

# Initial Findings on the Continuing Professional Development Practices of Technical and Vocational Education and Training (TVET) Teachers in Kenya

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## **Abstract**

Technical and vocational education and training are vital for the social economic development of societies. This necessitates that the technical and vocation education and training (TVET) provided is of high quality and relevant to the learners and the wider society. However, quality and relevance of TVET in many parts of the world remains low despite the significant efforts to improve quality. In Kenya, challenges in TVET have been attributed, in part, to the lack of effective Continuing Professional Development (CPD) by TVET teachers. However, studies investigating actual continuing professional development practices by TVET teachers and the factors that underlie those practices are rare. This study therefore sought to investigate Kenyan TVET teachers Continuing Professional Development practices and the underlying factors that lead to the observed practices.

The results of the pilot study presented in this article are part of a wider study to identify policy proposals to institutionalize effective CPD. An initial investigation of the current CPD practices is aimed at informing the development of the policy proposals. From the pilot study, TVET teachers were found to be desirous of CPD although only formal learning was viewed as legitimate CPD. Teachers mainly use newly acquired knowledge and skills to update their teaching content but rarely to change their teaching practices. While promotions are a common motive for CPD, this benefit is rarely attained. Costs and lack employer support were reported as the most significant challenges. It is recommended that non-formal learning practices be rewarded to encourage their adoption.

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## Introduction

### Quality TVET and TVET Teachers' Competencies

Technical and vocational education and training (TVET) is vital for social economic development. As the recourse for many in skills acquisition, TVET not only supports social economic development, it also enables social inclusion (Hoeckel, 2008; McGrath, 2011; Tripney & Hombrados, 2013). However, for TVET to support social economic development, it must be of high quality and relevant to the learners and the wider society. Quality and relevance are however conditional on the availability of competent TVET teachers (Gamble, 2013; Wheelahan, 2010). On the other hand, the emancipative power of TVET (Billet, 2011; Tur Porres, Wildemeersch, & Simons, 2014) can be comprised by low quality teaching wherein low quality education becomes a poverty trap (Van Der Berg et al., n.d.). It is therefore essential that TVET teachers are competent and able to provide high quality education. Competent TVET teachers must not only possess in-depth knowledge about the subjects they teach but their knowledge must also be relevant and up to date. In addition they must have mastered the technical skills they are expected to help their trainees develop. Other than specialized technical knowledge and skills, TVET teachers must also possess effective teaching skills that enable them facilitate effective learning (Gamble, 2013; UNESCO, 2016).

### Continuing Professional Development

Like other professions, TVET teaching is based on a large body of technical and scientific knowledge. That knowledge however progresses and does so at an ever increasing pace. The high pace risks rendering TVET teacher knowledge and skills irrelevant unless they engage in continuous learning to keep their professional knowledge, skills and values up to date and relevant. Such learning is often referred to as Continuing Professional Development (CPD).

Richter et al. (2010) defined Continuing Professional Development as all learning intended to improve professional expertise and experience through the acquisition of knowledge and learning of new skills, beyond those acquired during initial training. Such learning deepens and extends professional competences, such as knowledge, skills, beliefs, values, motivations and self-regulation that teachers rely on in their work. Other scholars and researchers define CPD in different ways. The emphasis however is on learning that leads to improved practice and related personal and professional growth. The learning can be formal or informal, discrete or embedded in practice (Desimone, 2009; Postholm, 2012; Richter et al., 2010).

Since all professionals have the common goal of serving their clients (Hargreaves, 2000), the ultimate aim of continuing professional development is improved and better outcomes for their clients. In the case of teachers, Continuing Professional Development is aimed at improved and sustained learning outcomes (Guskey, 2002; Timperley, Wilson, Barrar, & Fung, 2007). Continuing Professional Development may also be aimed at developing knowledge and skills for future work and expanding career opportunities (Fraser, Kennedy, Reid, & McKinney, 2007).

Continuing professional development also responds to the challenge of remoteness, whereby TVET teachers loose touch with the on goings of the world of work for which they are supposed to ready their students (Gamble, 2013).

