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Secondary School Teachers Concern Regarding the Adoption of Competence-Based Assessment

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Abstract

Tanzania introduced Competence-Based Assessment in the early 2000s alongside its Competence-Based Curriculum as an innovative approach to evaluate students' learning. This study, informed by the Concern-Based Adoption Model, investigated secondary school teachers' concerns on adopting this assessment approach. The Stage of Concern Questionnaire and its Quick Scoring Device were used to collect and analyze, respectively, data from 30 teachers in eight purposively selected schools, with equal representation from high-performing and low-performing secondary schools. Teachers from both school categories had positive perceptions on the effectiveness of this assessment approach, but they lacked detailed information and doubted their ability to implement it. Comparatively, teachers from low-performing schools expressed somewhat intense concerns at all levels compared to their counterparts and thought to implement this innovation in ways different from those recommended by designers in Tanzania. Access to professional development and teaching experience variations contributed to these differences. The findings call for targeted interventions.

Introduction

Amid global concerns over graduates' capabilities, governments worldwide have been attempting to reform curricula. Competence-Based Education (CBE), according to Allen (2021) emerged as a leading educational change for its ability to offer integrated and flexible learning. Distinguished from traditional Knowledge-Based Education (KBE), CBE prioritizes critical thinking and practical application (Bista & Abadie, 2018; Allen, 2021). This paradigm shift acknowledges that mere subject understanding, prevalent in KBE, falls short in equipping learners with the versatility needed in today's dynamic world.

Central to this educational evolution is the transformation in assessment practices. The transition from KBE to CBE necessitated a re-evaluation of assessment methodologies. Traditional KBE assessments, cantered on rote memorization and theoretical comprehension, appeared to be ill-suited for evaluating competencies emphasized by CBE (Allen, 2021; Ngwancho, 2019). It is based on these grounds that Competence-Based Assessment (CBA) method emerged as a tailored approach aligned with the principles of CBE. Academics (e.g., Allen, 2021; Rogers, 2021; Wong, 2020) agree that CBA is useful for evaluating learners' ability to apply knowledge effectively and

demonstrate relevant competencies in real-world scenarios. As such, any shift to CBE demands innovative assessment strategies capable of measuring more accurately the multifaceted skills and abilities nurtured within a CBE framework.

Over many years, a substantial amount of research results on change processes (e.g., Makwinya et al., 2022; Hollingshead, 2009; Ismail et al., 2024) has aligned consistently with leading educational change theorists (Fullan, 2015; Fuller, 1969; Hall & Hord, 2020), emphasizing that regardless of how promising a new initiative may be or how much support it garners, educational change inevitably raises concerns among those responsible for implementing it. These concerns often arise from personal uncertainties about the implications of the change, its effects on existing practices, and the expectations it places on them (Makwinya et al., 2022; Bista & Abadie, 2018; Fullan, 2015; Hall & Hord, 2020). These concerns can manifest as resistance, anxiety, or skepticism, due to fear of the unknown and potential disruptions to established routines. Addressing these concerns is crucial for successful change implementation (Bista & Abadie, 2018). Given that CBE and its assessment framework (i.e., CBA) originated in more developed Western countries, their adoption in resource-limited settings, such as in Sub-Saharan African countries, may have raised intense concerns among individuals responsible for implementing them. This study investigated key concerns of secondary school teachers' working in a non-Western and resource-limited context in implementing this innovative assessment framework.

The Study Context and Purpose

The transition to Competence-Based Assessment (CBA) in Tanzania began in the early 2000s in line with the shift from Knowledge-Based Education (KBE) to Competence-Based Education (CBE) (Makwinya et al., 2022). Like the rest of the world, this change was driven by a recognition that traditional KBE, which focused on memorizing facts and theoretical understanding, was inadequate for preparing students for the practical demands of the modern world. Initially, the government of the United Republic of Tanzania revised the national secondary education curriculum to reflect the principles of CBE, integrating competencies that students needed to acquire at various educational levels (Ishemo, 2021; Kigwilu & Mokoro, 2022; Komba & Kira, 2013). Currently, all subject syllabuses emphasize the use of performance-based assessments, particularly projects, observations, interviews (oral assessments), scenario-based assessments (both written and involving hands-on activities in contrived and real settings), and portfolios to allow for a more holistic evaluation of students' learning (Ishemo, 2021; TIE, 2014). This curriculum overhaul was a foundational step in ensuring that assessment practices aligned with the new educational goals.

