Research article

Measure for clinical supervision practices as factors of predictive indicators of teachers' professional identity development in Tanzania

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ABSTRACT

Developing teachers' professional identity is an ongoing process requiring multiple factors. However, the literature lacks a relationship between measures for clinical supervision practices and predictive indicators of teachers' professional identity development. Therefore, the study explored the opinions of school heads and teachers on measures for better school heads' clinical supervision practices and predictive indicators of teachers' professional identity development in Tanzania public secondary schools. A qualitative approach and multiple case research design governed the study in Njombe Region. Twelve informants participated in the semi-structured interviews and sixteen in focus group discussions. The analysis approach was content-structured analysis for the quantification of informants' responses. The study found major adjustments focused on pre-observation, classroom observation, and supervisory feedback. Clinical supervision adjustments in the mentioned dimensions are factors for developing predictive indicators of teachers' professional identity, such as loving the teaching profession, working for greater peace and freedom, feeling the teaching work is respected, and improving self-efficacy relative to teaching-learning efficiency. Minor adjustments were found in academic professional development for teachers and post-observation clinical supervision. Consequently, the development of predictive indicators of teachers' professional identity. Such as preserving professional skills and image and being prepared to have commitments to educating students. The study concludes that clinical supervision adjustments are indicators of teachers' professional identity development. The government is recommended to encourage clinical supervisory innovations to promote and enhance teacher professional identity development. Study findings provide a better understanding of a growing body of knowledge about improving clinical supervision practices to develop teachers' professional identity.

1. Introduction

The clinical supervision approach is gaining popularity in supervising teachers' professional activities [1–4], such as the preparation of teaching and learning professional documents such as schemes of work and lesson plans [5–8] and pedagogy practices [7, 9–11]. It intends to improve teachers' teaching and learning practices [10,12] on the high demand of so doing [13,14]. However, supervisory mutual understandings between and among school heads and teachers are substantial for such successes [15–19]. In turn, it increases teachers' positive emotions about the teaching profession [20], accountability for the profession itself and the society it

serves [21–23]. The study learned that school heads and teachers take the frontline for clinical supervision innovations. This study, therefore, explored the opinions of school heads and teachers on measures for better clinical supervision practices and the predictive indictors of teachers' professional identity development in Tanzania secondary schools.

1.1. Origin and aim of clinical supervision approach

In the teaching profession, clinical supervision was introduced by two American scholars, Morris Cogan and Robert Goldhammer in the late 1950s and early 1960s at Harvard University School of Education [24,25]. It was a formal supervisory model of supervising pre-service teachers during the preparatory stages [26,27]. Its primary concern was to guide pre-service teachers to develop teaching professional standards that accord with Harvard University School of Education [28–30]. In supervising pre-service teachers, university educators carry out clinical supervision activities [31]. The 21st-century educationalists promote it as a contemporary supervision model for supervising in-service teachers [32,33]. Researchers Ref. [14] clarify that under clinical supervision, in-service teachers are offered a chance to self-study at the workplace by analysing and discovering their teaching and learning practices in day-to-day professional lives. In the views of [34], clinical supervision is one of the best supervisory models that support the professional growth of in-service teachers from within the workplace. In most cases, school heads are responsible for facilitating supervisory activities. This understanding was a motivation factor to unearth clinical supervision practices in the context of in-service teachers in line with developing teachers' professional identity.

1.2. Stages of clinical supervision and adjustment

Literature on clinical supervision [8,35–40] stipulates that Robert Goldhammer developed five stages of clinical supervision while Morris Cogan developed eight stages [41–45]. However, Goldhammer's five stages and Cogan's eight stages hold common five stages: pre-observation supervision, classroom observation, supervisory feedback, academic professional support, and post-observation supervision. Table 1 shows the stages of clinical supervision.

The surveyed literature on clinical supervision [10,46,47] portrays the need to modify clinical supervision practices. [10], for example, state that primary school teachers and head teachers in Indonesia suggested adjusting clinical supervision in the planning, observation, evaluation, and feedback stages. Studies by Ref. [48] in the United States of America (USA) and [49] in Lebanon, found that clinical supervision practices had time demanding to both school heads and teachers. In a situation such as in the USA, school heads and teachers suggest withdrawing teaching and learning analysis stages, while in Lebanon, pre-observation and observation activities were revised accordingly. It could be argued that practising clinical supervision is adjustable to promote efficiency. To this end, the opinions on measures for better clinical supervision practices are of great concern in Tanzania's public secondary schools.

1.3. Meaning of teacher identity and teacher professional identity

In the literature, teacher identity and teacher professional identity are interchangeably described. The main concern is grounded on the fact that the two terms lack universal definitions. In a claim of this study, a concern holds facts on 'what is a teacher's identity?

Table 1
Stages of clinical supervision.

Cogan's eight stages	Goldhammer's five stages
Planning for pre-observation (i.e., school heads build mutual trust with teachers and ask teachers to participate in supervision)	
Pre-observation (i.e., school heads and teachers view teaching and learning objectives and prepare teaching and learning materials)	Pre-observation (i.e., a teacher has to appear to the school head and present orally what the students will learn by giving lesson plans and supporting teaching and learning materials)
Planning for classroom observation (i.e., school heads communicate with teachers about classroom observation and inform teaching and learning activities that will be recorded)	
Actual classroom observation (i.e., school heads visit teachers and record teaching and learning activities)	Classroom observation (i.e., the school head is required to perform actual classroom teaching and learning practices as planned with teachers before the class visit)
Analysis of teaching and learning practices (i.e., school heads and teachers may decide to work together or individually in analysing teaching and learning activities)	Analysis and interpretation (i.e., school heads and teachers sit together to analyse teaching and learning activities, and teachers receive feedback)
Planning for discussion of the result (i.e., school heads should arrange an appropriate place and time to discuss with teachers about teaching and learning lessons that have been conducted)	
Conducting professional support (i.e., school heads and teachers agree to use coaching or mentoring approach in assisting teachers professionally)	Professional support (i.e., teachers are assisted professionally for future teaching and learning improvement)
Planning for the subsequent supervision (i.e., school heads schedule for the next supervision and inform teachers about the following teaching and learning supervision)	Post-observation (i.e., school heads make follow-up on teachers' teaching and learning practices and provide general feedback on teaching and learning supervision)

