

Industry competencies or wellbeing capabilities? Assessing a Kenyan case of CBET reform

Kent Schroeder, *PhD*

International Development Institute, Humber Polytechnic

Keywords

Agency, capabilities, competencies, learner-centred pedagogy, gender, poverty.

Article History

Received 10 Jan 2025

Received in revised form 2 Apr 2025

Accepted 23 Apr 2025

Available online 25 June 2025

 This article is published under a [Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International License \(CC BY-NC-ND 4.0\)](https://creativecommons.org/licenses/by-nc-nd/4.0/)

***Original Research Papers** are papers that report on original empirical research with a focus on teaching and learning. Papers may be qualitative or quantitative and include an Abstract, Introduction, Method, Results, Discussion, and Reference section, as well as any tables and/or figures.

Abstract

Technical and vocational education and training (TVET) is increasingly viewed as a development strategy in Africa. Yet TVET is also criticized for its human capital orientation focused primarily on market needs. Competency-based education and training (CBET), a TVET approach, has been further criticized for reducing students to mere instruments of value creation defined by the competencies required by industry. This study explores whether CBET can be reframed to incorporate a capability approach that better promotes wellbeing in Africa beyond industry competencies. The capability approach is a wellbeing framework that emphasizes expanding the agency and capabilities of people to choose the kinds of lives they find valuable. Incorporating a capability approach orientation into CBET would place fostering student agency and wellbeing capabilities as a central educational focus rather than just the needs of industry. Using the Most Significant Change method, the study assesses a case of CBET reform in Kenya for its potential to expand student agency and capabilities. The findings illustrate that the adoption of CBET's learner-centred pedagogy played a role in expanding student capabilities while also building industry-relevant competencies. Moreover, intentionally mainstreaming gender within CBET further expanded female agency and capabilities. Yet, this expansion of wellbeing is limited by the financial character of CBET and its interconnection to student poverty. Overall, the findings demonstrate that there is potential for CBET to move beyond a sole focus on human capital and embrace expanding student capabilities. Further investigation is needed, however, on whether other components of CBET beyond its pedagogy can promote capability expansion and how to effectively address the poverty barrier through broader policy support.

Introduction

Technical and vocational education and training (TVET) has historically been framed in human capital terms (Anderson, 2009; Powell & McGrath, 2019; Wedekind, 2014). This perspective theorizes a clear link between skills development and the needs of the economy. A central assumption is that the economy benefits from investing in people through education. Economic needs are the foundation for

TVET curricula that build industry-relevant competencies within students, making them more employable and leading to productive jobs that contribute to economic growth. The needs of employers and the economy are intended to drive the nature of TVET education.

This framing of TVET as a human capital strategy is questioned by some. Such framing is criticized as being too rigidly dependent on the assumption of rational individuals acting on narrow economic self-interest and ignoring broader structural issues, particularly in developing contexts (McGrath et al., 2020). TVET, in this critique, should address issues of poverty, gender equality and sustainability beyond just building employment competencies (Anderson, 2009; McGrath, 2012; Powell & McGrath, 2019; Vally & Motala, 2014). This focus, referred to as the developmentalist orientation to TVET in contrast to the productivist orientation of human capital theory, emphasizes TVET as a strategy that puts the wellbeing of students at the centre rather than just the human capital needs of the economy (Ngcwangu, 2019).

A growing developmentalist literature has recently emerged (see McGrath et al., 2020). One promising new avenue in this literature reframes TVET within the capability approach (McGrath, 2018; Ngcwangu, 2019; Powell & McGrath, 2014). The capability approach is a multidimensional model of wellbeing initially elaborated by Amartya Sen (1985; 1999) and Martha Nussbaum (2000; 2006). It starts from the premise that people should have the capabilities, or freedoms, to lead the kind of lives they have reason to value¹ (Sen, 1999). Capabilities are what people are able to be or do, including such things as the capability to be educated, live a healthy life and engage in political participation. Human wellbeing is promoted when people's capabilities are expanded. Moreover, the capability approach links the expansion of capabilities to reducing capability barriers (Sen, 1999). For example, expanding people's capability to access and complete education may also require reducing levels of poverty where such poverty acts as a barrier to educational access. The expansion of capabilities and reduction of barriers are central to the capability approach, both analytically and in practice.

1 The use of the terms 'capabilities' and 'freedoms' is at times confusing in the literature on the capability approach. The two are closely related: a capability is the freedom to achieve the things one values doing or being. See Alkire (2005, pp. 118-122) for a discussion of the relationship between the two concepts.

But why focus on capabilities rather than the actual outcomes, or functionings as they are termed in the capability approach, generated by such capabilities? Why not focus on being educated, for example, rather than having the capability to be educated? The capability approach focuses on capabilities rather than functionings as it is concerned with enhancing people's opportunities to make choices to achieve desired outcomes. The difference is subtle but critical. Someone who fasts voluntarily, for example, will achieve the same outcome of being hungry as someone who is starving due to a famine. Focusing on capabilities allows for understanding voluntary fasting as a choice made freely, unlike the case of famine-induced starvation; it allows for an individual to choose what they value in life rather than relying on an external imposition of what wellbeing should look like (Robeyns, 2006; Sen, 1999). The notion of making choices, or agency, is therefore central to the capability approach. Expanding agency enables one to make choices to employ the capabilities one has, leading to improved wellbeing.

