



Teacher Professionalism Development in TVET System: Preparedness, In-Service Trainings and Challenges

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ABSTRACT

Purpose of the study: This study aims to analyze the professionalism of Technical and Vocational Education and Training (TVET) teachers in Rwanda and provide evidence-based recommendations for improvement.

Methodology: Utilizing qualitative methods, this study employed document analysis and semi-structured interviews to gather data. The analysis was conducted using UNESCO's Global Framework of Professional Teaching Standards, offering a comprehensive examination of TVET teachers' professionalism through detailed reviews and insightful interviews.

Main Findings: The study revealed that only 31.1% of TVET teachers received adequate training during the 2021/22 academic year. This disparity is attributed to delayed deployment, inefficiencies in human resource development, a shortage of private higher learning institutions, static salary payment systems, and limited collaboration.

Novelty/Originality of this study: This research stands out due to its thorough assessment of the professionalism of Rwandan TVET teachers in line with the Global Framework. It highlights existing challenges and proposes evidence-based solutions to enhance their preparation, in-service training, and effectiveness in today's dynamic educational environment.

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1. INTRODUCTION

The quality of a nation's citizenry determines its level of development. The result of its educational system is its outstanding citizenry. It is well known that TVET institutions' capacity to produce competent and skilled labour is significantly impacted by the caliber of its teachers and trainers. The quality of the relationships and interactions that take place between teachers and students also has a significant impact on how effective an educational system is [1]. A key component in the creation of an inclusive educational system is the teacher. Regardless of level, the best teachers are those who have strong intellectual and emotional identities and who are passionate about their subject(s) and students. They are distinct from one another due to their proficiency in both pedagogical and topic understanding.

A key element in achieving high-quality education is the professionalism of educators, which is closely linked to student success in the classroom, especially in the areas of academics, extracurricular activities, and personality. To characterise a workplace behaviour incident as "professional" is typically to consider it to have been carried out to the greatest moral and technical standards. Concepts of profession or professionalism have typically implied or been connected with enhanced occupational standards [2].

As per the findings of researchers [3], teachers have a pivotal role in effecting change and guaranteeing that all students obtain an excellent education. As a result, through organising, creating, and carrying out the scheduled activities, principals and instructors serve as two essential components that collaborate to accomplish the school's goal and vision. Teacher competencies are linked to how successfully educators do their duties [4].

A teacher is considered to have innovated when they fulfil their responsibilities in the amount, quality, and time allotted. The following elements affect teacher performance: institutional aspects include duties and functional roles, working climate, leadership styles, career routes, compensation or reward, and colleagues; individual factors include willingness, interest, motivation, qualities, and individual perceptions. The definition of teacher professionalism includes how educators approach their work, why they behave professionally, and how they use their professional skills and expertise. Rwanda is committed to being a knowledge-based economy with remarkable socio-economic transformation leading to a middle-income country by 2035. The Rwandan government views education as the key to realising this goal, and it has implemented competence-based education as a viable means of providing high-quality education that generates a workforce that is both sufficient and highly skilled [5].

The government has made great efforts to improve the educational system, but there is still a big problem as demands on teachers have increased, impacting the recruitment of talented candidates. Increasingly, the pressures, risks, and difficulties of teaching outweigh the interests and inclinations of those who wish to teach [6]. A significant number of teachers lack the necessary training, qualifications, or both. This is particularly problematic in the TVET sector, where the lack of preparation before entering the teaching profession, inadequate in-service training, and unsatisfactory working conditions contribute to a high turnover of teachers, it is clear that teachers lack professional qualifications and dedication to their job [5]. To make matters worse, a lot of teachers see teaching as a stopgap before moving on to higher-paying jobs. According to [3][4], there is a high yearly teacher turnover rate of 20%, which supports this. Nearly half of teachers in several nations quit their jobs within the first five years of employment [7]-[8]. The quality of education and the professionalism of teachers are both impacted when educational institutions produce instructors who leave the profession because there is a discrepancy between the financial resources used and the professional output the teacher produces for the school, the institution, and the teaching community.

This study has been conducted with the objective of analysing the professionalism status in TVET teaching in terms of the way teachers are prepared before they enter the teaching profession and the in-service training they receive during their careers. This analysis is conducted to refer to international standards recommended by UNESCO and challenges met to achieve desirable professionalism standards. Finally, recommendations are made regarding the course of action to be taken.

This study on the development of teacher professionalism in the Rwandan TVET system seeks to achieve the following three research objectives: to identify the strategies employed through TVET certification courses to enhance teachers' professionalism in alignment with international standards. Furthermore, to examine the obstacles hindering the development of teachers' professionalism and to propose recommendations for action by various education stakeholders.