Sources: Ref. [28,30].

rather than 'what is a teacher's professional identity?' According to Ref. [50], teacher identity lacks universal definition [51]. writes: "Teacher identity cannot be thought of as a universal understanding of oneself as a teacher, as being a teacher means so many different things within the various workplaces, schools, communities, where teachers work" (p. 94). With a point view of [52], "teachers' identity is not something that is fixed nor imposed; rather it is negotiated through experience and the sense that it is made of that experience" (p.15). As such, teacher identity is a dynamic, non-universal, and multilateral concept in the teaching profession [51,53, 54]. Thus, it is defined as how a teacher feels about the profession as more important and attractive than others under their capacity [55]. This definition is infinitive as it presents an individual emotions about the teaching profession.

Besides, teacher professional identity has no definition across social contexts [56–59]. [57] confirm that "there is no universally agreed conceptualisation of teachers' professional identity" (p. 39), reasonably due to today's fast-paced and interconnected world [58]. Lacking a universal definition of 'teacher professional identity' does not mean no definitive definitions exist. An individual could describe the concept of a teacher's professional identity by reflecting on professional ethics, professional expertise, and teaching as a profession [60,61]. It means any provided definitions reflecting teachers' professional responsibilities are universally understood. [62], for example, describes it based on 'professional ethics,' that is, a set of attributes such as moral conduct, professional ethics, teaching value, and competencies in the teaching profession. Researchers Ref. [63,64] define it based on 'expertise,' that is, a self-understanding of teachers as experts in subject matter, teaching methodological and didactical perspectives. [65] define it as 'teaching as a profession,' an image of the teachers on self-esteem, self-efficacy, and professional commitment. A teacher's professional identity as a concept shapes teachers' pedagogical practices in the classrooms [66]. In turn, it increases and enhances teachers' work performance [67,68]. Though teacher identity holds infinitive definitions and teacher professional identity definitive definitions, both guided the study to learn teachers' expressions in predicting the development of teaching professional identity as a result of measures for better clinical supervision practices.

1.4. Developing teacher identity and teacher professional identity

In the literature, the perspectives on how to develop teacher identity [68–72] and teacher professional identity [73,74] sound different. Developing teacher identity is complex and requires an individual emotional process in the teaching profession [68–72]. [72], for example, states that teacher identity development is influenced by the cultural characteristics of a particular teacher and teaching lived experience. According to Ref. [68], teacher identity development is a result of "teachers' responses to situations, practices, and available educational resources [p. 215]". Therefore, it is shaped and reshaped over time as a response to an investment in an educational enterprise. In contrast, teacher professional identity development is influenced by the interaction that the teacher does with the collegians at the workplace [68,73–75]. For example [73], described that developing a teacher's professional identity is an ongoing process that requires a teacher to interact with other teachers in teaching and learning practices. It appears that individuals develop professional identity by interacting continuously in the community of the profession [76]. Working in a community of a given social class is an opportunity to create the social fabric of learning new professional skills which are teachers' professional identity development at the workplace. Therefore, it strongly suggests that teaching and learning setups are, by default, factors for teacher professional identity development [77–83]. [59] illustrate that school contexts and heads play an essential role in promoting the development of teachers' professional identities. These scholarly insights guided the study in unearthing the predictive indictors of teachers' professional identity development as result of measures for better clinical supervision practices in Tanzania.

1.5. Prior studies on teacher professional identity development

Previous studies have associated the development of teacher professional identity with professional development [84,85]; working setups [51,70,81,86–88]; critical incidents [69]; and educational policies [89–92]. The findings of [93], for example, showed that a supportive working environment in the United States of America was crucial in enhancing the development of teachers' professional identities. In the context of Iran, the studies of [89,94] found that changes in the English language curriculum negatively affected teachers' professional identity, like professional autonomy. A study by Ref. [92] in China found that teaching professional identity among English teachers was negatively affected. Teachers were not acknowledged in curriculum design and lacked professional development support while implementing education for sustainable development. In Saud Arabia [84], found that teaching context developed teachers' professional identities, such as self-efficiency in classroom teaching practices. A study by Ref. [86] in South Africa found that initial teacher education lived experience in a school context, classroom practices, and school support were among the factors for developing teachers' professional identity. Despite school contexts being agencies for teacher professional identity development, clinical supervision is not mentioned as an internal or external factor influencing teacher professional identity development. Therefore, this study needed to add knowledge to the existing literature.