The application of the capability approach to education has resulted in several sets of education-specific wellbeing capabilities being identified (Terzi, 2007; Walker, 2006). While these sets differ in their details, they broadly focus on capabilities related to what may be termed disciplinary knowledge, or knowledge associated with what is being studied, as well as process-related capabilities. Process-related capabilities focus on people's agency that contributes to individual autonomy. Agency is again viewed as critical as it moves beyond capabilities derived from specific disciplinary learning to the ability of students and graduates to make future choices on the kinds of lives they find valuable (Saito, 2003; Walker, 2006). Agency, in essence, allows students to engage their capabilities for future choices not just connected to a specific disciplinary area of study or post-graduation employment; it enables students and graduates to be "the authors of their own lives" more broadly (Lozano et al., 2012).

Reframing TVET through a capability orientation is viewed as a critical part of achieving the Sustainable Development Goals (SDGs), given their holistic and multidimensional wellbeing focus across economic, social, ecological and governance concerns (Legusov et al., 2021; Lei & Abidin, 2024). Less clearly understood, however, is whether a capability approach orientation might be infused into competency-based education and training (CBET), a specific

TVET strategy focused on employment-related competencies. This is particularly critical as CBET is increasingly implemented in many African contexts as an SDG-focused development strategy to address poverty and wellbeing.

Multiple studies document cases of the implementation of CBET in Africa (Gessler & Peters, 2020; Jwan, 2022; Kafyulilo et al., 2012; Zuva & Zuva, 2020). Yet a broader, theory-driven literature largely rejects the potential of CBET as a strategy that moves beyond a productivist focus on human capital, calling into question its broader wellbeing potential. CBET focuses on the acquisition and demonstration by students of specific, standardized competencies that characterize a particular job or workplace. These competencies are usually defined as part of a national qualifications framework developed through industry input. The CBET learning environment is a flexible one with a focus on student-centred learning (Gervais, 2016). Overall, the intent is to generate graduates with specific, industry-relevant competencies that increase economic productivity and competitiveness (Argüelles & Gonczi, 2000; Callan & Ashworth, 2004). This again firmly roots CBET in a human capital approach as industry-driven competencies define the nature of education. This has been criticized as reductionist and rigid (Chappell, 1996; Hyland, 1994). Moreover, the reduction of education to the demonstration of achieved competencies is criticized for lacking any human theory of learning, relying instead on performed behaviour (Preston, 2017). Perhaps most harshly, this reductionist approach is argued to make CBET, by definition, a TVET approach where students are turned into mere instruments of market-driven value creation, engaging in pre-determined interactions with the education and work worlds based on standardized competencies. Students, in this critique, are “caged by competence” (Preston, 2017).

A challenge therefore exists. TVET is broadly recognized in the literature as an education strategy with the potential to promote human wellbeing by incorporating a capability approach orientation. Practically, it is increasingly being implemented as an SDG-driven strategy in multiple African contexts. Yet CBET, which is the specific TVET strategy implemented in many of these contexts, is critiqued conceptually as an education model entirely constrained in its focus on industry-based competencies. The competency cage, in this conceptual critique, would seem to rule out broader agency and capability expansion as a wellbeing component of CBET education.

What is missing in this discussion is an empirical analysis of actual CBET implementation through a capability approach lens. This is particularly the case for African contexts where CBET is implemented as a development strategy. While CBET, at a conceptual level, may be accused of caging students in competencies that only serve the market, do actions on the ground tell a similar story when viewed through a capability lens? Does CBET practice demonstrate this competency cage that precludes wellbeing capability expansion? Or does it show something different? Can CBET act as a vehicle that moves beyond industry competencies to expand student wellbeing? Can it do both: build competencies needed by industry while also expanding student agency and capabilities for broader wellbeing?

This study seeks to address this gap. It analyzes a case of CBET reform in Kenya using a capability approach lens. The study explores the case of the TVET-18 project, a CBET reform initiative in the Lake Victoria region of Kenya. Working through an international partnership model, the project launched CBET curricula, built the capacity of trainers to deliver CBET curricula, and expanded college/industry engagement activities. To promote equity, the project implemented its activities using a gender lens. The project partnered Humber Polytechnic and Vancouver Island University in Canada with Sigalagala National Polytechnic (SNP) and Bondo Technical Training Institute (BTTI) in Kenya. Each Kenyan institution further partnered with other ‘mentee institutions’ to broaden the project’s impact. The study identifies the significant changes that emerged from this project and analyzes these changes using a capability approach lens. It assesses whether the changes demonstrate that CBET can act as a strategy to expand broader student agency and capabilities to promote human wellbeing beyond the development of industry-driven competencies.

The study is exploratory in nature. It employs a qualitative approach to analyze a specific case of CBET reform within a specific cultural context. In doing so, it provides empirical, case-based insights that can act as a springboard for further research in other contexts. Taken together, this can lead to new hypothesis generation or identification of causal mechanisms that broaden our understanding of the role CBET might (or might not) play in the promotion of student wellbeing.

Method

An evaluation of the TVET-18 project was undertaken using a capability approach lens to better understand whether this particular case of CBET reform expanded student capabilities beyond competency acquisition. A qualitative, open-ended data collection method involving key project stakeholders was chosen. This choice enabled stakeholders to discuss whatever impacts from the project were most significant to them, with no direction from the researcher that would prompt them to discuss competencies or capabilities. Such an approach allowed for an open-ended exploration beyond the intended human capital outcomes of the project, potentially uncovering unplanned or unexpected outcomes.

To facilitate this open-ended approach, the study made use of a modified Most Significant Change (MSC) method. The MSC method engages a collaborative approach to generating and analyzing personal narratives of change, identifying which of these changes is the most significant and assessing why it is the most significant (Davies & Dart, 2005). Drawing on the MSC technique, the research question that framed the evaluation was the following:

Looking back over the experience of the TVET-18, what was the most significant change that occurred as a result of the project?