The following research questions are addressed: 1). To what extent do TVET certification courses align with the Global Framework of Professional Teaching Standards?; 2). What are the impediments to the advancement of TVET teachers' professional fulfilment in accordance with the Global Framework of Professional Teaching Standards?; 3). What recommendations can be made to enhance TVET teachers' professionalism?

2. RESEARCH METHOD

This study employed a qualitative approach, which allows researchers to investigate the observations of individuals in a specific place and across the globe. Qualitative research is a method for investigating and comprehending the meaning of people or groups that believe in a social or human issue [9]. The case study approach was adopted, and semi-structured interviews and purposeful sampling were used to select 20 teachers who taught in TVET, had at least three years of experience, and had attended at least one TVET certification course. Furthermore, the "Global Framework of Professional Teaching Standards [8]" and "Five Principles for Improving Teacher Professionalism" were employed as analytical tools in the document analysis phase, assisting in the examination of the professionalism of teachers in Rwanda. Additionally, a substantial body of literature was subjected to a comprehensive review. These standards developed by UNESCO are intended to be adopted by governments and teacher groups in a variety of national contexts. The complete set of standards, including the guiding concepts for the advancement of teachers' professionalism, are to be embraced.

*Box one: Domains of Teacher Professionalism [8]***I. Teaching Knowledge and Understanding**

It should go without saying that to teach a subject or learning area effectively, teachers must possess the necessary knowledge, abilities, and comprehension in that subject or learning area. Skilled educators possess a thorough understanding of their subjects, instructional strategies, and pupils. Teachers are also aware of the developmental, cultural, and societal concerns that may be connected to their pupils' learning. To help the students reach their appropriate levels of understanding, teaching will always require a deep enough knowledge, skill set, and comprehension of the subject matter, the students in the class, and contextual issues. Specific learning content will vary significantly among countries. This should not be taken to mean that passing along knowledge from a teacher to a student is all that teaching is about. The complex and varied circumstances in which students learn shape the processes and linkages that lead to the development of meaning and knowledge. As such, there's a big real-term overlap with this Framework's other important fields.

II. Teaching Practice

The Standards in this domain provide an outline of the fundamental components of instructors' direct student participation. Effective teaching is determined in this domain, where the practices that most precisely define teaching may be defined. Though they can take many different forms, teaching activities always reflect the teacher's understanding of and intention for the welfare, education, and growth of their pupils. Within this domain, effective teaching methods and practices depend on different Teaching Relations in addition to the Knowledge and Understanding Domain.

III. Teaching Relations

Relationships are the fundamental building block of teaching. Effective teaching requires not only interacting with students but also maintaining professional connections with colleagues, parents, carers, and education authorities. The general public's perception of teachers and the teaching profession as a whole greatly depend on their relationships with them.

The [10] offers five recommendations to raise teacher professionalism that are based on studies on academic performance and best practices in high-achieving countries like Finland, Singapore, and Shanghai (China). The section that follows provides a more thorough explanation of these. These guiding principles will function as a foundation for talking about possible solutions to improve teacher professionalism.

Box two: Five principles for improving teacher professionalism [16]

PRINCIPLE 1: Make teaching an attractive profession by improving its status, compensation policies and career progression structures.

PRINCIPLE 2: Ensure pre-service education includes a strong practicum component to ensure teachers are well-equipped to transition and perform effectively in the classroom.

PRINCIPLE 3: Promote meritocratic selection of teachers, followed by a probationary period, to improve the quality of the teaching force.

PRINCIPLE 4: Provide continuous support and motivation, in the form of high-quality in-service training and strong school leadership, to allow teachers to continually improve.

PRINCIPLE 5: Use technology wisely to enhance the ability of teachers to reach every student, factoring their areas of strength and development.

3. RESULTS AND DISCUSSION

This chapter presents the results derived from the data analysis. The researcher has presented these findings in alignment with the study's objectives. The primary aim of this study was to investigate the status of teachers' professional development in Rwanda's TVET system. Whereby the analysis focused on their preparedness, in-service training, and existing challenges.

3.1 Preparedness of Teachers in TVET teaching profession

TVET system is essential in educating people for particular vocations through an emphasis on transferable skills. Central to the success of this system are teaching professionals, individuals well-versed in trades, professions, and technical fields. Preparedness for teaching, denoting the confidence and capabilities of pre-service teachers, is integral to their professionalization. The initial years of teaching often witness a significant number of educators grappling with feelings of unpreparedness and inadequate support, leading to potential distress, diminished job satisfaction, and a propensity to leave the profession [11]-[12].

According to [13]-[14], novice teachers have to deal with applying theoretical knowledge to the realities of their classrooms, juggling multiple tasks at once, including instruction, creating a conducive learning environment, guaranteeing quality learning experiences, managing classroom discipline, and working with

colleagues and school principals. To successfully move from student to professional, this gap must be closed and theoretical knowledge must be brought into line with efficient teaching techniques.