### **Effective Continuing Professional Development**

However, scholars have identified that not all forms of Continuing Professional Development are equally effective. While traditional, one-off professional development activities have been found to create awareness and spur interest, they rarely translate to sustained improvements in practice. Instead, CPD activities that last longer, are embedded in practice and that support reflection lead to sustained improvements in practice (Boyle, Lamprianou, & Boyle, 2005; Boyle, While, & Boyle, 2004). Effective continuing professional development is thus associated with a strong focus on content, active participation, coherence and collective participation (Desimone, 2009). Effectiveness is further enhanced when learning is embedded in practice and relevant to the context of the teacher (Halász, Looney, Michel, & Sliwka, 2018; Olofson & Garnett, 2018).

### **The Need for Effective CPD in Kenya's TVET**

It is therefore imperative that TVET teachers engage in effective continuing professional development if they are to provide quality and effective learning. However, the quality and relevance of TVET in many parts of the world, and Kenya in particular, remains problematic (Kigwilu, Akala, & Wambua, 2016; Sang, Muthaa, & Mbugua, 2012). TVET teachers in Kenya are thus seen as in need of continuing professional development to update their knowledge, enhance their skills and exposure to modern technology (Ferej, Kitainge, & Ooko, 2012; Oketch & Peliwe, 2017; Sang et al., 2012). However, the extent and effectiveness of Kenya's TVET teachers continuing professional development is under-researched.

### **Research gap**

Studies investigating the continuing professional development practices of TVET teachers in Kenya are rare. However, without deeper insights into why teachers adopt the practices they adopt, it is difficult if not impossible to systematically improve those practices. This study thus sought to identify the continuing professional development practices by TVET teachers in Kenya and investigate the underlying factors that lead to the observed practices. The results of the pilot study presented in this article are part of a wider study to investigate the CPD practices by TVET teachers in Kenya and identify policy solutions that can institutionalize effective CPD.

### **Article brief**

The article will briefly outline the pilot study and characteristics of the respondents. Initial findings identifying the most common practices, benefits and challenges will then be presented. An analysis of the interactions between respondent characteristics and their practices, benefits and challenges will then be presented. The article will conclude with recommendations, focusing on both the main study and TVET teacher CPD.

## Description of the study

### Aims and research questions

This article reports the initial findings of a pilot survey undertaken as part of a wider study focusing on policies to guide effective continuing professional development of TVET teachers in Kenya. In order to propose realistic policies that are acceptable to teachers, it is necessary that the policy proposals are informed by current conditions and practices. Thus, the main study seeks to determine current formal and non-formal TVET teacher CPD practices. Three research questions guided the pilot study. First, what motivates TVET teachers to learn and how do they learn? Second, what are the outcomes of their learning? Finally, what hinders their learning?

The pilot study was also undertaken to evaluate the efficacy of the proposed data collection tools as well as to provide initial findings to guide the identification and development of policies proposals that will form a key output of the main study.

### Sample and basis for sample

The Pilot study was undertaken in three TVET institutions in the Nairobi metropolitan area in July and September 2019. Home to over seven million of Kenya's 48 million people, the Nairobi metropolitan area is Kenya's principal economic and culture centre generating 60 per cent of Kenya's GDP (Mundia, 2017). It consists of five counties, namely, Nairobi County, Kiambu County, Kajiado County, Machakos County and Murang'a County. Kenya has 47 such counties which are regional units with devolved governance responsibilities. Due to its diversity and significant population, the Nairobi Metropolitan area is expected to be a rich source of information crucial to understanding the country as a whole.

The TVET institutions were selected to provide a representative view of the metropolis and by extension, the rest of the county. Nairobi Technical Training Institute (Nairobi TTI) is in the capital city of Nairobi in Nairobi County, while Thika Technical Training Institute is in the industrial town of Thika in Thika County. Masai Technical Training Institute is in the more rural area of the metropolis in Kajiado County. This diverse profile was selected to present a holistic view of teacher continuing professional development practices in the metropolitan area.