Participants in the study were a range of TVET stakeholders from Kenyan project partners. This included senior administrators, trainers, students, industry partners, members of mentee institutions and members of institutional gender mainstreaming committees. Each of these is designated as a “stakeholder group” in this study. Purposive sampling that targeted equal numbers of females and males was used to recruit senior administrators, trainers and representatives of mentee institutions to participate in the study, while convenience sampling was used for students and industry representatives. All members of gender mainstreaming committees participated. Overall, 43 people participated in the study, with a roughly equal balance of female and male participants.

The MSC technique usually involves a systematic process of identifying significant changes through a hierarchical process with feedback mechanisms that engage multiple levels of stakeholders in assessing the significance of change narratives identified in levels below them. This study

used a revised version of this technique by removing the hierarchical assessment of narratives of change. Narratives of change were collected from all stakeholder categories (e.g. students, trainers, senior administrators, etc.) and then aggregated to identify the most significant change across all these stakeholder categories. This was done to allow change narratives from all stakeholder categories to remain on an equal footing for a more comprehensive assessment of change.

Collecting the narratives of change was done through key informant interviews (KIIs) with senior administrators and focus group discussions (FGDs) with trainers, students, industry partners, mentee representatives and gender mainstreaming committees. In the FGDs, storytelling was incorporated to elicit what participants felt were significant changes. A participatory rapid appraisal (PRA) activity of ranking and scoring was then used to engage participants in each FGD to collaboratively assess each change narrative and select the one they, as a group, felt was the single most significant change. One most significant change therefore emerged from each stakeholder group.

In the key informant interviews, senior administrators were asked to outline a set of significant changes that emerged from the project and then individually select the one they felt was most significant. These most significant changes were then aggregated across all senior administrators, with the one most frequently identified designated as the most significant change for the entire category of senior administrators.

An overall quantified list of significant changes was then finalized from the most significant change identified by each of the stakeholder groups. The individual change that was identified most frequently across all the stakeholder groups was designated as the most significant change for the project.

Results

The narratives of significant change provided by study participants spanned a variety of issues. Some of these focused on new CBET-related practices within their institutions, including improved industry-relevant curriculum, upgraded equipment that reflects industry reality and increased engagement with industry partners. These are not unexpected, given the nature of CBET reform. From a

human capital perspective, all of these contribute to a CBET experience closely linked to the needs of industry. The most significant change identified, however, was overwhelmingly the adoption of learner-centred pedagogy, including its role in expanding student agency and capabilities beyond CBET competencies. This was followed by shifting gender perspectives within the TVET institutions that expanded female agency as the second most significant change. Overall, these findings demonstrate that while improved ability to deliver CBET programs linked to industry-based competencies is a notable result of the TVET-18 project, study participants in parallel view CBET as an engine to expand student agency and wellbeing capabilities and this, for many, is the significant change of the project. [Table 1](#) presents all of the identified significant changes. The two most significant changes are explored in further detail in the next sections.

Building industry competencies and expanding student agency through learner-centred pedagogy

The most frequently identified significant change aggregated across all the stakeholder groups was the adoption of a participatory, learner-centred pedagogy. This was identified as the most significant change by three of the six stakeholder groups, including trainers, students and representatives of mentee institutions. In addition, it was overwhelmingly the most frequently reported significant change by individual participants, with 32 of 43 participants reporting it.

Using a learner-centred pedagogy is a critical part of CBET, with its emphasis on student mastery of industry-based competencies (Gervais, 2016). But this study’s findings show that within the TVET-18 project, the human capital orientation

is paralleled by a significant role learner-centred pedagogy can play in expanding students’ agency for broader wellbeing. Trainers reported that building their capacity to use a learner-centred pedagogy created a fundamental shift from the trainer-centric pedagogy of the past to a participatory, student-centric one. According to one trainer, “This is transformational”. The transformational nature of a learner-centred pedagogy was sometimes framed by trainers as its ability to better enable students to build competencies in demand by industry. “We now can identify where their skills are weak or strong through the teaching approach,” said one trainer. Another outlined how this contributed to a more coherent pedagogical experience, stating that, “We have enhanced knowledge of how to align the teaching methods to learning outcomes and assessment.”

Frequently, however, such participatory pedagogy was described as transformational not just for its ability to build student competencies but for its ability to strengthen broader student agency and autonomy. By placing the learner at the centre through practical and hands-on pedagogical strategies, trainers reported that their students had gained new confidence in themselves. Participatory pedagogy “allows students to express themselves,” stated one trainer, “both on training and otherwise.” Such confidence, according to trainers, is regularly demonstrated by students through more decisive decision-making on issues beyond the classroom, such as health, housing, gender roles and immediate income generation. “My students gained confidence by participating in the classroom,” reported one trainer, “and now some use the confidence and press for things like better accommodation and other things.” Overall, according to another trainer, “[students’] perceptions have

Table 1: Types of significant change identified by individuals and stakeholder groups

Type of significant change	Number of individual respondents who identify the change as significant (n=43)*	Number of stakeholder groups that identify the change as the most significant (n=6)
Adoption of a learner-centred pedagogy	32	3
Shifts in gender perspectives	11	2
Improved industry-relevant curriculum	6	1
Upgraded equipment	5	0
Increased engagement with industry partners	3	0

***Note:** Individual respondents may have identified more than one significant change.

changed on how they handle various things even outside the classroom; they embrace it now.” The change in pedagogical approach, according to multiple trainers, is a means “to empower” students beyond the classroom.