A detailed breakdown of qualified and trained teachers' status within the past 5 years is provided in the following table 1.

Indicator/Year	2017	2018	2019	2020/21	2021/22
Qualified teaching staff	2450	1959	2741	3281	3190
Trained teaching staff	1313	1085	1283	1243	1291
% of Qualified teaching staff	58.9%	52.4%	72.3%	78.6%	76.8%
% of trained teaching staff	31.6%	29%	33.8%	29.8%	31.1%
Unqualified teaching staff	1711	1782	1051	894	961
Untrained teaching staff	2848	2656	2509	2932	2860
% of unqualified teaching staff	41.1%	47.6%	27.7%	21.4%	23.2%
% of untrained teaching staff	68.4%	71%	66.2%	70.2%	68.9%

The proportion of qualified teaching staff has shown a consistent upward trajectory, reaching 76.8% in the academic year 2021/22. Although the percentage of unqualified teaching staff has significantly reduced from 41.1% in 2017 to 23.2% in 2021/22, the existence of 23.2% unqualified teachers underscores a retrogressive aspect in the professionalism of teaching, potentially impeding the overall quality of TVET education. In the realm of teacher training, the situation is particularly dire. Only 31.1% of teachers in the TVET system have received formal training, leaving a substantial 68.9% untrained. Compounding this issue is the fact that these untrained teachers predominantly originate from institutions with a focus on technical fields, lacking specific training in pedagogy.

This complex scenario underscores the critical state of teacher professionalism within the Rwandan TVET system. The prevalence of unqualified and untrained teachers not only hampers the quality of education but also poses a significant challenge to the ultimate success of TVET graduates.

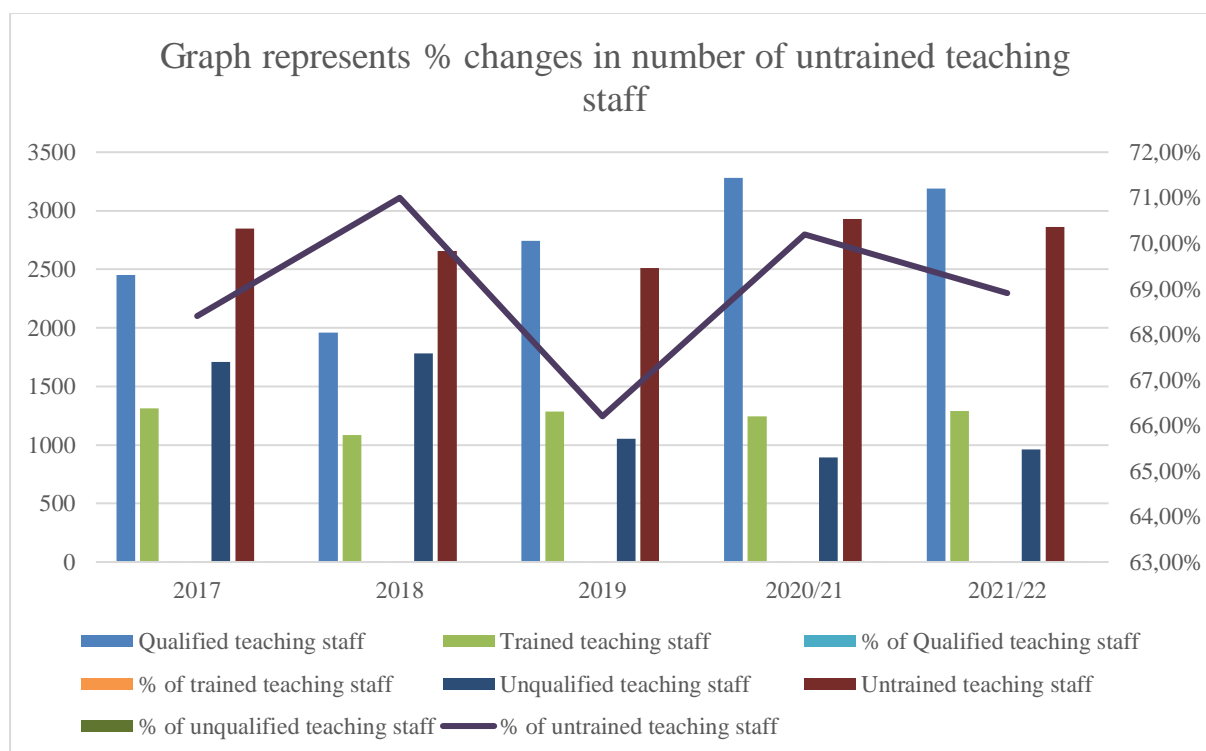


Figure 1. Graph represents % changes in number of untrained teaching staff

The provided information highlights a dual challenge within the TVET education system. On one hand, there is a positive trend in the increasing percentage of qualified teaching staff, reaching 76.8% in 2021/22, as result of commendable efforts to enhance the overall qualifications of teaching staff. On the other hand, the challenge of securing trained teachers has persisted prominently since 2017, with the percentage of untrained teachers remaining consistently high. In 2017, the number of untrained teachers stood at 68.4%, fluctuating between a low of 66.2% in 2019 and a high of 71% in 2018, with the data for 2020/21 indicating a figure of