To fuel this transition, the government of the united republic of Tanzania implemented various initiatives. Key policy documents, including the Education and Training Policy of 2014 and subsequent revisions, underscored the importance of shifting towards a CBE framework, emphasizing the need for an education system that equips students with relevant skills for the 21st century. Additionally, the government invested in developing and distributing new assessment tools and resources tailored to CBA. For example, it developed guidelines and manuals to assist teachers in designing assessments that measure students' competencies rather than their ability to memorize information (NECTA, 2019; TIE, 2014). Further efforts included the provision of learning materials

that support competency-based learning and assessment.

To enhance teachers' understanding and competence in dealing with CBA, the government integrated CBA into teacher education curricula. This initiative aimed to ensure that new teachers entering the work force are well-versed in the principles and practices of CBE and CBA. For the in-service secondary school teachers, the government implemented extensive professional development programs to train them in (Kafyulilo et al., 2013; Moshi, 2015). Workshops, seminars, and continuous in-service training sessions were organized nationwide to enhance teachers' understanding and skills on developing CBA tools, aligning with the competencies outlined in the curriculum. Generally, these collective efforts aimed to ensure a smooth transition and foster an educational environment where practical skills and competencies are prioritized, preparing students to meet the challenges of a rapidly evolving world.

Despite concerted efforts, indicators point to unsatisfactory adoption rates of CBA in Tanzania (Ismail et al., 2024; Komba & Kira, 2013). Such a disappointing reports may be the reason for poor examination results trends (NECTA, 2024), suggesting that many students are still struggling to perform well on questions structured under the CBA philosophy. This situation implies a misalignment between the new assessment format and students' preparedness for it, indicative of teachers' continued reliance on traditional assessment methods emphasizing memorization rather than practical application and critical thinking in their classrooms. In fact, previous reports (e.g., Juma & Patel, 2024; Kigwilu & Mokoro, 2022; Komba & Kira, 2013; Nsengimana et al., 2024) indicate intense inability to implement CBE by the majority of teachers. Coupled with the resource issue claimed to be the reason (Munoz & Araya, 2017; Nsengimana et al., 2024), many teachers may have poor understanding of this assessment framework.

This possibility considers the recent report by Nzima (2016) who indicated poor teachers' conception of the CBE upon which the CBA framework is grounded. Collectively, these issues highlight the ongoing struggle to fully integrate CBA in the schooling system of Tanzania, underscoring the need for revealing teachers' key concerns in dealing with this innovative assessment framework. This study addresses this gap. Understanding secondary-school teachers' concerns in dealing with the CBA appears to be vital for planning targeted intervention. The questions that guided the investigation were:

- What are the public secondary school teachers' key concerns in implementing CBA practices in Tanzania?
- Are there disparities in the types and intensities of CBA concerns between teachers in high-performing and low-performing public secondary schools in Tanzania?

Literature Underpinnings

The Meaning of CBA

CBA has gained significant traction for its ability to assess holistically students' learning experiences. Competency-Based Assessment is a methodical approach that evaluates individuals based on their demonstrated skills, behaviors, and knowledge relevant to their roles. Unlike traditional methods that focus solely on

qualifications, CBE places a spotlight on how well an individual can apply their skills, knowledge and skills to address real-world situations (Allen, 2021; Figa et al., 2020; Ismail et al., 2024). As an approach to evaluating an individual's ability to perform specific tasks and roles effectively, CBA emphasizes practical skills over theoretical knowledge (Wong, 2020). CBA is aligned perfectly, therefore, with a CBE, where the learning outcomes are predefined, and assessments are designed to ensure that students achieve these outcomes (Figa et al., 2020). As CBE distinguishes learners who are just knowledgeable from those who are knowledgeable and capable of demonstrating their competence in real-life scenarios, it stands to be the best way to ascertain learners' possession of the currently demanded competencies. On these grounds, CBA is widely used globally in vocational education and increasingly in general education systems that emphasize skills development over rote learning.

CBA is grounded on least six core principles. These include authenticity, criterion-referencing, transparency, and formative feedback, flexibility and holistic (Allen, 2021; Munoz & Araya, 2017; Wong, 2020). Authenticity ensures that assessments reflect real-life tasks, enhancing their relevance and applicability. These principal mandates that tasks are aligned with professional standards and real-world challenges. Criterion-referencing involves comparing a learner's performance against predefined standards rather than against other learners, fostering a clear understanding of expectations and reducing competition.

Transparency in CBA means that the criteria and processes are openly communicated to learners, enabling them to understand how their competence will be evaluated (Allen, 2021; Wong, 2020). Formative feedback is integral, providing learners with constructive insights that guide their development and improvement over time (Munoz & Araya, 2017). These descriptions imply that CBA ascertains that learners have not only acquire theoretical knowledge, but also are able to perform tasks effectively in real-world contexts, which is crucial for both personal and professional development.