These trainer reflections on the broader agency expanding ability of learner-centred pedagogy are confirmed by students themselves. Every student respondent in this study identified learner-centred pedagogy as the most significant part of their educational experience. Like the trainers, the significance of learner-centred pedagogy was often linked to its ability to build competencies needed by industry. “The skills match [to industry] is good,” stated one student. Another framed this as “the teaching methods helped students to get exposed in skills practically, which is more of a help when a student is out of school in that they can handle jobs without being nervous.” But the ability of a learner-centred pedagogy to address industry needs was portrayed by some students as secondary. They pointed to its ability to broaden their own agency beyond the needs of industry. As was reported by trainers, students spoke of learner-centred pedagogy as fostering increased self-confidence to make choices, making them the drivers of their own education and broader life choices. Several students, for example, spoke of newfound confidence gained through the participatory pedagogical approach as leading them to successfully initiate small-scale income-generating activities. “I’ve got more confidence now from the program to make [business] decisions,” said an ICT student who initiated their own small business, “so the best part of my education so far is that it enables me to earn some money.” This is particularly significant as student respondents reported that they often face notable financial challenges during their studies. According to every single student respondent, the pedagogy prior to CBET reform was trainer-dominated and theory-heavy, which not only constrained effective employment-related competency acquisition but also the development of confidence to make broader life choices.

This ability to expand student agency has further implications that, while not directly related to industry-based competency development, help support it by expanding more general education capabilities. The reported increased confidence to make life choices outside of the classroom attributed to learner-centred pedagogy also impacts in-class confidence. Greater student confidence translates into stronger engagement and motivation. “My students are now able

to easily and attentively pay attention in class,” said one trainer, “doing follow-ups whenever needed and on whatever is needed.” Another trainer went further, suggesting that this increased agency has broader institutional implications for student retention: “I learnt about the delivery methodology and realized that CBET methods are quite different to the traditional ones. These new methods have a positive impact on students and trainers in terms of motivation and retention.” Expanded student agency has therefore expanded their education capability as well.

Some trainers are so enthused about the effectiveness of learner-centred pedagogy in building industry competencies and expanding broader student agency that they express regret about their teaching practices prior to CBET reform. A senior administrator told a story of “confessions” they heard from two trainers. One trainer told the administrator, “I regret having wasted people’s children,” referring to students they taught prior to the TVET-18 project. Another trainer outlined a similar sentiment, claiming, “I wish I could call back my old students.” Such enthusiasm has not gone unnoticed by students. One student jokingly compared trainers’ new enthusiasm for learner-centred pedagogy to a religious conversion, asking, “Have some of our trainers gotten saved?”

Ultimately, these findings illustrate that the learner-centred CBET pedagogy introduced in the TVET-18 project was significant in two ways: first, in its ability to better foster the development of industry-based competencies and, second, in its ability to expand broader student agency to make wellbeing choices within and beyond the classroom. The experience of respondents indicates these two things appear to work in parallel. This dual impact is not only significant in the view of respondents; it was overwhelmingly characterized as the most significant change emerging from the TVET-18 project.

The notion of learner-centred, participatory pedagogy building broader wellbeing agency beyond disciplinary knowledge has a long tradition in the education literature going back to the seminal work of Paulo Freire (1970). But, within the CBET literature on Africa in particular, the contribution of learner-centred pedagogy to expanding agency is often framed as an agency that empowers graduates to fill industry needs (Kivindu, 2022; Mboya, 2022). Industry remains the focus rather than student wellbeing. This study suggests something broader. The two—building industry competencies and

expanding wellbeing agency and capabilities—can work in concert within CBET programming based on the nature of its learner-centred pedagogy.

Expanding female students’ capabilities through shifting perceptions of women’s agency

The TVET-18 project’s approach to CBET reform not only showed evidence of expanding student agency for wellbeing beyond employment competencies, but it also initiated an expansion of the agency of female students who face different circumstances than males. Gender was mainstreamed by the project across multiple activities: design of gender-responsive CBET curricula, delivery of gender-responsive CBET pedagogical and leadership training, integration of gender-responsive employability skills, and support of gender mainstreaming committees at each partner institution.

This study did not ask respondents questions specific to gender in the KIIs and FGDs. The intent was to not lead any respondents into speaking about gender issues in order to see if they raised them as significant on their own. This would provide better insight into the significance of the gender activities in the project and their potential impact on expanding the agency and capabilities of female students. Despite not prompting for gender, the issue of gender equality was the second most frequent ‘most significant change’ reported across the study’s stakeholder groups. Two of the six stakeholder groups identified it as the most significant change, including senior administrators and gender mainstreaming committees. Further, when analyzing individual responses, shifting gender perspectives was reported as most significant by 11 of 43 respondents. Specifically, respondents reported that the project drove changes in how female students are perceived. Females are now reportedly more frequently viewed by both male and female respondents as having the agency to successfully undertake TVET education despite it often being gendered as male in the past. Female students reported they now “feel proud” to be enrolled in a CBET program, and “boys now see this as normal.” Several female respondents described this as “student enlightenment.” A member of a gender mainstreaming committee summarized the situation created by the project as “gender is now out there; it has arrived.” A senior executive concurred, stating gender equality in CBET has been brought “into the limelight.”

The perceived expanded agency of females appears to have translated into the application of this agency to employ their education capability. Multiple respondents spoke of how this changed perception has contributed to increases in both the retention and recruitment of female students. According to one senior administrator: “Now we realize we can infuse gender into CBET curriculum and pedagogy and then successfully market it to girls.” Indeed, figures shown by registrar office staff in both partner institutions illustrated an increase in the retention and enrollment of women over the last few years. One registrar stated that, “Other colleges have called and asked, ‘How do you do it?’”