### Data collection instrument

Data was collected using a questionnaire that asked teachers to provide information about their continuing professional development activities. The questionnaire was developed based on suggested possible explainers of teacher learning. The first section asked for biographical information regarding gender, marital status, number of children, years worked and current job group. This was in line with prior findings by David & Bwisa (2013) on the factors that limit secondary school teachers participation in continuing professional development. Other than personal and family related factors, expenses associated with CPD, heavy workloads and lack of support from their employer were reported as significant limiting factors. With respect to the content learnt, secondary teachers also felt frustrated by monotonous

and irrelevant content. The questionnaire thus sought to assess if similar factors would be reported by TVET teachers.

In the next section, respondents were asked to indicate what content they wished to learn the most and what they actually learnt. This was meant to assess if TVET teachers were able to obtain the learning they desired most. The next section asked respondents to indicate how often they had participated in various formal and informal learning activities and how helpful they found the activities to be. Respondents were then asked to indicate their motives, the outcomes and costs associated with CPD. Respondents were also asked to indicate how they incorporate what they learn in their teaching, what motivates them to learn and to identify specific benefits they have received. Respondents were also asked to identify costs and challenges, how they met the costs and where they obtained support.

To support the policy research aim of the study, respondents were asked to indicate if they perceived current CPD policies to be adequate and to suggest policies to improve CPD practices in Kenya.

To probe deeper into the practices and provide insights about learning practices in TVET that may not have been suggested in literature, additional data was also collected using interviews. The interview focused not just on the practices, but on the underlying reasons for adopting the practices. It is expected that an analysis of the interviews will reveal held meanings about teaching and professional development and how those meanings influence CPD practices.

### **Questionnaire development**

The questionnaire was initially developed on the Qualtrics Survey Software platform from which it was later converted into a text document. The Qualtrics Survey Software platform provided a convenient means of analysing the questionnaire as it evolved. This also presented an opportunity to evaluate the suitability of carrying out the questionnaire online. However, for the purposes of the pilot study, only the final hardcopy version was presented to teachers.

## **Findings**

### **Description of participants: profiles, initial and current qualification, prior work experience**

The sampling plan for the pilot study was to receive responses from fifteen respondents from each institute. However, only forty valid responses were obtained from the contacted teachers. Of these, twelve were from Thika TTI, eleven from Nairobi TTI and fourteen were from Masai TTI. Three respondents from different institutes agreed to participate. Respondents were almost equally split along gender, 22 being male and 18 being female. Most of them were married and had children: 78 per cent were married while 88 per cent had children. Majority were between 40 and 60 years of age, with only two being less than 30 years old and eight being above 40 years old. Two of the respondents were new teachers having worked for less than two years. Majority, 33 per cent, were in job group L, the entry grade

for teachers with a bachelor's degree, while 20 per cent were in the next grade with another 20 per cent in job groups N and P. Job groups N and P are senior positions, promotion to which is often dependent on work experience and holding administrative positions. Only 12.5 per cent of the respondents were in job group L, the entry grade for teachers without a bachelor's degree. Many of the teachers are in their mid-career stage having worked for more than ten years as shown the in the cross tabulation of work experience and job group below.

Table 1. Cross tabulation of teachers' work experience in years and their job groups

		Job Group						Total
		K	L	M	N	P	Other	
Work experience (years)	0-2						2	2
	3-5	3	3					6
	6-10	1	2				1	4
	11-15	1	6	3		3	1	14
	16-20		2	3	2	2	2	11
	>20			2	1			13
	Total	5	13	8	3	5	4	40

Seventy five per cent of the respondents, a significant majority, received their initial pedagogical training before they started teaching while only three respondents reported that they were yet to undergone any formal pedagogical training. With respect to academic qualifications, 48 per cent, had a bachelor's degree, while 28 per cent had a master's degree and eight per cent had obtained a PhD. This reflects significant progress in attaining higher formal qualification: at entry into the profession, none reported holding a master's degree. Thus, over their working lives, 35 per cent had obtained post graduate qualifications. Half of these who had obtained postgraduate qualifications indicated that they had opted to change their postgraduate specializations from their initial teaching subject specialization. Examples given included educational administration, procurement and strategic management. Sixty three per cent of the respondents had prior work experience before becoming teachers.