2. Clinical supervision and teacher professional identity in Tanzania

2.1. Clinical supervision

Tanzania started supervising in-service teachers with the clinical supervision approach in 2008 [95,96]. It was the first cycle of the secondary school leavers from community public secondary schools established in 2004 [97]; unfortunately, most of them earned substandard education [98–100]. Thus, clinical supervision was a solution to developing teachers' professional competencies [95,101] through evaluating teachers' preparatory teaching and learning materials, such as schemes of work, undertaking actual classroom

observation on teachers' teaching and learning practices, providing teaching and learning feedback, and assisting teachers professionally. Despite clinical supervision guidelines for Tanzanian school heads, literature shows that teachers' schemes of work and lesson plans are observed after classroom teaching and learning practices [102,103], there are irregular classroom teaching and learning supervision [104,105], supervisory feedback is infrequently to teachers [106], and teachers are not effectively engaged for in-service professional learning at the workplace [102]. These findings indicate that most secondary school teachers are not adequately supervised by their school heads. In turn, the public claims that community public schools continue to offer unsatisfactory secondary education in the country [107–109]. Thus, this study's findings are expected to add a better understanding of a growing body of knowledge about the need to improve clinical supervision practices in line with predictive indicators of teachers' professional identity development in Tanzania.

2.2. Teacher professional identity

Tanzania experiences a severe shortage of literature on teacher professional identity [87]. It is not easy to specify an organ responsible for developing and enhancing teachers' professional identity [56]. For example [87], present literature on how English primary teachers in Tanzania and England constructed their occupational identity. It found that while England teachers developed a professional identity due to having human resources to support pupils' learning, enough teaching and learning resources, and government support for teachers' professional development, most of these factors were absent in Tanzanian schools. However, most teachers claimed to have developed their professional identity from the ground of self-interest in teaching, showing gratitude for being cared for and loved by teachers at the time of schooling. A study by Ref. [110] focused on school infrastructure as a predictor of teacher identity construction in Tanzania. It discovered that poor quality houses, poor states of classrooms, and shared teaching staff offices reduced the teaching professional values of teachers in the communities. In turn, teachers' ability and confidence to teach students were deteriorating.

[85] assert that in developing teacher professional identity through quality assurance at the University of Dar Es Salaam, it was found that the university quality assurance had a minor influence on forming teachers' professional identity. Looking at the dimensions of these studies, it becomes difficult to judge the contribution of clinical supervision to developing teachers' professional identity. The observed gaps were filled in by exploring the opinions of school heads and teachers on measures for better school heads' clinical supervision practices as factors of predictive indicators of teachers' professional identity development in Tanzanian public secondary schools. This study, therefore, was guided by one question.

- What are predictive indicators of teachers' professional identity development as a result of measures for better school heads' clinical supervision practices?

3. Method and materials

3.1. Research approach

This study employed a qualitative research approach. Researchers [111,112] argue that research studies that use qualitative approaches collect in-depth and comprehensive varieties of data that suit the social research inquiries in their natural contexts. According to Ref. [113] qualitative research is suited to "promoting a deep understanding of social activity as viewed from the perspective of the research participants" (p. 38). The approach was vital in exploring the opinions of school heads and teachers on measures for better clinical supervision practices and, thereby, the development of teachers' professional identity. Four reasons for using the qualitative approach [112] were observed. Firstly, a description, which focuses on revealing a situation, guides the study to demonstrate clinical supervision practices at the workplace. The main concern was to collect the opinions of school heads and teachers on administering pre-observation supervision, classroom observation, supervisory feedback, academic professional support, and post-observation.

Secondly, evaluation, which focuses on making judgments about the effectiveness of practices, guided the study in understanding whether or not clinical supervision under school heads was satisfactorily practised at the workplaces. Thirdly, interpretation, which focuses on getting new insights into the study problem, guided the study in gathering opinions of school heads and teachers on the required measures that school heads should take towards better reinforcing clinical supervision practices and the expected indicators of teachers' professional development. Fourthly, verification, which focuses on associating the study assumptions, guided the study in establishing the conclusions on the contribution of measures for better clinical supervision practices in developing predictive indicators of teachers' professional identity.

3.2. Research design

The study used a multiple case study design to get in-depth information from the respondents about their attitudes, opinions, and feelings about their day-to-day clinical supervision practices. Literature [114–116] states that multiple case study design deals with several inquiries of investigation in a natural context. In this study, school heads and teachers in the selected public secondary schools were considered cases in exploring the predictive indicators of teachers' professional identity development as a result of measures for better clinical supervision practices at workplaces. The study employed the 'what' questions concerning measures for clinical supervision practices and 'what' on predictive indicators of teachers' professional identity development. Ref. [117] states that 'what' questions help the informants express inner views about the topic under the study.

Therefore, the study was guided by five study questions: i) What are measures for improvement of schemes of work and lesson plans, and what will be the implications in your teaching profession? ii) What should be done to improve classroom observation, and what will be the implications in your teaching profession? iii) What are measures for improvement of supervisory feedback, and what will be the implications in your teaching profession? iv) What measures should school heads take to improve teachers' academic professional support, and what will be the implications in your teaching profession? v) What measures should school heads take to improve post-observation supervision, and what will be the implications in your teaching profession? Therefore, the multiple case study design was essential as it allowed a study to gather various data from respondents and informants, which enhanced the quality of the research findings. The design facilitated gaining the opinions of school heads and teachers on the best ways of conducting clinical supervision that could enhance the development of teachers' professional identities.

3.3. Location of the study

This study was conducted in Njombe Region in Tanzania for the academic year 2020–2021. It is located in the Southern Highlands, below the equator between latitudes 8° 40′ and 10° 32′ and longitudes 33° 47′ and 35° 45′ East of Greenwich; its land area is 21,299 Square Kilometres and water area is 3695 Square Kilometres. The region was chosen for this study because it has good records of students' academic achievement [118]. However, the government survey on secondary education performance delivery report shows that 43% of education stakeholders were unsatisfied with teaching and learning [119]. These findings indicated that clinical supervision was not providing satisfactory professional competencies for teachers to deliver acceptable teaching and learning practices to their students. Therefore, the claim was resolved by exploring school heads' and teachers' opinions on measures for better clinical supervision practices and thereby developing teachers' professional identity in selected schools.