70.2%. These statistics underscore the gravity of the issue of insufficient training within the TVET sector in Rwanda. The limited availability of trained candidates and competition from other job opportunities contribute to a shortfall in the percentage of trained teachers, which stands at 31.1% with the most recent data in 2021/22.

With regard to the manner in which TVET teachers are recruited and placed into the teaching profession, interviewed teachers hold the following view on the matter.

In the Rwandan TVET system, a considerable number of teachers are sourced from individuals holding undergraduate and Advanced Diploma degrees obtained from universities and Rwanda Polytechnic/Integrated Polytechnic Region Colleges. These teachers have typically pursued technical courses, and as a consequence, they are enlisted to teach in the TVET sector without possessing adequate pedagogical knowledge and skills. It is notable that the mission of these teachers is not primarily focused on training teachers, which may result in them meeting the qualification requirements for teaching but lacking the fundamental knowledge and skills in pedagogy. This is evidenced by respondents T2, T4, T10, T15, T17 and T20.

Following the UNESCO professional standards expected of teachers, it is evident that many teachers are recruited and enter the teaching profession without the essential knowledge and skills in areas such as understanding learners, curriculum design, effective teaching, and learning methodologies, instructional planning, assessment and evaluation practices, as well as involving parents, stakeholders, and providing career guidance and counseling all of which are crucial competencies for effective teaching. The situation described above indicates that the absence of these foundational knowledge and skills among teachers has consequences. Students experience the impact of insufficient teacher preparation, making it challenging to recover from the resulting deficits.

3.2 In Service Trainings for Teacher Professional Development

TVET teachers must learn new subject matter and/or disciplinary expertise in addition to improving their current knowledge, skills, and pedagogy [7]. The rapidly evolving industry, as well as the objectives for sustainable development and green economies, have played a major role in creating this dilemma. Many traditional jobs are becoming obsolete in today's world, as new sectors take the place of the outdated ones. Vocational education bears the primary responsibility for developing the future workforce by ensuring that education and training programs are in line with sustainable development goals.

There is an urgent need for systematic and ongoing professional development to assist TVET teachers in meeting these issues. A teacher who has completed professional development or training to advance their teaching abilities is considered trained. Reputable educational institutions offer pre-service and in-service programs that provide this instruction. Teachers who have completed additional training to advance their craft or pick up new teaching methods are considered qualified teachers because they have met the necessary educational requirements to teach. As stated by [15], "Didactic and pedagogical curriculum changes could not be avoided and have been particular challenges for teachers" [15], in-service training is a crucial component of teacher performance in addition to certification.

Teachers in Rwanda stated that they needed CPD to help them deal with top-down changes including the policy shift on the language of instruction, TVET reform, and labour market changes [16]. A variety of in-service training initiatives have been put in place to improve TVET teachers' caliber. Many of these training sessions have been held to provide educators with the tools they need to better assist students enrolled in technical and vocational courses. However, the challenges of determining the optimal quantity and real-time provision of training remain areas yet to be successfully addressed.

In-service trainings provided to TVET teachers are categorized into four main types, each designed to address specific aspects of their professional development.

3.2.1. TVET Trainer Certificate Course

Introduction to TVET Trainer Certificate Course

The TVET Trainer Certificate Course is a pedagogic training program meticulously designed to enhance the teaching pedagogy knowledge and skills of TVET trainers in educational settings. The course encompasses 15 key competencies, including proficiency in English communication to support the learning process, application of ICT skills, Demonstration of the TVET trainer's role in the TVET system, and the facilitation of inclusive training. Other competencies include engagement in Continuous Professional Development (CPD), support for career guidance in TVET vocational areas, collaboration with the labor market in Competency-Based Training/Assessment (CBT/CBA), and the promotion of an entrepreneurial culture, Reflection on the learning process, Engage in industry-based training, Plan CBT/A sessions, Facilitate competence-based learning process, and Facilitate CBA. The overarching goal of this training is to elevate the quality of TVET delivery by fostering learner-centered, innovative, and inclusive Competency-Based Training/Assessment (CBT/A) methodologies within TVET programs or trades [4].

