

Digital Literacy Capabilities of TVET Institutions for the Future of Work

*Walter Odondi, Karen Arisa, Virginia Wangari
Zizi Afrique Foundation, Nairobi, Kenya*

Abstract

The government of Kenya has accepted Technical Vocational Education and Training (TVET) as a strategic pathway to socio-economic transformation. Policy statements, macro-development frameworks and trends now recognize that TVET is an enabler to accelerate functional skills for the labour market by imparting technical skills, social skills and values. Budget allocations for the sub-sector have risen in the last decade, with projections pointing at positive trajectories. These steps are taken to leapfrog development, reorient Kenya as a middle-income economy while dealing with the systemic and endemic challenges of youth unemployment. The global changes occasioned by shocks such as COVID-19 have accelerated the call for reorientation of work environments due to the shift in the fundamentals of employer-employee relations. These changes are happening when TVET is widely being recognized as the game-changer in the future of work. However, concerns are still evident on whether the curriculum available can meet this ambitious goal. This study presents national study report findings that explored the production of skills and competences of youth through Kenya's TVET system. The study examined the extent to which TVET students exhibited technical, academic, digital and life skills and values through the whole youth development lenses. The study was conducted in 182 TVET institutions at all levels in nine counties. This paper looked at two main questions: 1) what are the TVET capabilities (organizational and technical readiness) to implement digital training? 2) What are the instructors' capacity (pedagogical readiness) to implement digital training? The findings show that even though instructors capacity is important in ensuring quality if digital training but most of the instructors don't possess the skills to offer digital training This paper concluded that we needed to invest in building digital capabilities by improving infrastructure and adaptive training models for the future of work. The paper recommends that the Ministry of Education should embark on a robust skilling of instructors and also build digital infrastructure to facilitate modern training models for the future of work.

Key words: *TVET, employment, skills, digital literacy*

Introduction

The world today is in the digital age or what is commonly known as the information age. We live in a world where social, economic and political activities are dependent on information and communication technologies. This era strongly came to light as a consequence of the pivotal role played by Information Communication Technologies (ICT) when the COVID-19 pandemic ravaged the world. The pandemic instigated social distancing, partial and total lockdowns of countries and closures of learning institutions and business places; however, virtual normalcy was adapted through ICT

To be able to maximize and utilize ICT, one has to possess digital literacy. The American Library Association (2013) has defined digital literacy as the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills. This has been corroborated by the UNESCO Institute for Statistics and the Global Alliance to Monitor Learning (2018c) which has defined digital literacy as the ability to define, access, manage, integrate, communicate, evaluate and create information safely and appropriately through digital technologies and networked devices for participation in economic and social life.

In a world that change is constant and learning is continuous, 21st-century skills are essential. These are knowledge, skills, abilities and learning dispositions that are essential in both life and work. The Partnership for 21st Century Skills (2007) has identified digital skills as part of the 21st century skills. In Kenya, the Basic Education Curriculum has acknowledged the importance of digital literacy in lifelong learning which may take place in and out of school.

Technical and Vocational Education and Training (TVET) has been going through significant changes in the past two decades, transitioning from the industrial to the information age. According to Richardson and Herd (2015), many developed and developing countries are establishing strategies to reform TVET to meet the demands of the knowledge economy. Chen and Dahlman (2005) have defined the knowledge economy as an economy which is driven by knowledge. It is characterized by infinite knowledge and high technology investment.

UNESCO (2011) has highlighted digital literacy as an essential skill as it improves employability and enables the acquisition of other important skills. TVET relies on instructors who have occupational skills and theoretical knowledge. The instructors must possess digital skills in order to transfer these skills to the students. Moreover, instructors need to incorporate ICT into their teaching to enhance the learning processes, consequently improving the learning outcomes.

Purpose of the Study

The study's general objective was to investigate the factors influencing digital literacy capabilities for the future of work.

Objectives of the Study

- i. To examine TVET capabilities (technical and organizational readiness) to implement digital training
- ii. To investigate the instructors' capacity (pedagogical readiness) to implement digital training.