3.4. Population, sample size, and sampling techniques

The study's targeted population was 68.27% (n = 1651) male teachers and 31.73% (n = 767) female teachers [120]. Regarding sample size, there were 28 informants comprising four school heads, eight experienced teachers, and sixteen teachers. This sample was predetermined by the study objective of exploring the opinions of school heads and teachers on measures for better clinical supervision practices that could enhance predictive indicators of teachers' professional identity development. According to Ref. [121] write, "The qualitative research can utilise a large sample, as in the case of program evaluation research. The size of the sample should be informed primarily by the research objectives, research question(s), and subsequently, the research design" [p. 288]. The study used the reputation (purposive) technique in selecting school heads and experienced teachers. It was believed that school heads and experienced teachers had rich information on the studied subject [122]. Besides, the purposive criterion technique was used in selecting teachers.[123] suggests that criteria sampling must have a set of inclusion and exclusion factors. Some of the inclusion and exclusion factors are such as informants teaching speciality [90], sex [124], and working experience [6]. However, school heads were asked to suggest teachers with predetermined characteristics in a particular school. According to Ref. [125], researchers usually get suitable informants for the study as recommended by knowledgeable people in the institutions. Table 2 shows the social demographics of informants.

Table 2 shows that the study informants met all criteria for being secondary school teachers in Tanzania [126]. Additionally [127], states that teachers who have worked for less than five years are at an early career stage, between six and twenty years are in the middle career, and more than twenty years are in the late career stage. However, for the sake of getting informants with sufficient narrative data on measures for better clinical supervision practices and predictive indicators in developing teachers' professional identity, teachers whose working experience was five years and above were the most preferred. Five years is one cycle of working experience in Tanzania, whereas a teacher would have at least experience teaching ordinary forms classes (I-IV). This study's data were obtained from school heads and teachers with enough experience in practising clinical supervision in their respective schools.

Table 2
Informants' demographic data (n = 28).

	School heads	Experienced teachers	Teachers	Total &%
Male	3	4	8	15 (53.6%)
Female	1	4	8	13 (46.4%)
Science	2	6	8	16 (57.0%)
Social Science	2	2	8	12 (43.0%)
<5	2	–	–	2 (7.0%)
6-20	2	3	16	21 (75.0%)
21-35>	–	5	–	5 (18.0%)
Diploma	–	5	5	10 (35.7%)
Bachelor	1	2	11	14 (50.0%)
Masters	3	1	–	4 (14.3%)

Source: Field Data (2021).

3.5. Data collection

3.5.1. Semi-structured interviews

Semi-structured interviews were employed in collecting qualitative data from four school heads and eight experienced teachers. The nature of the interview was face-to-face for quick and immediate follow-up on unclear information [122,128] about informants' attitudes, beliefs, opinions on the required measures for better clinical supervision practices, and the expected teaching professional identity development among teachers. At each school, there were three sessions of interviews, one of them for the school head and the rest for male and female experienced teachers. Each was held at school heads' offices, had a time range from 40 to 80 min, and was tape-recorded. These practices were drawn from Ref. [129], who suggest that face-to-face interviews require mutual agreements between the interviewer and interviewees on time spent, places to carry out the discussions, and means of recording the data. [130] adds that: "for interviews lasting 90 min or more, it would be impractical to remember the interviewee's responses and make detailed notes at the end. Without tape-recording, all kinds of the data are lost" (p. 33). In such respect, after the interviews, the tape-recorded interviews were immediately transferred to an audio storage device for the safety of the data.

3.5.2. Focus group discussion

Narrative data from 16 teachers were collected by focus group discussions as "the researcher brings together a small number of respondents to talk about the area of interest" [131, p. 153]. Ref. [131], example, proposes four to eight respondents, while [132] offers six to twelve. As researchers have no agreement about the minimum or maximum number of respondents in focus group interviews, four teachers in each school yielded rich data on measures for clinical supervision and predictive teachers' professional identity development. [133] suggests that in collecting data through FGD, the facilitator must control members' rejection of others' viewpoints and ask members to keep the matters discussed confidential and the recorded data. To comply with the scholarly suggestions, the researcher of this study positioned as the facilitator by organising one FGD comprised of 4 teachers, with attention being paid to their sex distributions at a 1:1 ratio, working experience at a 1:1 ratio, and subject specialisation. All FGDs were conducted in schools (two at the school heads' offices, one at teachers' staff meeting hall, and another at the computer learning room); narratives were tape-recorded, and ensured discussions lasted for approximately 90–120 min to the saturation point of information. "One session for FGD should last no more than 90–120 min" [134, p. 155].

3.5.3. Data analysis

The study employed content analysis. Researchers [134–137] describe qualitative content data analysis as the analysis of the content of the narrative data. In this study, narrative data were opinions of the school heads and teachers on the school heads' clinical supervision practices that, in one way or another, required improvement for better practices. The study employed content-structured coding analysis, which is appropriate for studies that comprise multiple participants in gathering data through semi-structured interviews [138]. The content-structured analysis enabled the development of five themes: pre-observation, classroom observation, supervisory feedback, academic professional support for teachers, and post-observation. These themes emerged as they were predetermined in semi-structured interviews and FGDs protocols.