To further strengthen female students employing their education capability, SNP, one of the Kenyan project partners, created a breastfeeding facility for students who are mothers. The facility enables new mothers to continue their training uninterrupted by bringing their babies to campus, further expanding their capability to be educated by removing a potential barrier. Another initiative by BTTI, the other Kenyan project partner, similarly demonstrated an increase in female agency translating into further expansion of wellbeing capabilities. In this case, the initiative expanded not only women’s education capability but income-generation capability as well. Inspired by the gender content of the TVET-18 project, BTTI created an extra-curricular beekeeping initiative that was not a part of the original project plan. The initiative is managed by the students themselves, and they receive beekeeping training. One of the intended outputs of the initiative is to raise funds for female students, expanding their education capability. Respondents also reported, however, that the new skills in beekeeping expand their individual income-generating capability, while the skills developed through managing the initiative further strengthen confidence that expands their agency to make other life decisions.

The project’s infusion of gender into CBET reform, therefore, appears to play an important role in expanding the agency and multiple wellbeing capabilities of women. A previously gendered mindset that defined TVET as less appropriate for women is eroding as female participation in CBET education increases, and they employ their agency in various ways. What is particularly important is that this change in mindset was identified by senior administrators as the most significant change from the TVET-18 project. Support from leadership is critical to foster meaningful institutional change.

These administrators now view the promotion of gender equality as a central component of CBET reform. One senior administrator further discussed the importance of small extra-curricular gender initiatives such as the breastfeeding facility and beekeeping initiative. He maintained that they contribute to a larger societal goal that will “help us move together as a country.”

At the same time, while significant, these gender changes are only a small step. Respondents spoke of notable challenges that still remain. Gender-based violence on campus is still often not reported. The recruitment of women to decision-making positions within the institutions also continues to lag behind the recruitment of men. None of this is surprising, particularly for a CBET reform project of only several years duration. Changing gender perceptions that impact women’s agency and wellbeing capabilities is a long-term process. The TVET-18 project clearly contributed small, positive steps that helped nudge forward the expansion of women’s wellbeing beyond the acquisition of industry-driven competencies. More work remains.

Discussion

Past criticisms of CBET suggest that its human capital orientation is reductionist, rigid and turns students into mere instruments of value creation imprisoned in a competency cage defined by industry (Chappell, 1996; Hyland, 1994; Preston, 2017). The results of this study, however, illustrate that CBET has the potential to play a more developmentalist role that expands students’ agency and capabilities for broader wellbeing. While the study’s findings are not broadly generalizable as they emerge from a single case of CBET reform in a Kenyan context, their exploratory nature provides emerging insights into the development potential of CBET in Africa. Three key issues emerge from the study’s findings.

Is CBET’s ability to expand agency and capabilities limited to the nature of its pedagogy?

A key theme emerging from the study is that CBET need not be limited to a human capital orientation. The experience of the TVET-18 project demonstrated that a significant outcome of its CBET reform process, indeed, its most significant outcome, was the adoption of a CBET-related learner-centred pedagogy that not only built industry-relevant competencies but also expanded students’ agency and wellbeing capabilities. Ultimately, this suggests CBET and CBET reform

initiatives such as TVET-18 have the potential to bridge both capability and human capital concerns. This conclusion may not sit well with those who criticize CBET as rigidly focused on turning students into instruments of market-based value creation. It may appear as a mere seasoning of the human capital approach with a sprinkling of expanded student capabilities. But this study’s findings suggest that it is worthwhile to further explore the potential of CBET to more deeply integrate a capability approach orientation that responds to more than just industry needs.

At the same time, the study’s findings should not be overstated. The study found that the adoption of a learner-centred pedagogy was the key CBET component that contributes to the expansion of student agency and capabilities. While important, this is fairly modest. There was no evidence in this particular case that other components of CBET also contribute to capability expansion. Nonetheless, as an exploratory study focused on a single regional context, this does not preclude that other aspects of CBET may also expand wellbeing capabilities. For example, no evidence emerged in this study that CBET curriculum content contributed to expanding student agency or capabilities. Yet, is there room for a curriculum that is explicitly focused on industry-based competencies to incorporate content that allows students to explore how these competencies might also expand their capabilities in other ways? The capability approach understands capabilities to be interlinked. An individual capability is important for its own sake but is also potentially instrumental in expanding other capabilities (Sen, 1999). Expanding an education capability, for example, not only allows someone to choose to become more educated, but it may also expand their capability to engage more effectively as a democratic citizen. What this interlinking of capabilities might look like in terms of curriculum content would likely be specific to individual CBET programs but exploring how CBET curriculum might link industry-needed competencies to expanding non-employment-related capabilities is a fruitful avenue for further exploration and experimentation. Other aspects of CBET beyond curriculum, such as industry attachments, would also benefit from research on their potential to expand wellbeing capabilities.

An intentional focus on mainstreaming gender is needed to enhance the ability of CBET to expand women’s capabilities

What is particularly notable in this study’s findings is that

evolving gender perceptions was the second most significant change that emerged from TVET-18. Moreover, this led to an apparent expansion of agency and capabilities related to education and income generation for women. Again, the method used in the study did not explicitly ask respondents about gender issues, but it emerged as a significant narrative of change, nonetheless. This responds to a key theme in the literature on TVET and the capability approach that argues for the necessity of a gender-focused approach that expands women's capabilities (McGrath et al., 2020). Moreover, it is particularly critical given the reality of TVET institutions in Africa tending to be sites that reproduce patriarchal dynamics rather than dynamics of gender equality (Bray-Collins et al., 2022).

