development programs. Secondary school teachers were asked about the professional development programs that they had attended. The results in Table 6 show that at least 52 (19.11%) attended seminars, 32 (11.77%) attended workshops, 04 (1.47%) attended conferences, 04 (1.47%) attended study tours as professional development programs; while 76(27.94%) did not attend any of the professional programs. These results imply that a high percentage of secondary school teachers have not had the opportunity to attend professional development programs. As a result, such teachers might not have received enough training to implement new changed curricula, which could result in inconsistent instruction during teaching. In this regard, curriculum changes may encounter resistance from educators who do not participate in professional development programs.

Table 6: Types of Professional Development Attended by Respondents

Type	Number of Respondents	% of Total
Seminar	52	19.11
Workshop	32	11.77
Conference	04	1.47
Study tour	04	1.47
Any 2 of the above	80	29.41
Any 3 of the above	20	7.35
All of the above	04	1.47

3.6 Sponsorships of Professional Development Programs

This study also determined the respondents' responses on the sponsorships of professional development programs. The results show that the majority of secondary school teachers (72 (26.47%)) were sponsored by the initiatives of their own schools as depicted in Table 7. A situation in which the government initiates changes in the syllabus without organizing professional development programs for teachers to cope with the changes does not augur well for the education system, especially given the low levels of qualifications of most teachers as shown in this study. Furthermore, the results show that some of the secondary teachers (4 (1.47%)) self-sponsored themselves to attend professional development programs. While the government, through the MOEVT, also assisted in sponsorships (56 (20.59%)); and so did NGOs (36 (13.24%)), these were deemed insufficient to cover the required needs. As a result, secondary school teachers lack exposure to new developments in curriculum changes, educational technology and teaching methodologies due to limited sponsorship of professional development programs.

Table 7: Sponsorships of Professional Development Programs

Sponsor	Frequency	% of Total
School	72	26.47
MOEVT	56	20.59
NGOs	36	13.24
Self	04	1.47
Shared cost (involving teacher)	02	0.74
Shared cost (not involving teacher)	14	5.14

3.7 Professional Development Programs Suggested by Teachers

Moreover, the current study determined the types of professional development programs being demanded by secondary school teachers to enable them cope with curriculum changes. Table 8 shows that most (104 (38.23%)) would prefer short courses, seminars and workshops. On the other hand, some of the teachers (14 (5.15%)) said they needed computer programs and graduate programs to adapt to curriculum changes. The organization of these programs should be done regularly by the Ministry responsible for Education, in collaboration with other

ministries, including the Ministry for Regional Administration and Local Government; hence, they should be seen as a policy priority to improve the quality of teachers who will provide effective teaching in schools.

Table 8: Professional Development Programs

Professional Development Programs	Respondents	% of Respondents
Short courses	46	16.91
Seminars	20	07.35
Workshops	38	13.97
2 and 3 above	52	19.12
Study tours	04	01.47
All above	62	22.79
Computer programs	04	1.47
Graduate programs	10	3.68
No response	36	13.24
Total	272	100.00%

4. Discussion

This study aimed to provide insights regarding the effectiveness of professional development programs concerning several curriculum changes made in Tanzania's secondary schools syllabi. The findings in Table 2 show that the majority of secondary school teachers do not have as much acquaintance with advanced pedagogical techniques and teaching methods. This might make it more difficult for them to implement and adjust to curriculum changes. The findings align with the findings of Mosha (2000) and Jidamva (2012): that most secondary school teachers are untrained, and most are diploma holders. This situation necessitates the need for professional development programs as it has been acknowledged that professional development is crucial as it advances teachers' careers, academic standings, and technical proficiencies (Komba & Nkumbi, 2008).

Secondary school teachers with diploma professional qualifications might not have as many opportunities for professional growth as those at higher qualification levels. A deficiency of continuing professional development and training may make it more difficult for them to be current with changes in curricula and educational innovations. The current study determined that it is important for teachers to get professional training programs to enable them tie in with changes taking place in the curricula. This finding is in line with that of Ahmed et al., (2021), who opined that teachers need opportunities for training because it helps in upgrading their knowledge and pedagogical skills, especially in difficult areas or topics. This is because a good teacher knowledge is a prerequisite for the most effective teaching.

Another distinct finding in this study was that experienced teachers have witnessed more changes in curriculum as depicted in Table 3. It is generally understood that

education systems are frequently updated to meet the demands of a changing society and emerging new technologies, hence the need for more experienced school teachers to observe and match with the changes. This finding echoes those of Kesküla et al. (2012), who found that teachers get good experiences of new curricula within a particular period; and the more they stay in their working career, the more they gain this experience. Furthermore, the present study found that experienced teachers can use a variety of strategies to ensure that teaching and learning happen. This is similar to what was revealed by Priestley (2011), who asserts that, to some extent, experienced teachers can address topics that are prevalent in many of the present curriculum reform initiatives.