The study followed Creswell and Creswell [139] five stages of qualitative data analysis. Stage one involves data organisation based on the source of data. The study arranged all informants' responses, such as school heads' interview data, experienced teachers' interview data, and teachers' FGDs data. Stage two involves the coding process. It is a process that identifies keywords in phrases. The study employed structured coding strategies to generate the list of terms emerging from school heads' clinical supervision practices and teachers' sense of their professional identity development. Stage three includes writing a word to be used in labelling the actual responses of the informants. The study generated unique words, and through Microsoft Office software, keywords were picked up with the help of word navigator, and the narrator (informant) was identified with their narratives. Stage four involves descriptions of predetermined themes case by case, such as pre-observation, classroom observation, supervisory feedback, academic professional support, and post-observation. The key issues that emerged in each theme as measures for better clinical supervision practices and indicators of teachers' professional identity development were presented in Tables. Stage five is concerned with presenting informants' responses. Informants' responses were presented through quotations to convey the findings under each theme. Informants' responses were 'quoted,' and the quotes of individuals were subjected to representativeness. At least one quote from each group (school heads, experienced teachers, and teachers) was presented, and additional quotes were presented on different narratives fetched from the informants.

4. Findings

The findings of this study are presented in four categories: pre-observation, classroom observation, supervisory feedback, academic professional support, and post-observation. Each category is guided by study questions as follows:

4.1 Questions on pre-observation: *What are measures for improvement of schemes of work and lesson plans, and what will be the implications in your teaching profession?* Table 3 shows responses on measures for better pre-observation practices and the predictive indicators for teachers' professional identity development.

The findings in Table 3 indicate that the most significant measures are preparing and sharing schemes of work and lesson plans electronically and delegating internal school quality assurance unit to review teachers' schemes of work and lesson plans. These measures are believed to influence the development of teachers' professional identity, as some of the informants were quoted saying:

Professional documents such as schemes of work and lesson plans should be developed online for the teacher to complete. The system must respond (progress) for a quarter of the term. The teachers will see the goals they planned and their success. Each teacher will work for greater peace and freedom (FGD, teacher of school A).

The government must agree to give full autonomy to the internal school quality assurance team to review the teachers' preparation of documents. Their model of review is face-to-face discussion. When teachers consider the advice of one entity, their commitment to working will increase to the extent of enjoying the profession (School head, Interview school C).

My general advice is that the school head should review the documents and require the subject. Providing teaching resources is core to making teachers confident to teach students (Male teacher, school A).

I advise the school head not to put written advice in the documents without an in-person conversation with the teacher. The practice will enhance relations, and teachers will be satisfied with the given opinions. They will quickly work stress-free (Female teacher, Interview school D).

School heads and teachers were eager for transformation from offline preparation of teaching professional documents to online applications. Online application of schemes of work and lesson plans is highly encouraged to simplify professional work among and between teachers and school heads. School heads and teachers were also interested in needing school heads' pre-observation to be replaced with an internal quality assurance unit. Innovations at pre-observation of teaching professional documents would improve professional autonomy among teachers; teachers would feel the taste of their professional practices, thus developing their teaching professional identities.

4.2 Research Questions: *What should be done to improve classroom observation, and what will be the implications in your teaching profession?* Table 4 shows measures required for better classroom observation practices and the expected indicators of teachers' professional identity development.

The findings in Table 4 indicate that school heads' classroom observation required measures for better practices. School heads' regular classroom observation primarily and use the internal school quality assurance members for such purposes. Some of the narratives are hereafter presented.

The government should try to develop an evaluation form for school heads … to record teachers' activities in the classroom. This process will help the teacher get their report indicating specific issues. As a result, he will find a wider field of knowing the areas where he is doing the best and will probably find new morale to learn new things and apply such knowledge in teaching students (School head, Interview, school A).

I advise that the school head enters all classrooms without preference. Then, I may remove the thinking I have in my head that the school head is doing biased supervision. If the head had supervised me in the classroom, I would see that my school head would have appreciated my work (Male teacher, Interview school B).

The eye of the school head is the same as the eye of the ISQA … I advise ISQA members to be trained more to supervise the teachers in the classroom. Teachers will get more advice and will become happy to learn a few things to work on to improve their teaching profession (School head, Interview, school D).

The study learned that actual classroom supervision, which would have brought classroom supervision satisfaction to teachers, was rarely conducted in schools. With this experience, school heads and teachers suggested measures for its improvement. For example, school heads' enter each class and use the internal school quality assurance members to supervise teachers in the classroom. These measures are expected to influence the development of teachers' professional identities.

4.3 Research Questions: *What are measures for improvement of supervisory feedback, and what will be the implications in your teaching profession?* Table 5 presents informants' responses on measures for better supervisory feedback practices and predictive indicators of teachers' professional identity development.

Table 3
Pre-observation (n = 28).

Measures	Professional identity indicators	Frequency
	Teachers will:	
Schemes of work and lesson plans are to be developed electronically for the teacher to complete	- love the teaching profession - enjoy practising their ability to work - be free from professional stress - feel the teaching task is light and promotes students to study - work for greater peace and freedom - feel proud to learn about quality teaching and learning preparations.	17
Internal school quality assurance team to review teachers' professional documents	- be free to consider the advice of one entity and remain in their position to work. - develop skills that make them enjoy interactive teaching and learning classes.	7
Review the documents and provide the requirements for the subject	- be confident to teach their lessons.	2
Communicate with one teacher after another when looking at the scheme of work and lesson plan	- be satisfied and develop the courage to prepare the best lessons.	2

Source: Field Data (2021).

Table 4

Classroom observation (n = 28).

Measures	Professional identity indicators	Frequency
	Teachers will:	
School head must further enter the classroom and schedule such practices with teachers	- be in the position of fulfilling their professional responsibilities - feel the teaching work is respected - feel school heads appreciate their work.	17
School heads must use internal quality assurance members as they have a broader scope of supervision, such as teaching methods, document preparations, and subject content.	- feel expertise in specialised subjects - be happy to learn a few things to work on to improve their teaching profession - develop courage and a spirit of sharing teaching experiences.	10
Government should develop a specialised form to complete the teacher's teaching and teaching practices	- find new morale to learn new things in the areas that are not doing the best.	1

Sources: Field Data (2021).