Significance

This study will be significant to policymakers as it will provide a basis for evidence-based intervention on issues related to digitization of TVET for the future work. It will also be useful to the TVET practitioners who will use this study as a base for the decisions they will make on building digital capabilities for the future of work. Also to other researchers who will use it as a base for further studies in the same field.

Literature Review

The achievement of Kenya's Vision 2030 blueprint is pegged on the country's ability to offer quality education. This is true also in TVET, which has proved to be an important pathway for the development of human capital and the building of a technical workforce for national development (Afeti; Republic of Kenya, 2012).

TVET is associated with training in public and private educational establishments or other forms of formal or informal instruction aimed at providing access to lifelong learning resources to all segments of the society. It comprises education, training and skills development relating to a wide range of occupational fields, production processes, services and livelihoods. As a component of lifelong learning, TVET can take place at secondary, post-secondary and tertiary levels. It includes work-based learning, continuing training and professional development that may lead to qualifications. TVET also includes a wide range of skill-development opportunities attuned to national and local contexts. Learning to learn, the development of literacy and numeracy skills, transversal skills and citizenship skills are integral components of TVET (UNESCO, 2015).

The focus on the potential of TVET to equip youths with the available work opportunities and in turn, impact upon global poverty and social stability has been brought by the increased policy importance placed on higher-order skills and their central role in the global knowledge-based economy (King & Palmer 2010; Peano et al. 2008; UNESCO, 2010, 2012).

To enhance the TVET graduates, who are approximated to be 500,000 to 800,000 in Kenya from about 10 million in Africa, success in labor market and bridge the unemployment gap, there is need to prepare them through whole Youth Development approach. Similarly, the government should be keen on building the capacity of TVET trainers by upgrading their skills to align with the needs of their related industries and incorporating components of soft skills in the ongoing curriculum reforms with a view of wholesome development of learners. Emerging literature on the automation and digitization era show that soft skills enable individuals to learn and hence adapt to a fast-changing technological era (Nebe & Mang'eni, 2016; Sikenyi, 2017).

Globally, ICT has been recognized as having the power to transform economies and societies through sharing of knowledge and information. By inference or design, the affordances of technology in daily lives are also being explored as new modes of teaching and learning in and out of the training center, with content delivered interactively and asynchronously, in a blended or totally online format (UNESCO, 2010, 2012). As an applied construct, technology at first glance also appears particularly suited to TVET transformation agendas. Collaboration online without face-to-face contact is not frictionless; it requires new skills (digital literacy) and hidden collaboration work, above and beyond the actual work.

The COVID-19 pandemic has drawn attention to the shortcomings the African TVETs have when it comes to offering remote learning to their students. This has been due to the resource and technological shortcomings and the limitation in capabilities of the instructors to offer training to the students online. This has portended the need for us to look at the vital role of digitization of TVET training so as to be able to equip the Kenyan youth for the future of work and to ensure that we are able to sustain training even in the midst of a pandemic (Bodo & Nader, 2021). This paper has been adapted from a WYD national study by APHRC on Assessing the production of Core Values and Capabilities among youth in TVET institutions in Kenya. In particular, the paper investigates the digital literacy capabilities of TVET Institution for the future of work.

Research Methodology

A research design is a set of methods and techniques for collecting and analyzing data on the factors that are defined in a given study. It depicts how the researchers established their research question and purpose and how they presented their findings based on the data collected during the study period. This research used a cross-sectional research design and included 182 TVET Institutions at all levels, with a focus on the 364 TVET accredited centers. The research was carried out in nine Kenyan counties, including Garissa, Kakamega, Kisumu, Meru, Mombasa, Nairobi, Nyeri, Turkana, and Uasin Gishu. The regions were chosen based on the existence of national polytechnics with the exception of Turkana County, which does not have one and the need for disadvantaged youth representation in the counties.

The research included 3640 students and 364 tutors from 182 institutions across Kenya who were between 15 and 25 years. In each institution, ten first-year students and ten final-year students were chosen randomly, with gender and program of study taken into account. A female and a male teacher were both chosen at random.