Importance of CBA

Competence-Based Assessment (CBA) plays a pivotal role in education by bridging the gap between theoretical knowledge and practical application. Komba and Kira (2013) highlight how new curricula effectively address the limitations of the old content-based approach, ensuring graduates are better prepared for the demands of the workforce and society. Unlike traditional methods that place more emphasis on memorization, CBA prioritizes demonstration of skills relevant to real-world scenarios, enhancing learners' readiness for employment (Allen, 2021).

A primary advantage of CBA is its alignment with 21st century skills, allowing teachers to adapt curricula to meet evolving professional demands and ensure graduates' employability. Furthermore, CBA fosters lifelong learning and continual improvement by emphasizing ongoing feedback and reflection (Al-Furaih et al., 2020; Allen, 2021). Learners actively engage in their development, mastering current competencies while refining a mind-set of continuous growth. Therefore, integrating CBA into schooling systems enables education institutions to produce competent, adaptable, and innovative individuals prepared to tackle contemporary challenges.

CBA Methods and Principles

The delivery of competency-based assessment is all about collecting the right evidence. Competency based assessment tools offer structured and standardized ways to evaluate an individual's skills and abilities. However, the method of competency assessment may vary depending on the context, nature of the role, and specific competencies assessed. What matters the most is to ensure that the choice of method aligns with the overall goal of CBA. As such, performance-based assessments based on simulations or real-world tasks are its cornerstone (Al-Furaih et al., 2020; Ishemo, 2021).

Observation stands out as a primary technique of assessing competencies of a learners for roles that demand hands-on skills (Allen, 2021; Wong, 2020). Observing a candidate in real scenarios or contrived (near-to-the reality) settings such as simulations allow teachers to evaluate not only what students know and say, but also how well they can apply the knowledge they developed in meaningful ways. Portfolios serve as alternative tool for learners to gather evidence of their skills and progress over time, comprising reflective essays, project reports, and recorded presentations (Apau, 2021). As portfolios allows learners to compile and showcase their work and achievements, they provide tangible evidence of competencies and achievements. Ishemo (2021) and Munoz and Araya (2017) outline additional CBA methods useful for assessing learners' competences, including peer reflection (i.e., gathering feedback from various sources—supervisors, peers, and subordinates), presentations, projects, and interviews. These tools are, therefore, preferred because they collectively enhance assessment validity, reliability, and authenticity.

Transparency is amongst the key principles of CBA. Leaners need to know the critical competencies against which their skills are being compared (Allen, 2021). The assessor needs to be transparent about the process and allow learners to know what is expected during and after the assessment (Allen, 2021; Munoz & Araya, 2017). To ensure transparency, two things are needed. First, whether this evidence is submitted by the learner or observed by the assessor, there should be develop a checklist to clarify what the assessor shall be looking for (Munoz & Araya, 2017). Second, feedback, according to Wong (2020), should prevail the entire CBA process. While feedback is generally important in any schooling processes, it becomes a more important resource during and after implementing a CBA. Learners need to be constantly communicated about the gaps to help them rectify them. That is to say, without the right feedback, any CBA process, despite how well designed, won't lead to the right results.

The CBA General Adoption Trend

The global trend towards adopting Competence-Based Assessment (CBA) in education systems encompasses both resource-rich and resource-scarce countries, albeit with varying degrees of success. In resource-rich countries in Europe and the United States, CBA has gained significant acceptance and integration both in vocational education and training (VET) and general education programs. These countries emphasize practical skills and real- world applications, aligning educational outcomes with the labor market demands (Rogers, 2021; Wong, 2020). Consequently, students are currently better prepared for professional environments, enhancing their employability

and addressing contemporary workforce needs. In contrast, although resource-scarce countries like in the Sab Saharan context are gradually transitioning to CBA, the degree of adoption is not satisfying (Al-Furaih et al., 2020; Juma & Patel 2024).

The gap in CBA adoption between developed and developing countries is influenced by several factors. First, diffusion process. In developing countries, CBA has been introduced without providing teachers with sufficient information and training on its core principles (Kigwilu & Mokoro, 2022). Consequently, many teachers have poor understanding of this assessment framework (Kigwilu & Mokoro, 2022; Moshi, 2015). This concern is not surprising, given that many educational innovations in these countries are introduced through the Train the Trainer (ToT) approach (Nzima, 2016), which is often ineffective in conveying the intended messages to the end users. Such shortcomings in professional development continue to impact teachers' ability to design and implement CBA effectively. Where diffusion processes have been effective, poor adoption of many educational innovations have been caused by the logistic issues such as the lack of adequate physical infrastructure and by the scarcity of materials and technology (Nsengimana et al., 2024; Smith & Jones, 2022). Given such situations, transitioning to CBA is likely daunting for teachers, especially those who have been using traditional assessment practices throughout their career. Therefore, addressing these issues is essential to overcoming barriers to teachers' adoption of CBA.

