Assessing the Feasibility of Adopting Blended Delivery of TVET at a Teacher Educator Institution in Ghana

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Abstract

Blended delivery is a teaching and learning approach that combines both classroom face-to-face and online learning experiences. The adoption of blended delivery by technical and vocational education and training (TVET) teacher educators is essential to meet the challenges of 21st-century skills training, especially to build the capabilities of institutions against turbulence such as COVID-19. This study, therefore, assesses the feasibility of adopting blended delivery of TVET at a teacher-educator institution in Ghana. A descriptive survey design was adopted in this study through the use of a questionnaire and an interview guide. The target participants for the study consisted of TVET lecturers, administrators and students at a teacher educator institution in Ghana. A 5-point Likert scale; from strongly disagree (1) to strongly agree (5) was used for the responses in the questionnaire. The variables in the questionnaire were analysed using descriptive statistics. It was found that digital skill development, facilitation of distance learning, increase enrolment, improving access, workplace training, and addressing classroom shortage were the benefits in blended learning. Video messaging, podcast, email, and discussion forum were the preferred communication tools. The most preferred mode of delivery was hands-on real-world application through workplace learning, and face-to-face interaction. Use of on-the-job assessment, recorded demonstration, and project-based method preferred assessment methods. Lack of resource and inadequate knowledge and skills in the blended delivery methods were found to be the key challenges. The study, therefore, concludes that it is feasible to adopt blended delivery of TVET in the institution. It is recommended that further training should be conducted for the staff of the institution to prepare them adequately for the adoption of blended TVET delivery.

Keywords: Blended delivery, face-to-face earning, online learning, skills development, teacher educators, teacher educator institution.

Introduction

Blended learning combines traditional face-to-face instruction with online learning components, aiming to leverage the strengths of both modalities. In the context of

Technical and Vocational Education and Training (TVET), this approach seeks to enhance the acquisition of practical skills while providing theoretical knowledge through digital platforms. The integration of blended learning in TVET is particularly pertinent given the sector's focus on skill development and the need to align training with industry requirements (Graham, Woodfield & Harrison, 2013). The adoption of blended learning has gained traction as a means to enhance accessibility, engagement, and skill development in TVET institutions (Udeze, 2024).

Blended learning offers several advantages for TVET institutions. It enhances accessibility by integrating online components which allows students access to learning materials remotely, and therefor reduces geographical barriers (Udeze, 2024). Interactive digital tools and multimedia resources in blended learning can make learning more engaging and effective (Udeze, 2024). Students can balance practical training with online coursework, allowing for personalized learning experiences (Manditereza & Chamboko-Mpotaringa, 2024). Furthermore, institutions can also optimize resources by reducing physical infrastructure needs while maintaining quality education (Chinengundu, 2021).

Despite its benefits, blended learning in TVET faces several challenges. Inadequate access to reliable internet and digital devices hampers the effective delivery of online components, particularly in developing regions (Gyamfi & Boateng, 2021; Oye et al., 2012). Many regions lack reliable internet access, making online learning difficult (Chinengundu, 2021). TVET relies heavily on hands-on training, which may not be fully replicable in an online environment (Manditereza & Chamboko-Mpotaringa, 2024). Educators may require training to design and facilitate blended courses effectively, necessitating professional development initiatives (Anthony, Kamaludin & Edwards, 2023). Both educators and learners require training to effectively use blended learning tools (Manditereza & Chamboko-Mpotaringa, 2024). Studies have explained that providing capacity-building for educators for digital learning is as important as the expected outcomes of TVET training (Addai-Poku et al., 2025; Addai-Poku et al., 2022; Sarpong et al., 2022). Ensuring the effectiveness of blended learning models requires robust assessment frameworks (Udeze, 2024).

To successfully adopt blended learning in TVET, institutions can consider some strategies such as developing modular courses to integrate online and practical components effectively (Udeze, 2024), using digital tools to evaluate students' skills and knowledge (Udeze, 2024), partnering with industry to provide hands-on training opportunities alongside online learning (Udeze, 2024), and equipping trainers with the necessary skills and competencies to facilitate blended learning (Manditereza & Chamboko-Mpotaringa, 2024). Establishing clear guidelines and support structures that facilitates the integration of blended learning modalities (Graham, Woodfield & Harrison, 2013). Engaging educators, administrators, and industry partners ensures that blended programs align with labor market needs and educational objectives (Alammary, 2019). Implementing feedback mechanisms and performance assessments helps in refining blended learning approaches for improved outcomes (Garrison & Vaughan, 2008; Means et al., 2010).