Table 2: Comparison of TVET teachers' current qualifications to their entry qualifications

Qualification	At entry	Current
Diploma	10	2
Second Diploma in teacher education	6	5
Bachelor	24	19
Masters		11

PhD		3
Total	40	40

Most of the respondents were from the Engineering and business management departments: 17 and 8 respectively. Many of the teachers, 63 per cent had been assigned non-teaching responsibilities such as student guidance and counselling, responsibility for sports activities and managing departmental activities such as examinations.

### Content of CPD

Given that effective CPD is a characterized by strong focus on content that is relevant to teacher needs, one aim of the study was to identify what TVET teachers wish to learn the most in comparison to the learning they actually receive from formal leaning activities. Chart one shows content teachers said they desired to learn the most in comparison with the content they actually received.

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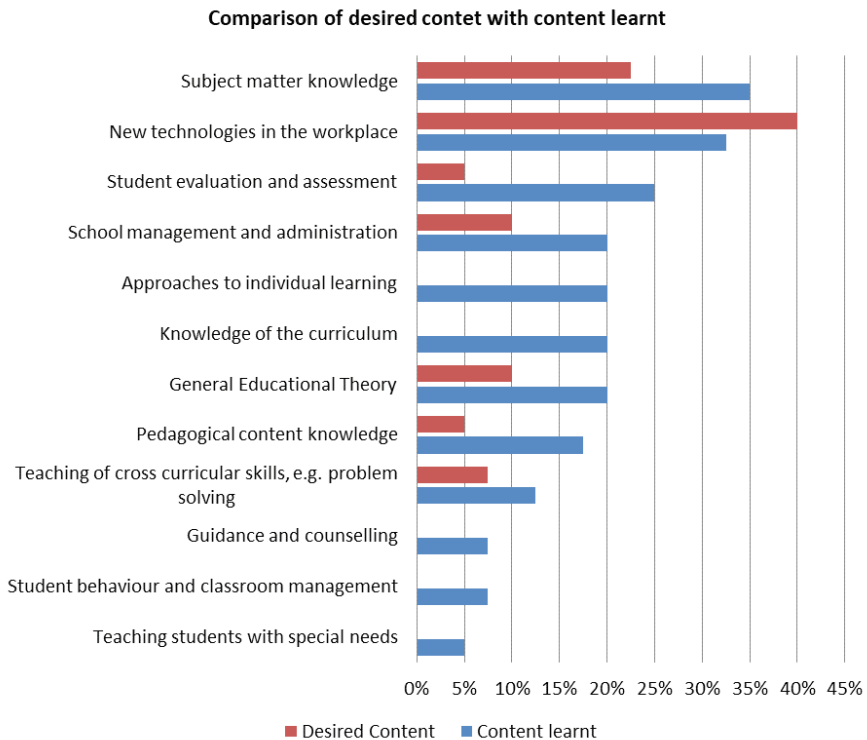


Chart one: Comparison of desired content with content learnt

Many of the teachers wished to learn about new technologies in the workplace and subject matter related to their subjects and they had in fact received such content

in the past. However, much of the content they received was not actually desired by teachers.

### Learning Methods

When asked to identify the most common formal learning method they used, many teachers identified workshops and seminars. The least popular method was attending educational conferences. With respect to informal learning activities, teachers frequently engage in professional dialogue with colleagues but rarely engage in collaborative learning activities such as lesson observations, school visits or participating in teacher clubs. Teachers also reported rarely engaging in the reflective learning practice of writing reflections about their practice and outcomes. These findings are summarized in the chart below.