Theoretical Framework

This study was informed and guided by the Concern-Based Adoption Model (CBAM) (Hall & Hord, 2020). The name of this model and its related developments are grounded on the seminal work of Fuller (1969) who investigated pre-service teachers' concerns in relation to the teaching career. Concerns, according to Fuller (1969) imply thoughts and feelings that someone develops in relation to new ideas or practices, particularly those imposed by someone else. Following later developments in the 1970s and 1980s by a team of researchers at the Research and Development Center for Teacher Education at the University of Texas at Austin, the CBAM evolved as a prominent framework for understanding how individuals (teachers in this case) navigate educational reforms. The CBAM does so through its three components:

- The first component: measures the levels of use of new innovations;
- The second component: assesses the extent to which the implementation of an innovation reflects the designers' intent; and,
- The Third component: evaluates users' key concerns (types and intensities) when adopting new educational frameworks or ideas.

The third component is particularly relevant for this study. Building on Fuller's (1969) seminal work, the Stage of Concern (SoC) component identifies teachers' attitudes and beliefs towards the new schooling practice introduced, evolving from self-related to task-related and finally to impact-related concerns. Initially, teachers experience self-consciousness due to discomfort with new demands. Task-related concerns focus on daily challenges like time constraints, lack of resources, and large class sizes (Hall & Hord, 2020). Impact-related concerns develop later, concentrating on student success (Hall & Hord, 2020). As shown in Table 1, CBAM

categorizes these concerns into seven stages, offering insights into their hypothetical evolution as individuals deal with new educational ideas and practices. Although the Concerns-Based Adoption Model (CBAM) has been widely used to understand individuals' concerns regarding educational change, it has faced significant criticism. Researchers (e.g., Anderson, 1997; Cheung et al., 2001) have long questioned its reliability and validity since its inception. In response to such critiques, CBAM was revised in 2006 to enhance its accuracy. As such, the CBAM has continued to be trusted as a reliable instrument until very recent (e.g., by Amankwah et al., 2022; Makwinya et al., 2022; Zhao, 2024) as a structured tool for identifying the readiness and concerns of those adopting innovations. For these reasons, this study employed this instrument.

Table 1. The Seven Stages of Concern

Stage of Concern	What it refers to	Typical statement
0. Unconcerned	Individuals in this stage are not aware of the innovation and show little to no interest in it.	*I might have heard something about it, but I'm currently too occupied with other priorities to focus on it right now.*
1. Informational	Individuals seek more information about the innovation to understand its purpose and potential impact	*Can you tell me more about this new program and what it aims to achieve?*
2. Personal	Concerns shift to how the innovation will affect the individual personally, including workload, skills, and efficacy.	*How will this new method impact my daily tasks and responsibilities?*
3. Management	Concerns focus on logistical issues such as time, resources, and support needed for implementation	*Do we have enough resources and time to implement this effectively?*
4. Consequence	Individuals consider the effects of the innovation on students and the broader educational system.	*How will this change benefit our students and improve learning outcomes?*
5. Collaboration	Concerns revolve around working with others to implement and sustain the innovation effectively	*How can we collaborate to ensure this initiative is successful?*
6. Refocusing	Concerns revolve introducing some adjustments to improve learning outcomes	*I think I need to introduce this adjustment to better improve outcomes of this innovation.*

Source: Adapted and Modifies from Hall & Hord,2020

Method

Research Design and Approach

Guided by the CBAM framework, the research primarily utilized quantitative methods. This decision enabled a structured evaluation of the types and levels of particular concerns among teachers. Additionally, the study gathered background data to facilitate a deeper understanding of the factors that likely influencing teachers' concerns and their experiences with Competency-Based Assessment (CBA). This design allowed for a thorough examination of the existing challenges and efforts made by teachers in embracing CBA. Consequently, the

approach facilitated a detailed exploration of teachers' encounters and apprehensions regarding the implementation of CBA.