A significant qualification, however, is needed. The intent of this study was to assess whether CBET as a TVET strategy can expand student agency and capabilities in addition to meeting the competency needs of industry. In the case of the TVET-18 project, the evident expansion of female wellbeing capabilities, however, had nothing to do with the particular nature of CBET itself. It was a reflection of an intentional process of mainstreaming gender within CBET. Accordingly, a key insight emerging from the TVET-18 experience is that if CBET is to be a broader equality-driven SDG strategy rather than just an industry-focused economic strategy, intentionality is necessary around issues of gender inclusion. Intentionally mainstreaming gender issues across pedagogy, curricula and leadership training helps foreground gender as a critical concern within a CBET context. Further, this study suggests the focus on leadership is particularly important. Senior administrators in the study identified changing gender perceptions as the most significant change that emerged from TVET-18's CBET reform process. These leaders subsequently not only supported planned gender-related project activities, but they further supported new initiatives such as the beekeeping initiative and breastfeeding facility. Intentional actions that impact CBET leadership perspectives can lay the foundation for meaningful institutional action that can expand women's capabilities and agency.

CBET's potential to expand wellbeing capabilities at the institutional level should be linked to broader policy action

This study focused on identifying the most significant change emerging from the TVET-18 project. The intent was to assess whether the project's process of CBET reform moved beyond

just competency development to incorporate expanding agency and wellbeing capabilities. The study's findings demonstrate that, in this particular Kenyan case, not only is there evidence that this occurred on a modest level, but that it was viewed by CBET stakeholders as very significant. The first major finding illustrated that this was a direct result of the nature of CBET itself, given the central role of learner-centred pedagogy. The second major finding suggested that an intentional approach to gender inclusion expanded female agency and capabilities, although this was not inherent in the character of CBET. But there is a critical qualification to these two findings. The benefit of using the MSC strategy as a data collection method is its open-ended, qualitative character. The open-ended conversations that occurred in the FGDs and KIs resulted in a deep exploration of the significant changes experienced by all stakeholder categories, resulting in the two positive changes that characterize the study's main findings. Yet, in the case of many respondents, the discussion moved organically from these significant and positive changes to a notable barrier to realizing them. The capability approach requires analytical attention to be paid not only to capability expansion but also to the barriers that might hinder such expansion. In this particular case, student poverty is a key barrier. It is a barrier that hinders the ability of some students to take advantage of CBET's potential to expand wellbeing. Significantly, the barrier of student poverty is linked to the very character of CBET itself.

Over half of student respondents reported poverty as a critical challenge in their education. This was confirmed by multiple trainers and administrators. Students, unprompted, outlined the financial challenges they face, from challenges affording rent and food after school fees are paid to the high cost of transportation to school to the inability to afford a computer or other equipment needed for education success. These financial challenges are significant on their own. They are exacerbated, however, by two characteristics specific to the nature of CBET in Kenya. First, CBET's focus on developing competencies involves significant hands-on instruction with industry-relevant equipment. The use of much of this equipment requires students to have personal protective equipment (PPE). This requirement is not compromised, given the serious safety issues that exist with some of the equipment. Students outlined that they are usually responsible for securing appropriate PPE. Some of them simply cannot afford it. Without PPE, students are not allowed to undertake hands-on learning on the equipment. In

some cases, this means students need to find opportunities to borrow PPE from fellow students, resulting in delayed course completion and graduation. In other cases, trainers reported that some students' inability to afford PPE leads to them simply dropping out. "We trainers are fully capacitated," stated one trainer, "but students need safety gear to benefit from our capacity."

A second reported financial issue relates to the more extensive assessment that occurs within CBET programs. CBET assessment requires students to demonstrate competencies as part of ongoing evaluation. Trainers reported that prior to the move to CBET, evaluation often relied on a single final exam focused on theory. The reformed CBET focus, in contrast, involves a range of assessments used throughout a course. Trainers spoke of this new evaluation model with considerable enthusiasm. Multiple evaluations to assess multiple competencies were viewed as a considerable educational improvement in how TVET programs are delivered. The accompanying challenge, however, is cost. Students in Kenya pay to sit for a formal exam. Several trainers spoke of how students used to pay to sit for one final exam, but with the shift to CBET, they now need to pay for eight competency-based exams. For students already struggling with poverty, the implication is clear. "CBET is expensive," according to a trainer, "and this is a challenge to students."

The very nature of CBET therefore creates an additional financial burden for students who may already be struggling. Learner-centred pedagogy with relevant equipment and multiple evaluative activities are hallmarks of the CBET experience. The TVET-18 project developed the institutional capacity to deliver these, and there is evidence they contribute to students building industry competencies and expanding their agency and capabilities. Yet poverty shuts out some students from affording the PPE or exam fees needed to take advantage of this situation. As a potential strategy for expanding student capabilities, the nature of CBET in Kenya works at cross-purposes. For students (or prospective students) living in poverty, the result is that the nature of CBET potentially contracts their education capability rather than expanding it.