Table 5 shows that the majority of informants were interested in one-to-one feedback. Through individual teacher supervisory feedback, teachers would likely make sincere efforts to rectify the teaching and learning challenges and develop a teaching professional identity. Narratives of some of the teachers are as follows:

"I endeavour to give feedback immediately after my supervision. I am thinking of continuing with the existing procedure. I say this because my teachers have learned to have satisfactory work performance" (School head, Interview, School D).

I advise that the feedback focuses on the school's ability to provide for lesson needs, and every teacher has to get the feedback. If the school head can give us teaching resources as we usually ask, our teaching will be practised professionally (Female teacher, Interview school A).

Getting the real message from our school's group feedback is not easy. Therefore, I advise our school head to develop a habit of giving feedback to individual teachers. An individual teacher would reflect more on their feedback and probably improve confidence to work with the needed changes (Male teacher, Interview school C).

… it could sound better if the head decides to communicate with an individual teacher when providing feedback. Nevertheless, I assure you that the practice will make me feel appreciated and work on any teaching weakness highlighted (FGD, teacher of school D).

The quotations imply that school heads must develop new strategies in supervisory feedback, such as individual feedback to teachers and providing teaching and learning resources. When teachers are given feedback individually and teaching resources, it is expected that the likelihood of developing a teaching professional identity is high. Through individual teacher supervisory feedback, teachers would likely feel appreciated in their teaching profession, sincerely rectifying the teaching and learning challenges and improving their work performance.

4.4 Research Questions: *What measures should school heads take to improve teachers' academic professional* support*, and what will be the implications in your teaching profession?* Table 6 shows informants' responses on measures for better academic professional support for teachers and predictive indicators of teachers' professional identity.

Table 6 discloses school heads and teachers interests in advancing the teaching profession. Regarding that, school heads were encouraged to allow internal quality assurance to conduct regular workshops and seminars, design long-term school-based learning on competence-based teaching to activate teachers' potential teaching talents, gain skills and knowledge on teachers' school-based learning activities, and develop professional respect in the teaching discipline. Some of the informants argued that:

Sincerely, we have an ongoing academic mentorship for all teachers. All teachers feel like facilitators of those seminars and workshops as we speak! As a school, we must keep working with the established strategies (School head, Interview school D).

Table 5

Supervisory feedback (n = 28).

Measures	Professional identity indicators	Frequency
	Teachers will:	
School heads should work with one-to-one teaching and learning supervision feedback.	- improve confidence relative to teaching learning efficiency - feel appreciated in their work.	22
School heads must provide feedback that responds to lesson needs	- practise teaching professionally.	3
School heads must continue with the existing procedure	- build self-efficacy relative to professionals' competencies	2
School heads should give feedback occasionally	- be stable and continue improving their professional competencies.	1

Sources: Field Data (2021).

Table 6
Academic professional support (n = 28).

Measures	Professional identity indicators	Frequency
	Teachers will:	
School heads must continue with present practices as ongoing academic mentorship.	- learn to become confident as facilitators of in-house training	20
School heads must plan and conduct long-term in-house training on the competence-based curriculum	- preserve their professional skills and image	4
Regular teacher learning programmes through workshops and seminars.	- demonstrate professional values - professional efficacy, ethical teachers - have commitments to educate students	4

Sources: Field Data (2021).

I hope our head continues with these workshops and seminars. The school head must contact the government so teachers can receive long-term training on competence-based curriculum practices. That's where we'll be helped to gain an insight into what's on the competence-based curriculum. If we do so, we will be prepared to have commitments to surely educate our students (FGD, teacher of school A).

Several times, we have been academically mentored. Training should be done by increasing the number of days from 1 day to 1 week to learn many things. Again, each one of us would be an in-house training facilitator. Knowing a fellow teacher's ability to present technical arguments encourages many teachers to demonstrate the values of the teaching profession (FGD, teacher of school C).

The narratives suggest that school heads planned and conducted professional development for teachers. In this case, school heads and teachers indicated that it could be better to continue working with the current strategies, such as school heads' academic mentorships. However, while the school heads and teachers were satisfied with the current practices, few encouraged school heads to conduct regular workshops and seminars to activate teachers' potential teaching talents, gain skills and knowledge on teachers' school-based learning activities, and develop professional respect in the teaching discipline.

4.5 Research Questions: *What measures should school heads take to improve post-observation supervision, and what will be the implications in your teaching profession?* Table 7 presents informants' responses on better post-observation supervision practices and predictive indicators of teachers' professional identity.

The findings in Table 7 show that the most frequently reported opinions as measures for better post-observation supervision were linked to notions of continuing with the practices. School heads and teachers confirmed to have developed indicators of teachers' professional identity as professional love to students and working according to professional ethics. Besides, informants were aware that if school heads' post-observation supervision could be improved by providing teaching and learning resources, teachers would make interactive teaching and learning lessons benefit each student, among other indicators. As for this, some of the informants said:

My teachers are happy with the follow-up. I want to share that teachers are often closely tracked on what we agree. Due to this, rapid changes are observed, such as working with professional ethics. There are no adjustments to make as most teachers work with professional ethics (School head, Interview school C).

I value the supervision follow-up done by my school head. The school head should strive to make a follow-up for each teacher, and these follow-ups should be consistent by ensuring that the teacher meets the needs of his subject. If we do so, I will be committed to practising teaching creatively (Male teacher, Interview school B).