Study Participants

The study was mindful that teachers' concerns about implementing new innovations vary based on their work contexts. Therefore, we examined teachers' concerns about the CBA implementation in their specific environments. To understand how school realities influence these concerns, we compared science teachers from eight purposefully selected schools in Morogoro Municipality: four higher performing and four low performing schools. Morogoro Municipality was chosen for its diverse educational institutions, including government-owned secondary schools with varying achievement levels. Based on grade twelve National Examination (CSEE) results from 2021 to 2023 (NECTA, 2024), the top four higher performing schools (HPS) and four low performing schools (LPS) were identified for comparison.

Both purposeful and snowball sampling were then used to select four teachers at each of the eight school, with criteria including at least five years of teaching experience at their current school. This experience was deemed sufficient for a teacher to have interacted with this innovation. By selecting teachers from both higher and low performing schools, the study captures a broad range of experiences and perspectives. The centrally managed Tanzanian curriculum ensures the study's findings are illustrative of broader trends. That is to say, number of schools and teachers was not a priority at this exploratory stage. The key focus was on gaining a general understanding, aligning with Yin's (2014) emphasis on the potential of selected cases for portraying a situation. This exploratory study aims to inform a future country-wide investigation, as suggested by (Cohen et al. 2018).

Data Collection and Analysis

The standard Stage of Concern Questionnaire (SoCQ) developed by George, Hall and Stiegelbauer (2013) was selected for its proven reliability and validity in evaluating teachers' concerns about CBA, providing standardized data collection and insights into their acceptance and implementation of CBA. During a 15-day field visit in March 2024, teachers at each school completed the SoCQ at their own pace, ensuring comprehensive data collection and minimizing logistical challenges. Initially, individual concern profiles were analyzed using the scoring device developed by Hall & Hord (2020). Raw scores from the 35 SoCQ items were grouped into the seven scales, each representing a Stage of Concern. These raw scores were then summed to produce a scale score, from which a relative percentage intensity score was extracted. To understand school-level group concerns, the group value for each Stage of Concern was determined by averaging the concern intensity of all teachers at each stage. The same procedure was finally carried out for each school category (see Table 2), which was then presented in a single figure (Figure 1 and Figure 2). This allowed for comparisons of concern intensities and profile trends among teachers in the four investigated schools. The levels of concern for both low and higher performing schools were determined by averaging the individual data of all teachers in each category, creating profiles with average scores for each stage of concern within the group. These were similarly plotted in one figure (Figure 3) to examine differences and similarities based on the profiles' shapes, trends, and intensity of concerns.

Table 2. Average Concern Intensities for Teachers in Individual School

		Stages of Concern						
		Unconcerned	**Informational**	**Personal**	**Management**	**Consequence**	**Collaboration**	**Refocusing**
HPS	**A**	84.75	76.92	75.5	68.75	41.83	59	65.5
	B	89.6	83	78	52.6	58.5	77	64.8
	C	90.8	64.8	63.8	64.4	40.2	52.7	58.8
	D	71.8	87.4	79.9	47.2	49.8	79	73.6
	Mean	84.2	78.0	74.3	58.2	47.4	66.9	65.7
LPS	**E**	68.8	82.5	78.2	54.1	52.3	66.4	64.1
	F	89.8	81.3	71.1	58.8	37	71.1	73.4
	G	97.3	74.4	71.3	72.6	26.6	41.1	60.2
	H	88.4	92.2	88.3	65.5	62.2	78.8	87.3
	Mean	86.1	82.6	77.2	62.8	59.4	64.4	71.3

Source: Field Visit 2024; KEY: A, B, C, D, E, F, G and H=individual schools investigated; Mean=Average concern intensity of four schools of each SoC; HPS= High Performing Schools; LPS= Low Performing Schools

Guided by George et al., (2013), the interpreting the SoC profile involved a multi- step process. The most intense concern, indicated by the peak magnitude, identifies the primary issue for the individual. The second most intense concern and its relationship to the primary concern offered additional insights. During analysis, the first and second highest stages of concern were examined for patterns, alongside the lowest stage, to provide deeper insights into group dynamics (George et al., 2013). Additional analysis of the findings was based on the graph trends (Makwinya et al., 2022), which helped to understand and compare teachers' developments in dealing with the CBA within and across the two school categories.

Ethical Considerations

The research obtained approval from relevant institutional bodies to safeguard participants' rights, well-being, and dignity. At first, the study secured research ethical clearance of the Sokoine University of Agriculture. Then, the study sought for the permission of two relevant authorities before proceeding with data collection in the field. These were the: (i) President's Office Regional Administration and Local Government, and (ii) Morogoro Municipal authority. Before participation in the study, the intended participant teachers received comprehensive explanations about the study's objectives and measures to assure their confidentiality. Then, the participants were requested to participate freely by signing a consent form. As per opinions of Cohen et al. (2018), these measures fostered trust and honesty of the data collected.