Challenges in implementation

Unfortunately, teachers who have been in the teaching profession for a long time frequently receive this in-service training. This poses a challenge, as the content is particularly beneficial for beginners entering the teaching profession in TVET. Many individuals embark on a career in TVET without acquiring fundamental pedagogic knowledge and skills essential for effective teaching in this specialized system. Moreover, the number of trained teachers remains disproportionately low compared to the overall demand. There is an urgent need to close the gap and make sure that more instructors obtain this crucial training because the course is fundamental and critical to the professional growth of TVET teachers.

3.2.2. Senior TVET Trainer Certificate Course

Introduction to the Senior TVET Trainer Certificate Course

The Senior TVET Trainer Certificate Course represents an advanced pedagogic training program tailored for the facilitation of sophisticated TVET programs or trades demanding the application of advanced techniques, technologies, and practical skills. This comprehensive training focuses on nurturing expertise in nine key competencies, including utilizing advanced communication in English as a medium of TVET, incorporating ICT in TVET, contributing to Competency-Based Curriculum (CBC) development, applying career guidance practices, enhancing Continuous Professional Development (CPD) through Individual Action Plans (IAP), engaging in research and development, planning Competency-Based Training (CBT) for practical sessions, applying CBT in practical sessions, and conducting Competency-Based Assessment (CBA) [4].

The Senior TVET Trainer Certificate Course serves as a natural complement to the foundational TVET Trainer Course. It allows certified trainers from the initial course to further expand their knowledge and skills in TVET teaching, building upon the experience gained in their professional endeavors. This advanced training is particularly valuable for in-service teachers, leveraging their existing expertise and aligning it with contemporary advancements in TVET pedagogy.

Challenges in implementation

While the importance of providing this advanced training to experienced teachers is evident, challenges are hindering its widespread implementation. Notably, only 21 teachers were certified up to 2022, underscoring the limitations imposed by time and financial constraints required for its provision. Overcoming these barriers is crucial to ensuring that a larger cohort of teachers benefit from this advanced program, contributing to the continual enhancement of TVET teaching quality and relevance.

3.2.3 Master TVET trainer course

Introduction to Master TVET Trainer course

The Master TVET Trainer Training stands as the pinnacle of excellence within the TVET training landscape in Rwanda. This advanced program is specifically crafted to empower teachers who have completed the foundational TVET Trainer and Senior TVET Trainer courses with the specialized skills necessary for guiding and facilitating the training of TVET trainers (ToT). Beyond reinforcing the competencies gained in the preceding courses, the Master TVET Trainer Training introduces an advanced skill set critical for navigating the complex demands of TVET instruction. These competencies include the application of ICT in ToT, the integration of educational psychology principles, active engagement in research and innovation, effective planning and implementation of ToT sessions, sustaining the impact of ToT, and the strategic integration of a dynamic workplace learning environment [4].

Challenges in implementation

As of now, the Master TVET Trainer Training has not been rolled out extensively to TVET teachers in Rwanda. The initial focus has been on implementing the first two foundational training programs to ensure the development of a robust cadre of highly competent teachers capable of delivering effective instruction in TVET schools.

3.2.4 Technical competence training

Introduction to Technical Competence Training

Technical Competence Training is a targeted program designed to enhance the quality of Technical and Vocational Education and Training (TVET) delivery. The primary goal is to elevate technical, practical, and technological competencies in specific fields. Presently, this training is offered through partnerships involving the Rwanda TVET Board, TVET schools, and various companies or Non-Governmental Organizations (NGOs) interested in contributing to capacity building within the TVET system. In contrast, the previous 3 training programs are administered by the Rwanda TVET Trainer Institute (RTTI).

Challenges hindering the progress

The importance of Technical Competence Training, and its development has faced certain challenges. The current pace of industrialization in Rwanda, still in the developmental stages, has impacted the progress of this training initiative. Additionally, there is a need to enhance awareness among company owners regarding the crucial role they play in contributing to TVET education, ensuring the cultivation of a future workforce with high competence. Moreover, managerial skills are deficient at the TVET school level, particularly in terms of effectively attracting, establishing, and maintaining collaborations with the private sector.

With regard to the manner in which teachers perceived existing TVET certification training,

It is evident that CPD is required to assist in the management of top-down changes, including the policy shift regarding the language of instruction, TVET reform, and labour market changes. A variety of in-service training initiatives have been implemented with the objective of enhancing the calibre of TVET teachers. Many of these training sessions have been held with the objective of equipping educators with the tools they require to provide more effective assistance to students enrolled in technical and vocational courses. However, the challenges of determining the optimal quantity and real-time provision of training remain areas yet to be successfully addressed. Respondents T1, T4 and T9.

Regarding to needs for continuous professional development as a crucial way to improve their level of professionalism; the interviewed teachers declared.

There is a pressing need for a systematic and ongoing program of professional development to assist TVET teachers in meeting the standards of quality training. It is imperative that teachers complete professional development or training to advance their teaching abilities. However, regrettably, only a small number of teachers receive these trainings. Respondent T3, T7 and T12.