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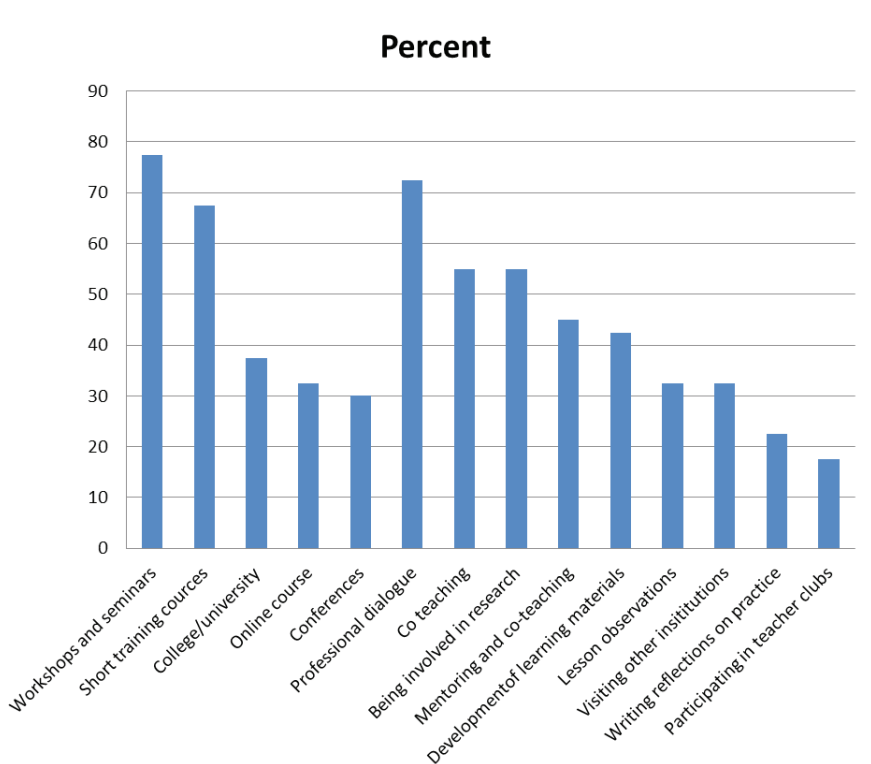


Chart two: Learning methods used by teachers

### Changes in Practice due to CPD

As a strong reflection on the focus on subject knowledge in their learning, teachers most frequently update the content they teach as a result of their learning. Some teachers said they used the acquired knowledge to improve their teaching methods. Less common is using the new knowledge to deal with classroom challenges or improve assessment and evaluation methods. While teachers focus on

subject content and consequently update their teaching content, they do not focus on pedagogical skills that they could use to support learning and resolve learning difficulties. See chart three below.

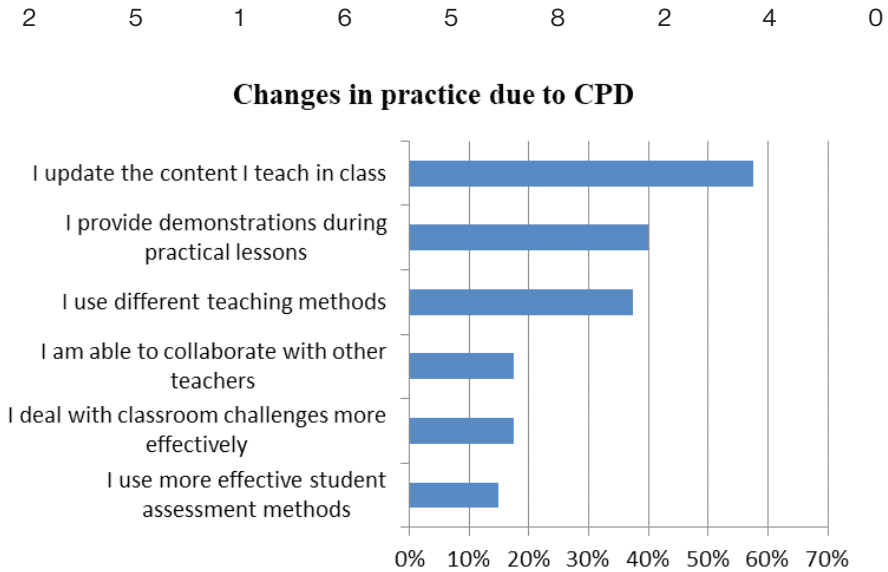


Chart 3: Changes in teaching practices due to CPD

**Motivation for CPD and obtained benefits**

Fifty eight per cent of the respondents reported being motivated to learn by the prospect of career progress. Improving subject knowledge mastery was the second most common motivator which was selected by 55 per cent of the respondents. Career change was not a strong motivator, with only 13 per cent of the respondents selecting it. Other motivators are improving teaching skills, 53 per cent, improved student performance, 48 per cent and personal satisfaction at 30 per cent.