Results and Discussion

The response rate for the participants in the study was approximately 93.75%, calculated based on 30 respondents who completed and returned the Stage of Concern Questionnaire (SoCQ) out of a total of 32 participants. The two respondents did not complete and return the SoCQ. They may have lacked interest or motivation, faced time constraints due to other personal commitments, forgot to finish it, or could have misplaced the questionnaire.

However, the return rate of SoCQ was satisfactory per study intention.

Demographic Information of Study Participants

The demographic data of teachers involved in the study had significant differences in teaching experience between teachers from higher performing schools (HPS) and low performing schools (LPS). Teachers from HPS generally had more experience, with 73.3% having 11 to 30 years of teaching experience, while in LPS, 73.3% of the teachers had only 1 to 20 years of experience. Additionally, 53.3% of teachers from HPS received professional development training for this innovation, compared to only 33.3% from LPS. This suggests that the varying levels of concern regarding CBA implementation between the two school categories might be influenced by these differences in teaching experience and access to professional development.

Table 3. Participants' Demographic Information

Demography		HPS		LPS	
		f	%	*f*	%
Teaching	1-10	3	20.0	8	53.3
experience(years)	11-20	8	53.3	3	20.0
	21-30	3	20.0	3	20.0
	31 and above	1	06.7	1	06.7
Professional	YES	08	53.3	05	33.3
Development	NO	07	46.7	10	66.7

Source: Field Visit 2024

Teachers Concerns Regarding CBA in the HPS Category

As indicated on Figure 1, teachers in the HPS category had no doubts about the positive impact of using CBA for educational effectiveness.

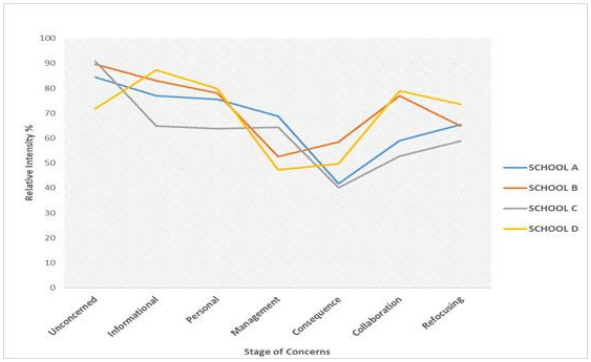

Figure 1. Concern Profiles of Teachers in the Four HPS

More encouragingly, teachers in these schools seemed satisfied with the logistical aspects. What appears to be worrying, however, is their combination of concerns at Stage 1(Informational), Stage 2 (Personal), and Stage 6

(Refocusing). Their lack of information about the CBA approach and self-doubt regarding their abilities to implement it, combined with a rising concern at the refocusing stage, suggest that they are considering alternative ways to implement the required assessment practice. This tendency is worrying as it could lead to deviations from the intended practice. Another noteworthy point is the similarity in the teachers' concern profiles across the four schools (A, B, C, D), with only slight variations. Except for Stage 6 (Refocusing), all schools in the HPS category displayed the same wave-like pattern in their profiles, indicating a uniform development in dealing with this assessment practice.

The intense concerns observed at stage 1 (Informational) and stage 2 (Personal) likely stemmed from teachers limited professional development and moderate experience levels. Of 15 teachers who participated in the study from the HPS category, only eight (8) attended professional training on CBA implementation. This assumption is further supported by data from schools D and B. In these schools, only three teachers (one from school D and two from school B) had the opportunity to attend special training on CBA implementation. Likely, this is why teachers in these schools exhibited more intense Stage 1 (Informational) concerns compared to their counterparts in schools A and C where a higher number of teachers received this training. Similarly, the moderate experience levels of most teachers in school B and D (who had a teaching experience of 11 to 20 years) may account for their higher Stage 2 (Personal) concerns. The combined influence of experience and training is particularly clear when examining the profile of school C. Of the three teachers from this school who participated in the study, two had received training on CBA and had 11-20 years of teaching experience. Likely due to their considerable teaching experience and their familiarity with the CBA innovation, these teachers exhibited the lowest levels of intense concerns on average and actively sought to develop alternative implementation procedures.

Existing literature supports these findings, showing that well-trained teachers are more aware of the benefits of innovative assessment practices and feel more confident in implementing them. This is not surprising given the prevalent issue of insufficient information about similar innovations in developing countries. A similar observation is provided by Makwinya et al., (2022) regarding teachers' concerns about the Competence-Based Curriculum, a sister innovation. These results underscore the need for thorough training and support, as emphasized by Hall and Hord (2020). By addressing both informational and personal concerns, teachers can more effectively enhance their students' learning outcomes.