The efficacy of teaching is a matter of considerable importance. A substantial body of research has demonstrated that teachers can exert a significant influence on student learning outcomes [17]. Furthermore, it has been established that teachers represent one of the most pivotal in-school factors influencing students' academic success and life outcomes [18]. Studies have indicated that teachers who possess certain professional and personal skills and qualities are more likely to be effective practitioners [19] [20].

In accordance with the UNESCO professional standards expected of teachers, it is evident that a significant proportion of teachers are recruited and enter the teaching profession without the essential knowledge and skills required for the role. In addition to in-service training, which is not always sufficient, the lack of foundational knowledge and skills among teachers has consequences. Students are adversely affected by the lack of preparation among teachers, which makes it difficult for them to overcome the resulting deficiencies.

3.3 The challenges of teachers professionalism development in TVET system

The article posits that the core of successful teaching lies at the intersection of three interdependent areas: Teaching Knowledge and Understanding (content expertise), Teaching Practice (effective classroom management and instructional strategies), and Teaching Relationships (building connections with students, families, and peers). Addressing obstacles to teacher professionalism development requires an understanding of how these domains interact.

3.3.1 Lack of pre-service training for newly recruited teachers

The current system of teacher recruitment within the Rwandan TVET system exhibits several weaknesses. Newly recruited teachers are often deployed to schools at the beginning of the academic year without receiving essential pre-service training. Additionally, their induction relies on individual school management, placing a burden on school head teachers and deputy head teachers who are already occupied with reporting and organizing teaching and learning activities. This practice results in delayed deployments, negatively impacting teachers both psychologically and professionally. Their motivation decreases, leading to a lack of preparedness, subsequently causing ineffective teaching and immediate consequences for students who are introduced to a new teacher under these circumstances.

In any profession, the way in which new generations are welcomed and socialised is of paramount importance. Induction programs should provide novice teachers with collaborative structures to plan lessons and mentoring from more experienced colleagues throughout their vital first years. This transition phase between preparation and professional practice is the most decisive in the teaching professional life, yet it is often neglected, both by policies and by the profession itself. As a result, it sees the highest rates of attrition [6].

3.3.2 Ineffective human resource development mechanism at the TVET school level

The issue of ineffective human resource development at the TVET school level in Rwanda is primarily characterized by a centralized and project-dependent training approach. Currently, teachers in Technical Secondary Schools (TSS) and Vocational Training Centres (VTCs) primarily undergo training through the Rwanda TVET Trainer Institute (RTTI). However, this centralization poses challenges as the organization of trainings depends on sponsoring projects, leading to a general curriculum aligned with the TVET trainer certification framework. This standardized approach fails to address the diverse and specific training needs associated with various trades, as well as the urgent requirement for training new teachers.

This model lacks the flexibility needed to respond promptly to emerging needs or tailor training programs to the unique requirements of different trades within the TVET schools. Consequently, this hinders the adaptability and responsiveness required for effective human resource development.

Effective professional development programs frequently concentrate on the knowledge and skills that students should acquire, as well as the strategies that teachers can employ to facilitate such learning and evaluate

their progress. The most efficacious programs extend over a considerable duration, are at least partially school-based, and embedded in experience [6].

3.3.3 Shortage of private TVET higher learning institutions for helping teachers in CPD

The shortage of private TVET higher learning institutions in Rwanda presents a significant challenge to the CPD of teachers, particularly those specializing in technical courses. The limited availability of these institutions, combined with their absence in certain localities, has substantial implications for teachers' professionalism. One major impact is the geographical inconvenience faced by teachers who aspire to pursue CPD in technical courses. The scarcity of TVET higher learning institutions forces teachers to travel long distances to attend weekend programs. This not only poses a logistical burden but also induces stress as teachers attempt to balance their academic pursuits with their responsibilities during the working week.

Additionally, the scarcity of institutions offering technical courses contributes to increased competition for enrollment, potentially limiting the accessibility of CPD opportunities for interested teachers. The imbalance in the distribution of TVET higher learning institutions further exacerbates these challenges, disproportionately affecting teachers in specific regions. The financial burden associated with pursuing CPD in technical courses compounds the issue. High school fees in technical colleges, compared to other institutions, place an additional strain on teachers, especially when juxtaposed with relatively low salaries. The current standard of living, heightened by rising costs of various commodities, creates a financial challenge for teachers seeking professional development.

The field of teacher education requires a rethink to align with current educational priorities and to better prepare educators for future challenges and prospects. The lack of adequate qualifications among many teachers particularly in sub-Saharan Africa, necessitates immediate action. There is no single, universal model for this change. Instead, a collaborative approach involving all relevant actors in the field of teacher education is essential [6].