The study relied heavily on questionnaires for data collection, with open-ended questions that allowed respondents to expand on their answers, and it was subject to some ethical concerns. Via a signed Consent and Briefing Letter, all participants expressed their written approval of their inclusion in the study. Members of the study were also asked to sign a Debriefing and Withdrawal Letter at the same time. Both letters were written to inform participants that their participation in the study was entirely voluntary and that they were free to leave at any time and for any cause.

Findings

A total of 3640 students aged 15 to 25 years formed part of the research participants. Of these participants, 57.3% were of the female gender, whereas the remaining at 42.7%, were male respondents.

The result findings responded to the two question on the TVET capabilities to implement digital training by looking at the organizational readiness and technical readiness and the instructors' capacity to implement digital training by looking at the pedagogical readiness The findings show the results as below

Organizational Readiness

According to Yara and Otieno, (2010), the quality of any training (TVET included) and students' success in the particular training is pegged on the availability of physical resources and equipment. For these equipment to also ensure that learning matches the needs of the industry, then they need to keep up with the industry trends. Through session paper no. 6 of 1988, the government withdrew the learning material support to TVET institutions, which has affected the TVETs with most of them still using the old dilapidated technologies to offer training to their students (TVET report, 2003). According to UNESCO (2010), the dependence of old and obsolete equipment affects the quality of training, which affects the training of the youth for the future of work.

The study results show that Vocational Training Centers are inadequately equipped at 23%, followed by the National Polytechnics and then finally the Technical and Vocational Centres. This is a big challenge considering that the VTCs take the largest numbers of the TVET institutions in the country (TVETA website, 2021). This shows that a big number of students are affected by the challenges of inadequate equipment. More national polytechnics at 50% have sufficient equipment, followed by the TVCs at 45.9% and VTCs still lags behind with a paltry 17.95%. From the study it is evident that the National Polytechnics are well equipped to train on digital skills whereas the Vocational Training Centers are not. The reverberated effect is the low acquisition of skills by the students due to ineffective instructional delivery (Dasman, 2011)

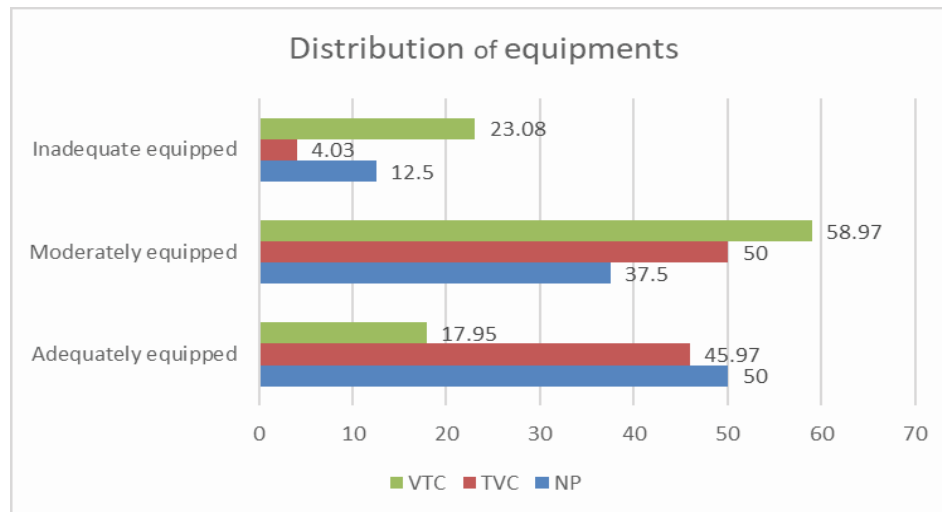


Figure 1: Distribution of equipment in TVET

Technical Readiness

The study asked the students participants to respond to four digital skills questions. The findings indicate that more students at the Vocational training Centres level could not respond to a single digital skills question compared to their counterparts at other levels. This shows that the better equipped an institution is the better the quality of training.

Still under the vocational centers, more female at 14.8% could not respond to at least one question compared to male at 11.4%; this shows that more male students were able to respond to questions than their female counterparts. Therefore there is need to ensure a targeted training of female students to be able to compete with their male counterparts in acquiring digital learning for the future of work. Averagely 59.8% could answer all 4 questions, which is slightly above the average mark. If this was to be applied to the hundreds of thousands of students gaining entry to the job market then there is a huge chunk that gets in the sector while under baked.