Teachers Concerns Regarding CBA in the LPS Category

Like in the HPS, Figure 2 indicates that teachers in the LPS category were not very interested in the innovation and expressed high intense Stage 1 (Informational) and Stage 2 (Personal) concerns, and those in three of the four schools attempted to adjust the standard implementation. Given that their doubt regarding effectiveness of this innovation is low (as indicated by Stage 4—Consequence concern), the high Stage 1 and 2 concerns indicate that their interest in getting more detailed knowledge regarding this innovation and more training to implement it as required. Yet teachers in three of the four LPS (i.e., in school G, H and F) appeared to have alternative idea on how to better implement CBA. This tendency is worrying considering the intense lack of information and personal doubts in abilities.

Teachers' attempts to introduce other implementation ideas may be impacted by the lack of professional training on this innovative assessment practice. This can be illustrated by the situations in schools H and G, which had a higher number of teachers without professional training. Specifically, 40.4% of the 66.7% of teachers who missed the training in this school category were from school H, and 20.3% of them were from school F. Likely, this situation is what influenced teachers in these two schools to exhibit higher levels of refocusing concern, as shown by the tailing up of Stage 6 (Refocusing) concerns. The refocusing concern demonstrated by teachers in school G is likely influenced by their experience in the teaching profession rather than the lack of professional training. This interpretation is grounded on the fact that two of the four teachers in this school had a teaching experience ranging from 21 to 30, one had a teaching experience of above 30 years, and only one had a teaching experience of 1 to 10 years.

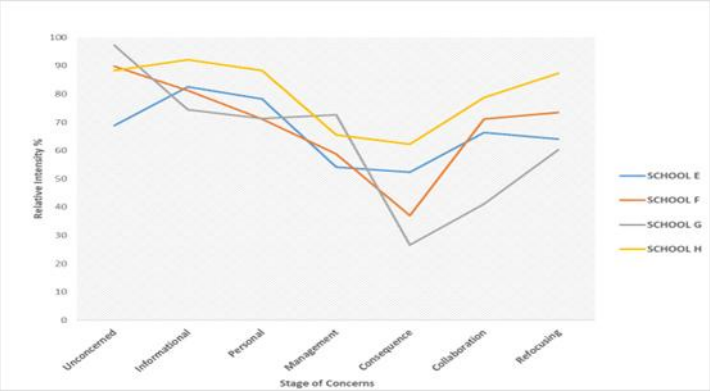

Figure 2. Concern Profiles of Teachers in the Four LPS

These findings, consistent with existing literature. Their need for additional information and uncertainty about their ability to implement the innovation effectively mirror the issues highlighted by Hall & Hord (2020). This supports studies that stress the need for thorough training and continuous support to address teachers' concerns and enhance implementation success (Rogers, 2021). The lower level of concern at Stage 4 (Consequence) suggests their trust in CBA's potential benefits, despite initial doubts and challenges. This aligns with research indicating that as teachers experience increase, their confidence in adopting new educational practices generally grows (Dele-Ajayi, 2021).

Comparing Teachers' Concerns between HPS and LPS Category

The average of teachers' concerns in each school category as indicated in Table 2 were plotted on a graph to develop a single concern profile for each school category (see Figure 3). Both Table 2 and Figure 3 were used to compare the profiles trends and concern intensity of teachers in the two school categories. Generally, teachers in both school categories exhibited a somewhat uniform distribution of concerns, with relatively lower standard deviations across the seven stages, suggesting a more consistent response and reaction to the introduced assessment reform.

The profile trends were identical in the two school categories, with a slight difference in the high refocusing

concern for the LPS. The tailing up of refocusing concern of teachers in the LPS category indicated that teachers in this school category attempted to alter the implementation of the CBA compared to those in the HPS. This tendency is worrying considering the fact that most teachers (53.3%) in this school had the lowest experience in teaching (1-10 years) and that most of them (66.7%) did not receive any special in-service training regarding the implementation of this innovative assessment practice. It is further worrying considering that the logistical aspect was somewhat not friendly (i.e., higher Stage 3 concern intensity) in this school category compared to the HPS.