The issue of student poverty points to the need to link institutional actions to their broader context. Institutions can play a key role in catalyzing the expansion of people's

capabilities (Drèze and Sen, 2002; Robeyns, 2005). The TVET-18 project demonstrated this role, given the changes related to agency and capability expansion that emerged from its process of building institutional CBET capacity. Yet the project's experience also showed that the unique financial character of CBET in Kenya, combined with student poverty, an external barrier, limits the application of new institutional capacity. The potential of CBET as a strategy to expand student capabilities is notably eroded. Student poverty, however, is a broader contextual issue that is largely beyond the scope of individual TVET institutions. It is an issue that requires intervention by policymakers. How policymakers might move forward in resource-constrained contexts like Kenya, however, is less clear and requires further investigation. Nonetheless, this case suggests that if CBET is to expand student wellbeing, particularly of those who are most marginalized, addressing poverty should be seen as an essential component of CBET programming requiring broader policy support. Institutional capacity building to deliver CBET cannot be disconnected from broader policy action on poverty. International partnerships such as the TVET-18 project can play an important role by engaging external resources, but project-based initiatives are not financially sustainable in the long term. Developing policies and national or local funding mechanisms to improve CBET's accessibility for those in poverty is a critical challenge requiring attention if CBET is to act as a strategy to expand both the wellbeing capabilities of students and their industry-based competencies.

Conclusion

This exploratory study sought to assess a case of CBET reform in Kenya for its potential to incorporate a capability approach orientation beyond the acquisition of industry-driven competencies. This was done in the context of criticisms of CBET as a human capital approach that places students in a rigid and reductionist competency cage driven by industry needs. Using a revised version of the MSC method, the study's findings illustrate that the adoption of a learner-centred pedagogy associated with CBET played a role in expanding the capabilities and agency of students in addition to building industry competencies. Furthermore, the intentional mainstreaming of gender into CBET reform, including a focus on leadership, initiated a process of changing gender perspectives that contributed to expanding female agency and capabilities. Yet, the expansion of student wellbeing through this approach to CBET reform

was hindered by the financial character of CBET itself and its interconnection to student poverty.

Overall, these issues suggest that there is potential for CBET to move beyond a sole focus on human capital and embrace a broader focus on wellbeing. Further investigation is needed, however, on whether other aspects of CBET beyond its learner-centred pedagogy might play a role in expanding wellbeing capabilities. Is it solely CBET's pedagogy that expands agency and capabilities, or can other aspects be leveraged to further strengthen this? Further investigation is also needed on how to effectively address the poverty barrier to CBET by linking institutional actions to broader policy support. Ultimately, broadening our understanding of how CBET can pair its existing human capital orientation with a capability orientation will help drive the use of CBET as a more holistic development strategy in Kenya and beyond, a strategy that better equips students with the agency and capabilities to become the authors of their own lives within and beyond the market.

Conflict of Interest

There are no conflicts of interest to declare.

Funding

This study received funding through the *Young Africa Works in Kenya-TVET-18* project. TVET-18 was a project within the larger *Young Africa Works in Kenya* program implemented by Colleges and Institutes Canada and the Mastercard Foundation.

Note on Contributors

Kent Schroeder, PhD, Senior Advisor—Research, Evaluation & Learning, International Development Institute, Humber Polytechnic, Toronto, Ontario, Canada, kent.schroeder@humber.ca.

References

Alkire, S. (2005). Why the capability approach? *Journal of Human Development*, 6(1), 115-133. <https://doi.org/10.1080/146498805200034275>

Anderson, D. (2009). Productivism and Ecologism: Changing Dis/courses in TVET. In: Fien, J., Maclean, R., Park, MG. (eds) *Work, Learning and Sustainable Development. Technical and Vocational Education and Training: Issues, Concerns and Prospects*, vol 8. Springer, Dordrecht. https://doi.org/10.1007/978-1-4020-8194-1_3

Argüelles, A., & Gonczi, A. (Eds.). (2000). *Competency Based Education and training: A world perspective*. Mexico City: Grupo Noreiga Editores.

Bray-Collins, E., Andrade, N. & Wanjiru, C. (2022). Gender and TVET in Africa: A review of the literature on gender issues in Africa's TVET sector. *Futures of Education, Culture & Nature – Learning to Become*, 1, 151-171. <https://doi.org/10.7146/fecun.v1i.130245>

Callan, V., & Ashworth, P. (2004). *Working together: Industry and VET provider training partnerships*. NCVER. <https://ncver.edu.au/research-and-statistics/publications/all-publications/working-together-industry-and-vet-provider-training-partnerships>

Chappell, C. (1996). Quality and competency based education and training. In *ACAL Conference - The Literacy Equation: Competence = Capability?* (pp. 71-79). Red Hill, Australia: Queensland Council for Adult Literacy.

Davies, R. & Dart, J. (2005). *The Most Significant Change (MSC) technique: A guide to its use*. <http://dx.doi.org/10.13140/RG.2.1.4305.3606>

Drèze, J., & Sen, A. (2002) *India: Development and participation*. Oxford, UK: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199257492.001.0001>

Freire, P. (1970). *Pedagogy of the Oppressed*. New York: Seabury Press.

Gervais, J. (2016). The operational definition of competency-based education. *Journal of Competency-based Education*, 1(2), 98-106. <https://doi.org/10.1002/cbe2.1011>

Gessler, M., & Peters, S. (2020). Competency-based education and training in Namibia: Educational transfer as imitation. In M. Pilz & J. Li (Eds.), *Comparative vocational education research* (pp. 113-130). Wiesbaden, Germany: Springer VS. https://doi.org/10.1007/978-3-658-29924-8_7

Hyland, T. (1994). Competence, education and NVQs: Dissenting perspectives. London: Cassell.

Jwan, S.T. (2022). Competency-based Education and Training (CBET) in Kenya: Policies, opportunities and challenges. *Alternation*, 39 (Special edition), 281-300. <https://doi.org/10.29086/2519-5476/2022/sp39a13>

Kafyulilo, A. C., Rugambuka, I. B., & Ikupa, M. (2012); The implementation of competency based teaching approaches in Tanzania. The case of pre-service teachers at the Morogoro Teacher Training College. *Universal Journal of Education and General Studies*, 1(II), 339 – 347.