3.3.4 Static salary payment system

Teacher salary is critical for teacher recruitment and retention. From a labor-market standpoint, education systems that offer competitive salaries in comparison to comparable professions will be more effective in attracting and maintaining high-quality teachers. Individuals' decisions to become teachers and enroll in teacher education programs are heavily impacted by wage levels and professional incentives, which work together to make teaching a high-status career [21].

The issue of a static salary payment system for teachers in the current educational framework reflects a significant challenge in adapting to the changing dynamics of globalization, particularly within the TVET system. The existing salary structure, which is primarily based on qualification and experience promotion, lacks responsiveness to the evolving demands of the globalized workforce. In the TVET system, where technical skills and expertise hold substantial value, the emphasis on academic qualifications and experience as the primary determinants of salary fails to capture the specialized contributions made by certified technicians. Despite the existence of a TVET trainer certification framework approved by the Ministry of Education, there is no difference in the compensation received by teachers who have undergone specialized training compared to those without formal training.

There are two drawbacks to this fixed payout scheme. First of all, because the system does not sufficiently reward the acquisition of specialised abilities, it deters teachers from taking advantage of professional development possibilities. Secondly, it results in committed educators forgoing their personal time to further their technical proficiency through training, only to have their efforts underappreciated and some of them quitting to work in other fields. Despite studies demonstrating that quality teaching is the single most important in-school determinant of student achievement, teachers remain under-recognized, underappreciated, underpaid and inadequately supported. Issues related to teacher career structure, management, teacher motivation, and job satisfaction have proved difficult to resolve worldwide without a requisite measure of public investment and public will [6].

3.3.5 Limited collaboration between TVET institutions and industrial sector

The effectiveness of TVET is contingent upon robust collaborations between TVET institutions and the industrial sector [1]. Unfortunately, existing collaborations fall short of being effective in addressing the dynamic changes in the current labor market, particularly concerning technologies and practical skills. TVET schools often find themselves delivering static curricula, and there is a noticeable lack of recognition from company owners regarding the valuable contributions they can make to enhance TVET education. Additionally, the majority of TVET schools being government-owned presents a challenge, as head teachers may not proactively engage in collaborations with the industrial sector, relying instead on collaborations initiated at the national level by governing TVET institutions. This results in limited training opportunities for teachers who need to continually upgrade their technical, practical, and technological skills in response to the evolving demands of the labor market and integrate these changes into their daily teaching. The necessity for a relationship-based approach when constructing and implementing teacher education programs, particularly in initial teacher preparation. Neither universities nor schools can undertake initial teacher preparation

independently. Some programs address this issue by creating new spaces and settings where multiple actors in education, including public authorities, teachers' associations and non-governmental initiatives, can collaborate on joint projects [6]. Demands on teachers have grown, impacting the recruitment of talented candidates. The massive expansion of schooling over the past four years has led to a wider recruitment pool than previously considered. This has had positive benefits, such as increasing the employment rate. However, there have also been negative effects, such as a decrease in the share of professionally prepared teachers, a reduction in training capacity, and an overstretch of support systems [6].

In addressing the challenges within the Rwandan TVET system's teacher recruitment and deployment process, several strategic solutions can be implemented; Firstly, the establishment of a centralized pre-service training program is paramount to equip newly recruited teachers with essential skills in understanding learners, curriculum design, teaching methodologies, instructional planning, and assessment. Simultaneously, standardized induction programs should be developed to ensure consistency across all TVET institutions, providing comprehensive guidance for new teachers. To sustain professional growth, a commitment to ongoing professional development opportunities throughout the academic year, such as workshops and seminars, is crucial.

Furthermore, the introduction of mentorship programs, pairing experienced teachers with newcomers, fosters a supportive environment for skill development [22]. Lastly, a more efficient deployment planning process, collaboratively managed by the education ministry and individual schools, will ensure timely assignments and adequate preparation, mitigating the psychological and professional challenges faced by teachers and subsequently improving the overall quality of education in the TVET system. Thus, early teacher education programs could improve the well-being of new teachers and lessen the effects of transfer shock [23]. Additionally, by giving new teachers the tools they need to teach and lowering their level of distress, induction programs, opportunities for professional development, and support from leaders and colleagues should lessen the effects of transfer shock [24].