Figure 3. Teachers' Concern Profile in the HPS and LPS Categories

The mean scores for HPS across the seven Stages of Concern are generally lower compared to those in LPS, except for the consequence issue, where the mean is slightly higher for the HPS. This finding suggests that teachers in the HPS were somewhat less anxious about this innovation compared to their counterparts in the LPS. Perhaps more importantly, despite having high early concerns regarding the CBA, teachers in the HPS did not indicate worrying signs of introducing alternative implementation practices as indicated by the tailing down of the refocusing concerns from Stage 5. However, their belief on the CBA effectiveness was somewhat low compared to their counterparts in the LPS.

This interpretation aligns with broader research indicating that comprehensive professional development and ongoing support are crucial for overcoming barriers to implementing new educational practices (Al-Furaih et al., 2020; Makwinya et al., 2022). Ensuring equitable access to professional development and addressing informational and personal barriers can enhance the adoption and effectiveness of CBA across all schools, ultimately benefiting student learning outcomes.

Conclusion, Implication and Recommendations

Drawing on the results, teachers in both school categories had intense concerns about information regarding the CBA innovation, and personal doubts in their abilities to deal with it. Concerns about logistics (e.g., time and resources) to support the adoption of this innovation appeared to be somehow intense in both school categories. What seemed interesting, however, is their desire to learn more about this innovation with and from colleagues.

If this tendency is cherished, personal concerns of teachers in both school categories could be addressed. Generally, it is not surprising that participant teachers in the investigated schools exhibited concerns about CBA. They mirror feelings reported by Juma and Patel (2024) in Tanzania and by Smith and Jones (2022) in resource-scarce countries.

In comparison, teachers in the LPS generally expressed greater intense concerns regarding the implementation of CBA than those in the HPS, and they considered using alternative techniques (beyond those suggested by the Tanzanian government) to enact this assessment approach in their schools. Eagerness of teachers in the LPS to learn more about this innovation in collaboration with their colleagues is, however, a positive tendency. If this inclination is nurtured, it might mitigate the risk of shifting focus away from the intended impacts of CBA, as guidance by the very experienced colleagues are more likely leading to adaptations aligned with the framework's goals.

Contexts of the two school categories (in terms of resources availability and location from the town center), access to professional development opportunities, and teachers' teaching experience had potential contribution to the types and intensities of concerns demonstrated. The ill-resourced contexts of the LPS likely influenced teachers to think about alternative ways of dealing with the mandated assessment practice. Moreover, the limited teaching experience of many teachers in these schools may have contributed to a lack of skills in managing changes, resulting in increased anxiety about transitioning to the CBA practice. Having been located at the outskirts of the town where the data were collected might have contributed to teachers' deprivation of professional development opportunities and news about this assessment practices. These assumptions are borrowed from prominent change theorists (i.e., Fullan, 2015; Hall & Hord, 2020) who consistently demonstrate the influence of such factors on change adoption rates. In fact, these findings are not very surprising considering that the same observations are reported by Makwinya et al., (2022) regarding a sister innovation, that is, CBE.

These findings imply that the CBA is not well known to teachers and most of them doubt their ability to deal with it. Providing adequate levels of information to teachers is very paramount to address key concerns that a new innovation may prompt among users. It's important that teachers are provided with resources and professional development on different CBA methods and techniques of assessing student progress, and why they hold value to the current education system. Targeted communication is vital to keep them informed, skilled, and involved (Apau, 2021). By raising teachers' awareness and their understanding of the current assessment trends, their assessment implementation could be improved to reflect the CBA principles. The study, therefore, reinforces Makwinya et al., (2022) call for educational leaders and policymakers in Tanzania and similar settings to recognize the necessity of deep context-specific interventions, ensuring that teachers in all schools, regardless of their location, receive the crucial support needed for the successful adoption of this innovation.

Limitations

The data and results may be subject to several limitations. The concerns expressed by teachers might be due to localized issues specific to the individual schools within and at the outskirts of the town where the data were collected, which may not be applicable elsewhere. For instance, factors such as school internet connectivity and

distance from town centers could have influenced the extent to which teachers received information about the innovation, thereby affecting the nature and intensity of their concerns. The small sample size could have influenced the results, potentially distorting the findings due to outliers, as the reported intensity of concerns was based on an average of the feelings expressed by all participants in each school. This assumption may be pertinent, given that participants had varying levels of teaching experience and professional training related to CBA, which led to differences in the intensity of their concern.

Given these considerations, the findings should be interpreted with caution. Results might differ if more teachers from the involved schools were included, or if the study were conducted in other schools or regions. This suggests that the generalizability of the findings is limited. To better understand teachers' concerns regarding the CBA implementation, future research should involve a broader range of demographic factors, include more teachers, and cover a wider array of regions. Comparative studies across different regions could also provide valuable cross-cultural insights into the challenges of implementing such innovations.

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