Kivindu, G.D. (2022). Youth empowerment through quality apprenticeships and competency-based education and

- training (CBET) in technical and vocational education and training (TVET): Lessons Kenya can draw from Germany. *The Kenya Journal of Technical and Vocational Education and Training*, 5, 87-95.
- Legusov, O., Raby, R. L., Mou, L., Gómez-Gajardo, F., & Zhou, Y. (2021). How community colleges and other TVET institutions contribute to the United Nations Sustainable Development Goals. *Journal of Further and Higher Education*, 46(1), 89-106. <https://doi.org/10.1080/0309877X.2021.1887463>
- Lei, M., & Abidin, N.Z. (2024). Exploring the relationship between the United Nation Sustainable Development Goal (SDG) and Technical and Vocational Education and Training (TVET). *International Journal of Advanced Research in Education and Society*, 6(2), 591-601. <https://doi.org/10.55057/ijares.2024.6.2.50>
- Lozano, J.F., Boni, A., Peris, J., & Hueso, A. (2012). Competencies in higher education: A critical analysis from the capabilities approach. *Journal of Philosophy of Education*, 46(1), 132-147.
- Mboya, S.O. (2022). Empowering youth through competency-based education and training (CBET), entrepreneurship and industrial linkages in Kenya: A case of the Kisumu National Polytechnic, Kenya. *The Kenya Journal of Technical and Vocational Education and Training*, 5, 118-128.
- McGrath, S. (2018). *Education and development*. Abingdon: Routledge.
- McGrath, S. (2012). Vocational education and training for development: a policy in need of a theory? *International Journal of Educational Development*, 32(5), 623-631. <https://doi.org/10.1016/j.ijedudev.2011.12.001>
- McGrath, S., & Powell, L. (2016). Skills for sustainable development: Transforming vocational education and training beyond 2015. *International Journal of Educational Development*, 50, 12-19. <https://doi.org/10.1016/j.ijedudev.2016.05.006>
- McGrath, S., Ramsarup, P., Zeelen, J., Wedekind, V., Allais, S., Lotz-Sisitka, H., Monk, D., Openjuru, G., & Russon, J. (2020). Vocational education and training for African development: A literature review. *Journal of Vocational Education & Training*, 72(4), 465-487. <https://doi.org/10.1080/13636820.2019.1679969>
- Ngcwangu, S. (2019). Skills Development and TVET Policies in South Africa: The Human Capabilities Approach. In: McGrath, S., Mulder, M., Papier, J., Suart, R. (eds) *Handbook of Vocational Education and Training*. Springer, Cham. https://doi.org/10.1007/978-3-319-49789-1_4-1
- Nussbaum, M. (2000). *Women and human development: The capability approach*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/cbo9780511841286>
- Nussbaum, M. (2006). Education and democratic citizenship: Capabilities and quality education. *Journal of Human Development*, 7, 385-395. <https://doi.org/10.1080/14649880600815974>
- Powell, L., & McGrath, S. (2019). Capability or Employability: Orientating VET Toward “Real Work”. In: McGrath, S., Mulder, M., Papier, J., Suart, R. (eds) *Handbook of Vocational Education and Training*. Springer, Cham. https://doi.org/10.1007/978-3-319-94532-3_12
- Powell, L., & McGrath, S. (2014). Exploring the value of the capability approach for vocational education and training evaluation: Reflections from South Africa. In G. Carbonnier, M. Carton & K. King (Eds.), *Education, learning, training. Critical issues for development* (pp. 126-148). Leiden and Boston: Brill. https://doi.org/10.1163/9789004281158_008
- Preston, J. (2017). *Competence Based Education and Training (CBET) and the end of human learning*. Cham, Switzerland: Palgrave Macmillan. https://doi.org/10.1007/978-3-319-55110-4_4
- Robeyns, I. (2005). The capability approach: A theoretical survey. *Journal of Human Development*, 6(1), 93-114. <https://doi.org/10.1080/146498805200034266>
- Robeyns, I. (2006). The capability approach in practice. *The Journal of Political Philosophy*, 14(3), 351-376. <https://doi.org/10.1111/j.1467-9760.2006.00263.x>
- Saito, M. (2003). Amartya Sen's capability approach to education: A critical exploration. *Journal of Philosophy of Education* 37(1), 17-33.
- Sen, A. (1985). Well-being, agency and freedom. *The Journal of Philosophy*, LXXXII(4), 169-221. <https://doi.org/10.2307/2026184>
- Sen, A. (1999). *Development as freedom*. New York: Knopf.
- Terzi, L. (2007). The capability to be educated. In M. Walker & E. Unterhalter (Eds.), *Amartya Sen's capability approach and social justice in education* (pp. 25-43). Basingstoke, UK: Palgrave MacMillian. https://doi.org/10.1057/9780230604810_2
- Vally S., & Motala E. (2014). Education and economy: Demystifying the skills discourse. In S. Vally & E. Motala (Eds.), *Education economy and society* (pp. 26-48). Pretoria: UNISA Press.
- Walker, M., (2006). *Higher education pedagogies*. Buckingham,

UK: Open University Press.

Wedekind, V. (2014). Going around in circles: Employability, responsiveness, and the reform of the college sector. In S. Vally & E. Motala (Eds.), *Education economy and society* (pp. 57–80). Pretoria: UNISA Press.

Zuva, J., & Zuva, T. (2020). Enhancing sustainable lifelong learning through competency based education and training in Zimbabwe polytechnics. *International Journal of Business and Management Studies*, 12(1), 133-146.