The World Bank consistently advocates for heightened privatization of education. Privatization, influenced by neoliberal policies since the 1980s, consists of two interconnected elements. The first, exogenous privatization, entails involving the private sector in public education services, often for profit, allowing them to design, manage, or deliver various educational aspects. To improve the efficacy and efficiency of public resources, the second type of privatization-known as endogenous privatization-involves changing the structure and culture of educational institutions by incorporating methods and strategies from the private sector [25]. Collaboration between the Rwandan government and the private sector is necessary for a strategic approach to the complex issue of the lack of private TVET higher learning institutions for teachers' Continuous Professional Development (CPD) in technical education [26]. More private TVET higher education institutions should be established; this is especially important in underserved areas. As part of this partnership, private organisations may be given tax benefits or other financial incentives to invest in TVET education. Additionally, the government might make it more appealing for private organisations to contribute to the growth of institutional capacity by streamlining the regulatory procedures for the development of private TVET institutions. It is important to develop initiatives that will improve technical course affordability and accessibility. Financial pressures can be reduced by government and business sector cooperation in introducing scholarship programs designed specifically for instructors participating in CPD for technical education. It is imperative to address spatial imbalances. By identifying underserved areas, strategic planning can prioritise the creation of TVET institutions in those areas.

The working environment in schools has a significant impact on how satisfied instructors are with their jobs and how they view teaching as a whole. The influence can be either positive or negative, contingent on whether the school environment exhibits adverse or supportive characteristics [27]. The Rwanda TVET Trainer Institute (RTTI) provides teacher training to Technical Secondary Schools (TSS) and Vocational Training Centres (VTCs). However, RTTI's capacity to meet every training requirement is constrained by its reliance on project funding. It is better to set up internal training at the school level. This enables the prompt meeting of certain demands while staying within the school budget. On weekends or holidays, staff members with the necessary training can conduct training.

Teaching is still a profession with low entry criteria nowadays, but the pay is not enough to cover living expenses both now and in the future [16]. Several studies have demonstrated that the majority of the unfavourable features of public sector payment systems in low-income developing nations are also present in the overall structure of teacher compensation. Primary and secondary school teachers' pay scales in these situations are frequently very flat, with very small salary increments based on seniority and experience, and little to no correlation with actual job performance [28], [29].

Addressing the static salary payment system within the TVET sector requires a paradigm shift that acknowledges and rewards the specialized skills and expertise acquired through training and certification. A dynamic salary payment system, reflective of the TVET trainer certificate framework approved by the Ministry of Education, is essential to align teacher compensation with the evolving demands of the globalized workforce.

Firstly, the revised salary structure should integrate a tiered approach that recognizes varying levels of technical expertise and qualifications. This can be achieved by introducing salary increments or bonuses for teachers who obtain TVET certifications. Such a system not only acknowledges the dedication and commitment of teachers who invest their time in continuous professional development but also serves as a motivating factor for others to actively engage in training programs [30].

To incentivize teachers to pursue TVET certifications, the Ministry of Education, in collaboration with relevant stakeholders, should establish clear criteria for salary adjustments tied to specific certifications and levels of expertise. This approach ensures transparency and fairness in the recognition of teachers' efforts to enhance their technical skills. The Rwandan government can encourage teachers to actively participate in professional development, improve the standard of technical education, lower teacher turnover, and better align the educational system with the needs of the globalised workforce by putting in place a dynamic salary payment system that rewards and recognises TVET certifications.

Due to its ability to produce knowledgeable and talented individuals, the industry is vital to maintaining the effectiveness of TVET institutions. TVET teacher education can only be improved by forging strong ties between employers and TVET institutions [31]. These linkages promote good professional attitudes, ease the acquisition of practical skills, and aid in the progressive development of teachers' comprehension of the industrial work environment [1]. To address the challenge of fragile collaboration between TVET institutions and the industrial sector, a comprehensive approach is imperative;

The Rwanda TVET Trainer Institute (RTTI) provides teacher training to Technical Secondary Schools (TSS) and Vocational Training Centres (VTCs) [4]. However, RTTI's capacity to meet every training requirement is constrained by its reliance on project funding. It is better to set up internal training at the school level. This enables the prompt meeting of certain demands while staying within the school budget. On weekends or on holidays, staff members with the necessary training can conduct training. Empowering head teachers in government-owned TVET schools is another key element of the solution. Providing training and resources that enable these educators to proactively initiate collaborations with the industrial sector will create a more proactive and responsive environment [21]. At the national level, advocacy for a framework supporting collaborations between TVET institutions and the industrial sector is essential. This involves advocating for policy changes, strategic planning, and resource allocation to create an environment conducive to effective partnerships [32]. By implementing these multilayered solutions, TVET institutes can benefit from partnerships with industries to access the latest technologies and practices, providing insights into the current requirements for skills at various levels [33].

4. CONCLUSION

The current data shows that teacher professionalism is not yet reaching desirable standards even though there has been significant progress within the past five years. Several challenges have to be addressed by government and education stakeholders through the implementation of the recommended strategies. To formulate effective recommendations and foster a comprehensive discussion on enhancing strategies for the development of teacher professionalism in Rwanda TVET, this study draws inspiration from key principles outlined by the World Bank. The recommendations are informed by insights gathered through interviews with key informants. By synthesizing these global principles and local perspectives.

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