



Chapter 3

Constraints to the Utilization of Technology–Enhanced Learning Tools by Lecturers for Teaching Vocational and Technical Education Courses

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ABSTRACT

This study examined constraints to the use of TEL among vocational and technical education lecturers. Using an explanatory mixed-methods design, data were collected from 318 lecturers through a questionnaire and interviews. Quantitative data were analysed descriptively, while qualitative data were thematically analysed. Findings showed reliance on accessible tools such as WhatsApp, Zoom, and Telegram, with limited use of learning management systems. Key constraints included inadequate ICT infrastructure, unstable power supply, poor internet connectivity, and weak institutional support. Qualitative results indicated that these challenges interact to shape adaptive reliance on low-cost technologies. The study concludes that while TEL has strong potential to enhance teaching and practical skills development, its effectiveness is constrained by systemic challenges, requiring coordinated investment in infrastructure, institutional support, and capacity building.

INTRODUCTION

The occurrence of epidemics, pandemics, and natural disasters such as floods, cyclones, earthquakes, and hurricanes has increasingly become a defining feature of contemporary society. These disruptions extend beyond immediate human and economic consequences, exerting profound influence on social systems, institutional structures, and particularly the organisation and delivery of education (Bozkurt & Sharma, 2020; Hodges et al., 2020; Orji et al., 2021). Historically, such events have reshaped societal practices and redefined modes of interaction, compelling institutions to adapt to new realities (Williamson et al., 2020; Crawford et al., 2020). The COVID-19 pandemic represents one of the most significant disruptions in recent history, having affected approximately 1.6 billion learners across more than 190 countries and impacting over 94% of the global student population, with nearly 99% located in low and lower-middle-income countries (United Nations, 2020). This unprecedented interruption exposed the structural fragility of traditional face-to-face instructional systems and accelerated the global transition towards technology-mediated learning environments. As a result, educational institutions are increasingly required to explore alternative modes of interaction and transform conventional pedagogical approaches into digitally supported systems.

Technology-enhanced learning (TEL) has emerged as a central response to this transformation. It is closely associated with distance education and is often described using related terms such as online learning, web-based learning, blended learning, computer-mediated learning, and mobile learning (Palvia et al., 2018). Despite these varied terminologies, TEL fundamentally represents a shift in pedagogical orien-

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