However, only a few of the teachers got the much desired outcome of a promotion or appointment to a managerial position. Only 20 per cent of the respondents reported having been promoted and only ten per cent were appointed to a managerial position. However, improved teaching skills were reported by 80 per cent of the respondents, which matches closely with the improved student results reported by 65 per cent of the respondents. Other benefits were confidence and respect from colleagues reported by 45 per cent and 15 per cent of the respondents.

**Costs and Challenges for engaging in CPD**

Costs associated with continuing professional development were identified as the most significant challenges. Many teachers reported finding continuing professional development to be too expensive, perhaps because many teachers view only formal learning activities as legitimate CPD. See table 3 below.

Table three: Costs and challenges associated with CPD

	Cost	Work-load	Family obligations	Lack of employer support	Lack of prerequisite qualifications	Lack of relevant professional development opportunities
Strong Challenge	31	20	12	17	6	9
Moderate challenge	4	10	15	10	8	12
Not a challenge	1	2	3	5	6	7

Teacher work load is also a significant limiting factor with 75 % of the respondents finding it as either a strong challenge or a moderate challenge. Family obligations and the lack of support from the employer are also significant challenges to a significant number of respondents. More than half of the respondents indicated that unavailability of relevant CPD opportunities limits their professional development. However, the lack of prerequisite qualifications was not identified as a significant challenge.

### **Suggested policies**

Asked what recommendations they would propose to encourage and enhance continuing professional development, respondents made various recommendations. Many suggested funding for continuing professional development. This suggested that teachers view formal learning as the only legitimate form of CPD. Others recommended stronger and more specific measures such as tying promotions to evidence of continuing professional development

## **Discussion**

### **Teachers' qualifications**

Majority of the teachers have received initial teacher education and therefore possess basic subject and pedagogical knowledge. This is similar to the practice in most countries where a basic requirement for teaching in TVET is a bachelor's degree (Gamble, 2013). However, many teachers felt they needed to acquire more subject specific knowledge and learn about work place technologies. However, few felt the need to receive pedagogical training. This suggests that they regarded their pedagogical skills to be adequate while their subject and technical knowledge to be inadequate. It is not clear why this dichotomy exist. The questionnaire will be updated to query their perception on the adequacy of their subject, pedagogical, and practical experience, as well how satisfied they felt with their initial teacher education.

Gamble (2013) argues that much of TVET remains largely based on the operational expertise developed at the point of work. TVET teachers however risk losing their expertise if they do not have regular contact with the world of work. The low rates at which TVET teachers participated in lecturer industrial attachments thus risks blinding teachers to current developments taking place in the world of work for which they are teaching their students about. Regular contacts between TVET teachers and workplaces should therefore be institutionalized to ensure that teachers remain in touch with the on goings in the world of work. It is unlikely that Kenya's TVET will in future be held in high regard if her teachers lose the operational expertise on which much of TVET is premised.

### **Limited use of diverse, and effective forms of CPD**

Initial findings suggest that TVET teachers engage in various forms of CPD, but their underlying conception and therefore the main approach has been towards formal CPD. Teachers engage in informal CPD practices but these are limited.

More effective methods, such co-teaching, classroom observation, mentoring and coaching are not frequently practiced. Professional development therefore appears to be largely solitary with limited group learning. It appears that avenues for collaborative learning, externalization and combination and internalization of new knowledge lack (Hargreaves, 2000). Individual teachers lack avenues to share what they have discovered and help their colleagues learn from them. And in the same way that they lack avenues to transfer what they know to colleagues, they lack avenues to receive what their colleagues know. It is essential that avenues for sharing knowledge are developed and supported. Future studies will investigate why TVET teachers rarely engage in more collaborative learning practices.

Having adopted a conception of Continuing Professional Development that largely focuses on formal and university based courses, TVET teachers perceive CPD to be expensive. Thus, similar to the findings by David & Bwisa (2013) TVET teachers find costs associated with CPD to be a significant limiting factor. It is therefore important that teachers are supported on the one hand to meet the costs associated with Continuing Professional Development, and on the other hand, encouraged to adopt diverse forms of CPD that while more effective than university based courses are more cost effective.