My advice is that the school head must strive to ensure that the teacher meets the needs of their subject. If that condition is met, no one will be left behind in ensuring that each student learns. Teachers will also be confident to participate in co-teaching strategies

Table 7
Post - observation (n = 28).

Measures	Professional identity indicators	Frequency
	Teachers will:	
School heads should continue with the current procedure in post-observation.	- have to learn to maintain professional love among and between school heads and students. - teachers have to develop the art of performing teaching with professional ethics - be flexible to learning as per given school heads' professional advice, such as using the English language - value working based on supporting each other and putting the interests of the student forward.	16
School heads' post-observation should be consistent with making sure the teacher gets the needs of their subject	- be committed to practice teaching creatively - have professional feelings, as no one has to be left behind in ensuring each student is learning - be confident in teaching per competence-based curriculum to fulfil their students' dreams.	12

Sources: Filed Data (2021).

(Female teacher, Interview school D).

> I advise our school head to provide us with the requirements for our subjects. By doing so, he will have expanded the curriculum to help us work more accurately. By the end of the day, my colleagues and I will be confident teaching as per competence-based curriculum to fulfil their students' dreams (FGD, teacher of school A).

The narratives prove that school heads worked on post-observation supervision and teachers developed professional identities. However, critical issues were raised regarding school heads' failure to provide teachers with the necessary teaching and learning resources. These practices required measures to be taken accordingly. Teachers thought it essential for school heads to ensure that teaching and learning resources were being provided to teachers. Nevertheless, it was found that teachers were aware that if school heads' post-observation supervision could be improved by providing teaching and learning resources to teachers, teachers would make interactive teaching and learning lessons benefit each student. Teachers also anticipated it would be an opportunity to develop efficient teaching and learning abilities based on new strategies.

5. Discussion

5.1. Pre-observation

The study found that schemes of work and lesson plans are to be developed electronically for the teacher to complete. The voice of study participants is to create an enabling environment that allows teachers to access direct feedback from school quality assurance authority and reduce workload, thereby creating space for teaching learning activities. It was believed that online application is the factor that would develop teachers' professional identities, which are not limited to loving the teaching profession, enjoying practising teaching, and feeling proud to learn about quality teaching and learning preparations. In their study [49], found that school heads and teachers agreed on reducing the amount of paperwork in clinical supervision while preserving time for teaching and learning practicum. The present study findings concur with the past study findings. They are embedded in reducing paperwork to give teachers sufficient time to facilitate teaching and learning processes.

The study also found that school heads and teachers provided measures based on shifting pre-observation tasks to school delegates as internal school quality assurance. The study participants wanted to feel that internal school quality assurance would offer instant professional support to teachers compared to school heads. This measure is critical for teachers to develop professional identities, such as remaining in their position to work and enjoying interactive teaching and learning classes. Also [43,140], found that reviewing teachers' documents and sharing information on time before teaching starts enabled teachers to prepare daily lesson plans for practical lesson delivery to learners. Former findings justify that instant feedback could contribute to teachers' work performance. Contrary to the current study, its courses are based on teachers' likelihood of developing teaching professional identity.

The study found that the school head should communicate with one teacher after another when looking at the scheme of work and lesson plan. In its effect, the teachers will be satisfied and develop the courage to prepare the best lessons. The critical issue to argue for communication is discussing the availability of teaching and learning resources. The findings concur with previous studies such as [43, 49]. These studies suggested that school heads should communicate with each teacher on the reviewed professional documents. The current findings and previous ones match significantly as all inform the importance of school heads and teachers' communication during pre-observation supervision.

5.2. Classroom observation

The study found that school heads must regularly undertake classroom observation. Through regular school heads' classroom observation, teachers' teaching approaches will be known to school heads for further professional support. According to participants, the practice is essential for developing teachers' professional identities, such as feeling the teaching work is respected and appreciated. These predictive indicators of teachers' professional identities are significant in improving education enterprise to deliver high-quality education to the learners. With this claim, [141] states that when school heads constantly implement classroom observation, teachers improve competencies that support a satisfactory teaching-learning process. Previous research studies indicate that school heads should regularly oversee teachers' classroom learning activities [43,141–143]. [142], for example, argue that consistent actual classroom observation helps school heads identify teachers with sound, average, or weak pedagogical skills for service delivery.

The study also found that school heads should delegate classroom observation to internal quality assurance members. The study participants reported that teachers who serve at the internal school quality assurance unit are vital as they would significantly promote the development of teaching professional identities. Some indicators of teachers' professional identity development are feeling expertise in specialised subjects, courage, and a spirit of sharing teaching experience with colleagues. This concern appeared in previous studies, such as [33,45], that experienced teachers should practise clinical supervision with the same specialisation as teachers. [45] adds that specialists in particular subjects should have access to clinical supervision because school heads in developing countries like Nigeria lack academic competencies in all subjects. The present and the previous studies' findings by Refs. [33,45] match each other because both addressed the importance of delegating school heads' classroom observation to teachers at the workplace.

5.3. Supervisory feedback

The study found that school heads must ensure teachers receive individual feedback. It was customary for school heads to offer

group feedback to teachers at the workplace. Based on teachers' measures, when each teacher receives particular teaching and learning feedback, it quickly helps a teacher respond to the school head's advice. Concerns about understanding specific issues and being responsible and accountable for such feedback exist; therefore, one-on-one feedback is a factor in developing teachers' professional identity, such as confidence relative to teaching and learning efficiency, and teachers will feel appreciated in their work. Commenting on the issue of one-to-one teacher feedback [10,144], in their studies on clinical supervision suggest that school heads' supervisory feedback must be specific and focus on the needs of an individual teacher. This study's findings imply that personal feedback for teachers is crucial as a critical factor in teachers' professional identity development. Even though the present and previous studies spotlight individual feedback, they differ in impacting teaching professional identity among teachers. As [43] argue, school heads' teaching-learning feedback to teachers improves teachers' teaching-learning efficiency.