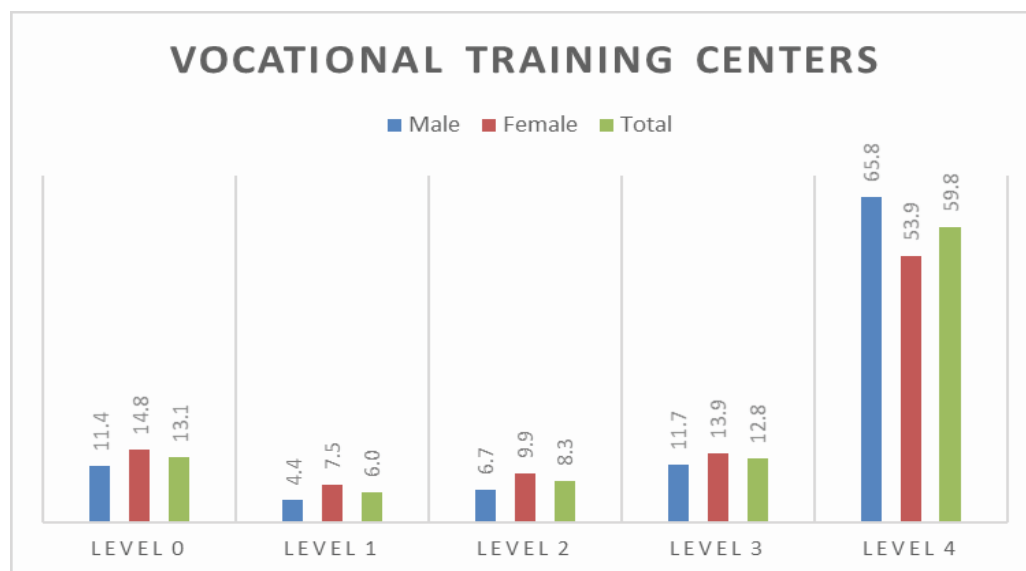


Figure 2: Digital Skills Levels among Trainees in Vocational Training Centers

Pedagogical Readiness

The study sought to find out on the level of the capabilities of the instructors to offer skills, including Digital training. Of the 364 instructors who responded to the study, 54%

were men and 46% were of the female gender. 65% of the trainers had some post-secondary education, but 5% had not completed secondary. 53% had a diploma, but 32% either had no technical qualification and hold just the artisan certificate that they train others in; only 14% cited this as a challenge. 58% of the trainers have not gone for any refresher training for the last two years, 41% said that poor training facilities/equipment/materials was the biggest challenge they faced in their work.

The study found out that digital training outcomes are largely dependent on the instructor's capacity and competencies level for the improvement of the future of work. It however found that not most of the instructors possess those necessary skills to train the trainees on digital literacy therefore there was need to conduct a needs assessment on them, ascertain the level of digital competencies and then train them to use it for training

Conclusion

This study concludes that there are four very important areas for the successful integration of ICT in TVET This included; pedagogical readiness, strategic readiness, organizational readiness and technical readiness. The shift in training models requires a shift in the trainers, trainees and the content to be shared for it to be successful. Therefore, there is a need for the institutions to invest in these factors if they would like to train them for the future of work that is already creeping in.

Recommendations

This study recommends that the institutions develop more flexible learning solutions that make better use of distance learning and digital solutions as part of their curriculum and for any emergency response. It also encourages policy alignment to support build capacity of TVET instructors and managers in training and engaging using online tools platforms and teaching and learning models to make the best use of digital resources and. Government should embark on a robust skilling of instructors and support building of digital infrastructure to facilitate modern training models, design alternative and non-formal educational models for digital training, and provide a framework for skilling, reskilling and upskilling vulnerable trainees. It should develop policy to enhance capacity of TVETS to digital skills, and provide budgetary allocation of funds to establish ICT centers. Finally, TVET institutions should invest in online learning platforms such as Zoom to enhance their capacity to offer distance learning.

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