### **Limited incorporation of what is learnt**

The study also suggests that teachers incorporate their learning into their practice. However, incorporation into practice was limited to updating the content they learn and less frequently in changing their teaching practices. This may be explained in part by the heavy focus on subject knowledge reported. Few of the respondents indicated a strong interest in learning and using new teaching methods.

### **Role of reward structure in influencing conceptualization of what legitimate CPD is**

An important implication of this finding is the need to sensitize teachers on the wider and more effective means of CPD. Given that incentives matter and influence behaviour and perception, the incentive scheme should be changed to reward diverse forms of learning. Rewarding informal learning practices would encourage teachers to identify them as real and legitimate forms of learning.

While the formal policy does not require post graduate qualifications for promotions, it appears that promotions weakly correlate with post graduate qualifications. The cross tabulation of work experience with job group and the low number of who teachers reported that their CPD led to a promotion suggest that promotions are more strongly tied to work experience in years and formal qualifications. Teachers therefore have a stronger incentive to seek formal higher qualifications. To encourage CPD, it is advisable to tie more strongly promotions and other forms of career progress to formal and informal learning.

### **Questionnaire Development**

An important aim of the study was to test the data collection instrument for the main study and guide its refinement. Items were therefore evaluated on how well they were responded to. As an example, many of the items that required written responses were not responded to. When the questionnaire was being issued to the respondents, they were encouraged to critically review the questionnaire and give their feedback. Some questions were found to be ambiguous and will be re-phrased. Others that were found to be repetitive or that did not yield useful information will be dropped.

### **Conclusions and Recommendations**

The pilot study yielded new insights into the continuing professional development of TVET teachers while introducing new questions. One particular question is lack of interest in teaching methods that could potentially lead to the much desired improvements in student performance. The pilot study also helped refine the questionnaire. Some of the items that were found not to yield useful information were dropped. To help refine the data collection instrument further, factor analysis of the questionnaire shall be done.

## **References**

- Billet, S. (2011). *Vocational Education: Purposes, Traditions and Prospects*. Dordrecht: Springer Netherlands.
- Boyle, B., Lamprianou, I., & Boyle, T. (2005). A Longitudinal Study of Teacher Change: What makes professional development effective? Report of the second year of the study. *School Effectiveness and School Improvement*, 16(1), 1–27. <https://doi.org/10.1080/09243450500114819>