The study found that school heads must provide feedback that responds to lesson needs. The finding suggests that school heads are not reacting positively to teachers' requests for the required teaching and learning resources. A lack of lesson resources would enforce the same shortfalls in teachers' professional undertaking, making feedback insignificant to teachers. Therefore, feedback that helps teachers to have teaching and learning requirements can develop teachers' professional identities, such as practising teaching professionally [68]. argues that teachers' responses to available educational resources contribute to teachers' professional identity development. Concurrently [10,43], and [144] opine that school heads should respond to the teachers' professional requirements. [144], for example, specifies that clinical supervision feedback must be frequent, timely, consistent, specific, and focused on the needs of teachers. The study findings demonstrate that for teachers to develop a professional teaching identity, teaching and learning materials are highly required in secondary schools in Tanzania.

5.4. Professional support

The study found that teachers received academic professional support from school heads and delegates, such as heads of subject departments and internal school quality assurance. It was suggested that school heads must continue with present practices as ongoing academic mentorship. These informants believed that teachers would learn to become confident as facilitators of in-house training. [38]comment on similar issues and argue that teachers should be professionally assisted by teachers' professional learning needs and be on target under the expected goals. This support would enable teachers to develop critical and creative thinking toward their profession.

The study found that school heads must plan and conduct long-term in-house training on the competence-based curriculum. The measure is expected to make teachers feel their professional skills and image preserved. The study findings are consistent with prior studies like [38,142], which address that teachers' professional support should be mainly cultivated to teachers' professional needs to impart teaching professional image in teachers. The study found that school heads must conduct regular teacher-learning programmes through workshops and seminars. This measure is a factor in developing teachers' professional identity, such as professional values, professional efficacy, and professional commitments. A study by Ref. [142] add that school heads should organise teaching professional development programmes for teachers' professional competencies from time to time. Furthermore, academic professional development for teachers should be held regularly.

5.5. Post - observation

The study found that school heads should continue with the current procedure of post-observation supervision. The findings imply that school heads actively conduct teaching and learning post-observation at the workplace, and such practice influences teachers' professional identity development. Some of the noted indicators of teachers' professional identities are learning to maintain professional love among and between school heads and students, the art of performing teaching with professional ethics, supporting each other, and putting the student's interests forward. This observation is supported by Refs. [16,38], and [145], whose studies found that as a result of school heads' post-observation, teachers were found more committed to improving their professional duties. Present and past findings imply that post-observation under school heads would improve teachers' delivery of subject knowledge to students at the workplace. Therefore, post-observation can potentially allow teachers to develop a professional teaching identity.

The study found that school heads' post-observation should consistently ensure the teacher meets their subject's needs. The findings indicate that deploying teaching and learning resources among teachers is highly considered for post-observation to work better in developing teaching professional identities among teachers. When school heads observe the measure, teachers are expected to develop teaching professional identities such as commitment to practise teaching creatively, ensuring each student is learning, and confidently teaching as per the competence-based curriculum. These findings concur with [43,44] that school heads should perform post-observation for teachers to improve teaching and learning instructions. [15] argue that post-observation brings teachers and school heads to discuss classroom activities and develop action plans for improvement in detail. Therefore, post-observation should support teachers' demand for enough teaching resources, enabling teachers to undertake teaching and learning activities professionally.

6. Implications and suggestions of the study

The study explored the opinions of school heads and teachers on measures for better school heads' clinical supervision practices on developing predictive indicators of teachers' professional identity in Tanzanian public secondary schools. The study findings may help school supervision authorities to understand the measures required for modifying clinical supervision practices that promote the

development of teachers' professional identity. School heads and teachers understand that clinical supervision is a shared responsibility that strengthens the quality of teachers' professional identity development. Most activities in reviewing professional documents and classroom observation are under school heads and internal quality assurance. It is therefore suggested that the school supervision authority may re-design school-based supervision approaches wherein the roles of school heads in clinical supervision and internal school quality assurance teams are to be bounded. The practice is expected to resolve multiple supervisory decisions between and among school heads and internal school quality assurance members.

7. Limitations and future studies

This study adopted a multiple case study design in exploring opinions of school heads and teachers on measures for better school heads' clinical supervision practices that could develop predictive indicators of teachers' professional identity development in Tanzanian public secondary schools. As the study was conducted in one region with four schools, this was a small area to claim findings generalisation at the national level. Future research may continue exploring the influence of clinical supervision on teachers' professional identity development to maintain the quality of teachers' professional identity and the influence of school heads' clinical supervision on teachers' personality and socio-professional competencies. Such investigations would confirm the effects of clinical supervision in developing teachers' professional identity.

8. Conclusions

The study concludes that clinical supervision under school heads should be modified. Such modification includes transforming the teaching profession's paperwork (documents) into digital generations, such as an online system, and transferring school heads' duties, such as classroom observation and academic professional support to school delegates, such as an internal quality assurance team. If the modification gets initiated by school heads, it is entrusted with influencing the development of teachers' professional identity in Tanzania public secondary schools.

Additional information

No additional information is available for this research article.

CRediT authorship contribution statement

Linus Chaula: Conceptualization, Data curation, Investigation, Methodology, Writing – original draft.

Declaration of competing interest

The Author declares that there is no conflict of interest concerning the research, authorships, and publication of this research article.

Abbreviations

FGDs   Focus Group Discussions

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