Furthermore, this study established that the majority of secondary school teachers found it difficult to cope with curriculum changes since the relevant authorities have not been very helpful in assisting them cope with the changes. It was revealed that there are instances when secondary school teachers lack the opportunities for professional development training to implement curricular changes; making them feel unprepared to adapt new materials in a curriculum. Even though some may oppose curriculum changes because they are accustomed to a previous curriculum, fear the unknown, or have doubts about the efficacy of the new approach, the lack of professional development training in the face of curricular changes may worsen the situation. This is similar to McCormick et al.'s (2006) study on teaching self-efficacy, stress and coping in a major curriculum reform, which found that teachers encounter challenges in the implementation of a new curriculum once they fail to adhere to problem-focused coping, by coping by doing less, as well as coping by distraction.

Additionally, the findings of this study show that there was a positive association between the level of assistance (or re-orientation programs) and teachers' ability to cope with changes in curricula. This implies that an increase in the level of assistance (or re-orientation programs) by the relevant authorities increases the level of teachers' abilities to cope with changes in curricula. The current study established that re-orientation programs provide opportunities for secondary school teachers to learn about new pedagogies, evaluation strategies and content updates that are in line with updated curricula. A similar finding was uncovered by Jabaar and Musa (2019), who found that for an effective plan of having updated teachers, re-orientation programs should be made available to enable them get teaching methods and techniques for the acquisition, development and inculcation of proper value-orientation to learners. Also, the study's discovery is in line with that of Lovren (2019), who uncovered that re-orientation programs enhance reconsidering and modifying instructional techniques, while promoting the development of skills necessary for people to live and behave sustainably. This applies to secondary school teachers who need to be updated to match constant changes in education curricula.

In terms of secondary school teachers' participation in professional development programs, this study found that a substantial portion of secondary school teachers have not had the chance to attend any professional development program. This

finding lends credence to the submission of Ishumi (1998), who reported that his assessment of in-service training opportunities for serving teachers reveals an extreme shortage of such opportunities. He found that, overall, only 6.4% of the total teaching force in government schools had an in-service training opportunity between 1993 and 1998; while in non-government schools only 10.3% have had such an opportunity (ibid.).

Furthermore, this study found that most secondary school teachers would prefer attending short courses, seminars and workshops as part of professional development programs, whilst some needed computer programs and graduate programs as part of professional development to adopt with curriculum changes. All the required professional development programs are vital because teachers who participate in them receive updated teaching techniques that are adapted to new curriculum standards. This enables them to modify their teaching strategies to better engage students and accomplish learning objectives. Hence, teachers need to participate in constant professional training programs to upgrade their pedagogical skills. The finding is in line with that of the World Bank (1995), which indicated that the key ingredients of good teachers are their knowledge of the subject matter, and their pedagogical skills: both of which are promoted through improved professional development programmes to keep them abreast of developments in their fields. This study finding resonates with that of Hixson and Tinzmann (1990), who submitted that there is a need for programs providing continuing certification as an 'opportunity' for staff to make sure that their knowledge and skills remain 'state-of-art'. The current study shows that the implementation of professional development training programs enhances pedagogical skills that promote quality output. Kiwira (1999), Haßler et al. (2021), and Kinyota et al. (2019) had similar results: that professional development reduces waste, increases output, improves quality output, and is a basis for helping employees adjust to new working conditions.

5. Conclusions and Recommendations

The education system in Tanzania has been changing from time to time in response to global political, economic and technological changes. On several occasions, several new curricula have been introduced into schools with policy that focuses on the teaching of languages, science and technology, humanities, and life skills. Thus, the orientation of teachers and teacher educators to new curricula changes is imperative. It can be seen from this study that coping with these changes is not easy for most teachers due to the absence of regular professional development programs, regardless of their educational background. The fact that most of them are diploma holders, and only a few are degree holders, makes the provision of professional development programs even more imperative. It is therefore important for schools and the Ministry responsible for Education to help teachers in professional development. According to the training policy of Tanzania (1995), teachers need to undergo professional development, but the study findings reveal that only a few teachers have been able to attend such

programs; and that these are mostly seminars and workshops organized by the schools themselves, the MoEST and NGOs. For the regular changes introduced into the school curricula to produce the much-desired results, the professional development of teachers must be given the required attention.

In the same domain, despite the common methods of professional development programmes that are run, the study recommends the approach of school-based communities of learning, which is a simpler and cheaper way to improve challenges teachers face in terms of knowledge exchange, skills development, and the sharing of information. School-based communities of learning do play a vital role in arranging workshops, seminars and training sessions centred on particular subjects. Secondary school teachers who receive this focused professional development can acquire the knowledge and abilities necessary to effectively manage changes in curricula, and later enable them to work accordingly in teaching and learning. School-based community of learning can also provide opportunities to exchange knowledge, materials and practical tips for successfully implementing new curricula.

Furthermore, this article recommends that secondary school administrators, education stakeholders and other authorities should think of using Teacher Continuous Professional Development (TCPD) as a new model of professional development to provide room for communities to learn and support each other towards changes that happen in curricula. The model may help teachers have access to resources, support, and continuous training so that they can be able to adjust to curricula changes. Amongst the activities that may be conducted by the TCPD include workshops, seminars and training sessions created especially to acquaint secondary school teachers with curricular changes.

Statements and Declarations

Consent for Publication:

The author has approved the manuscript for publication.

Competing Interests:

The author declares no competing interest, whether financial or non-financial.

Funding:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data Availability

Data will be made available on request.

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Curriculum Changes and Professional Development in Tanzanian Schools

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