- Boyle, B., While, D., & Boyle, T. (2004). A longitudinal study of teacher change: what makes professional development effective? *Curriculum Journal*, 15(1), 45–68. <https://doi.org/10.1080/1026716032000189471>
- David, M. N., & Bwisa, H. M. (2013). Factors Influencing Teachers' Active Involvement in Continuous Professional Development: A Survey in Trans Nzoia West District, Kenya. *International Journal of Academic Research in Business and Social Sciences*, 3(5), 224–235.
- Desimone, L. M. (2009). Improving Impact Studies of Teachers' Professional Development: Toward Better Conceptualizations and Measures. *Educational Researcher*, 38(3), 181–199. <https://doi.org/10.3102/0013189X08331140>
- Ferej, B. A., Kitainge, K., & Ooko, Z. (2012). Reform of TVET Teacher Education in Kenya : Overcoming the Challenges of Quality and Relevance. *Triennale on Education and Training in Africa*, 1–23.
- Fraser, C., Kennedy, A., Reid, L., & McKinney, S. (2007). Teachers' continuing professional development: Contested concepts, understandings and models. *Journal of In-Service Education*, 33(2), 153–169. <https://doi.org/10.1080/13674580701292913>
- Gamble, J. (2013). Why improved formal teaching and learning are important in technical and vocational education and Training (TVET). In *Revisiting global trends in TVET: Reflections on theory and practice* (pp. 204–238). Bonn: UNESCO-UNEVOC.
- Guskey, T. R. (2002). Professional Development and Teacher Change. *Teachers and Teaching*, 8(3), 381–391. <https://doi.org/10.1080/135406002100000512>
- Halász, G., Looney, J., Michel, A., & Sliwka, A. (2018). *Boosting teacher quality: Pathways to Effective Policies*. Retrieved from <https://publications.europa.eu/en/publication-detail/-/publication/95e81178-896b-11e8-ac6a-01aa75ed71a1/language-en>
- Hargreaves, D. H. (2000). The Production, Mediation and Use of Professional Knowledge Among Teachers and Doctors: A Comparative Analysis. In OECD/CERI (Ed.), *Knowledge management in the learning society*. (pp. 219–238). Paris: Organisation for Economic Co-operation and Development.
- Hoeckel, K. (2008). Costs and Benefits in Vocational Education and Training. *Oecd*, 3, 17.
- Kigwilu, P. C., Akala, W. J., & Wambua, J. M. (2016). Challenges Facing The Effective Implementation Of Artisan And Craft Courses In Catholic Sponsored Community Colleges In, 6(2), 27–36. <https://doi.org/10.9790/7388-06212736>
- McGrath, S. (2011). Where to now for vocational education and training in Africa ? *International Journal of Training Research*, 9(1), 35–48. <https://doi.org/10.5172/ijtr.9.1-2.35>
- Mundia, C. N. (2017). Nairobi Metropolitan Area. In Yuji Murayama, Courage Kamusoko, Akio Yamashita, & Ronald C. Estoque (Eds.), *Urban Development in Asia and Africa* (pp. 293–317). Singapore: Springer, Singapore. [https://doi.org/10.1007/978-981-10-3241-7\\_15](https://doi.org/10.1007/978-981-10-3241-7_15)
- Oketch, M., & Peliwe, L. (2017). Introduction Keynotes (Vocational Education and Training in Sub-Saharan Africa ). In F. Eicker, G. Haseloff, & B. Lennartz (Eds.), *Vocational Education and Training in Sub-Saharan Africa: Current Situation and Development*. Bielefeld: W. Bertelsmann Verlag. <https://doi.org/10.3278/6004570w011>
- Olofson, M. W., & Garnett, B. R. (2018). Measuring the impact of professional development for student-centred pedagogies. mixed-methods study. *Professional Development in Education*, 44(3), 342–355. <https://doi.org/10.1080/19415257.2017.1347805>
- Postholm, M. B. (2012). Teachers' professional development : a theoretical review. *Educational Research*, 54(4), 405–429. <https://doi.org/10.1080/00131881.2012.734725>

- Richter, D., Kunter, M., Klusmann, U., Lüdtke, O., Baumert, J., Kunter, M., ... Richter, D. (2010). Professional development across the teaching career: Teachers' uptake of formal and informal learning opportunities. *Teaching and Teacher Education*, 27(1), 116–126. <https://doi.org/10.1016/j.tate.2010.07.008>
- Sang, A. K., Muthaa, G. M., & Mbugua, Z. K. (2012). Challenges Facing Technical Training in Kenya. *Creative Education*, 3(1), 109–113.
- Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). Teacher Professional Learning and Development. Best Evidence Synthesis Iteration. *Education*, 33(8), 3–15. <https://doi.org/10.1111/j.1744-7984.2007.00116.x>
- Tripney, J. S., & Hombrados, J. G. (2013). Technical and vocational education and training (TVET) for young people in low- and middle- income countries : a systematic review and meta-analysis. *Empirical Research in Vocational Education and Training*, 5(3), 1–14.
- Tur Porres, G., Wildemeersch, D., & Simons, M. (2014). Reflections on the emancipatory potential of vocational education and training practices: Freire and Rancière in dialogue. *Studies in Continuing Education*, 36(3), 275–289. <https://doi.org/10.1080/0158037X.2014.904783>
- UNESCO. (2016). *Certified copy of the Recommendation concerning Technical and Vocational Education and Training (TVET)* (Vol. 33). Paris.
- Van Der Berg, S., Burger, C., Burger, R., Vos, M. DE, Rand, G. DU, Gustafsson, M., ... Von Fintel, D. (n.d.). Low quality education as a poverty trap (11 No. 25).
- Wheelahlan, L. (2010). Literature review: The quality of teaching in VET. Melbourne: L.H. Martin Institute for Higher Education Leadership and Management Melbourne Graduate School of Education. Retrieved from [https://www.academia.edu/32171786/Literature\\_review\\_The\\_quality\\_of\\_teaching\\_in\\_VET](https://www.academia.edu/32171786/Literature_review_The_quality_of_teaching_in_VET)