Several factors motivate the adoption of blended learning in TVET institutions (Commonwealth of Learning, 2022). They include the proliferation of digital tools and platforms that facilitates the delivery of online content, enabling institutions to expand their reach and offer flexible learning options; governments and educational bodies that advocate for the integration of technology in education to improve access and quality. For instance, the Commonwealth of Learning emphasizes strategies for blended TVET to enhance learning outcomes (Commonwealth of Learning, 2022). Blended learning supports personalized learning experiences, catering to diverse learner needs and promoting self-paced study.

Learner's preparedness for blended learning is critical to the success of blended TVET. A study by Tang (2022) on Bangladeshi TVET learners' readiness for a blended learning found that while learners exhibited positive attitudes toward technology and online learning, challenges such as limited digital skills and self-regulation affected their readiness.

UNESCO and the Commonwealth of Learning (COL) have emphasized the role of ICTs and blended learning in transforming TVET systems globally. Their joint publication highlights case studies from Sri Lanka, Jamaica, Germany, and others, showcasing how blended models can improve access and quality (Latchem, 2017). Ashraf et al. (2021) conducted a systematic review of blended learning literature, identifying a lack of research in developing countries and highlighting barriers such as limited ICT infrastructure and digital literacy.

In developing countries' perspective, a number of studies have been conducted in Africa, Cambodia, Malaysia, among others. Hashim and Hamidon (2022) examined the use of Google Classroom and the ADDIE model in Malaysian TVET institutions. Their study found that blended learning enhanced student engagement and supported 21st-century skills development. Mabille (2017) documented the adoption of blended learning at the TVET Academy in Cambodia, noting improvements in accessibility and learner outcomes despite infrastructure challenges. Isaacs (2017) explored the INVEST Africa initiative, which used mobile learning and low-tech solutions to deliver vocational training in rural communities. The study emphasized the importance of contextualized content and peer support. There is a lack of studies from Ghana perspective on adopting blended TVET in teacher education institutions. Therefore, this study explores the possibility of adopting blended delivery of TVET at a teacher-educator institution in Ghana.

The adoption of blended delivery in TVET holds promise for enhancing educational access, flexibility, and relevance. However, realizing its full potential necessitates addressing infrastructural, pedagogical, and institutional challenges. Ongoing research and collaboration among stakeholders are essential to develop effective models that cater to the unique demands of vocational education. The objective of the paper is to assesses the feasibility of adopting blended delivery of TVET at a teacher-educator institution in Ghana. To achieve this, a descriptive survey design was adopted through the use of a questionnaire and an interview guide for data collection.

Methodology

This study employed a descriptive survey design using a quantitative approach to assess the feasibility of adopting blended delivery of TVET at a teacher educator institution in Ghana. The target population consisted of lecturers, administrators and students in the faculties of technical education and vocational education of the Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development (AAMUSTED), Ghana. AAMUSTED was selected for the study because it is the only public university in Ghana which is mandated to train TVET teacher educators, and also exploring the blended delivery. A purposive sampling technique was use to select 75 participants who had prior experience and knowledge in blended learning.

Data was collected using structured questionnaire which comprised of close ended 5-point Likert-scale; from strongly disagree (1) to strongly agree (5) respons items with the following thematic sections: perceived benefits of blended learning, preferred delivery modes, perceived effectiveness of communication methods, assessment methods, usefulness of face-to-face and online assessment methods, challenges being faces and recommendations for improvement. The questionnaire was reviewed by three experts in blended learning, instructional design and TVET to ensure content validity. A pilot study was conducted with 10 participants to refine the questionnaire for clarity and reliability. Cronbach's alpha test was conducted on all the sections of the questionnaire yielding an alpha value of 0.79 which is above the recommended value of 0.7 (DeVellis, 1991), indicating an acceptable reliability of the questionnaire.

The questionnaire was self- administered in printed format. Data was collected over three-week period with the assurance of respondents' confidentiality and anonymity. Descriptive analysis was conducted to analyze the data using SPSS version 23, and graphical representation was made by the aid of Microsoft Excel.

Results and Discussions

Demographic characteristic of respondents

Out of the 75-questionnaire distributed, 50 were returned representing 66.7% returning rate. Majority of the respondents were females (62 %) who were above 30 years as shown in Table 1. Most of the respondents (70%) were lecturers with 20% of the respondents being students and the administrators were 10%. Close to half of the respondents (48%) have between 1 and 10 years of work experience whiles 42 % of the respondents have 10 years of work experience. This means that most of the respondents are familiar with the TVET education and their responses are based on their valued experience.

Table 1: Demographic characteristics of respondents

Parameter	Frequency	Percentage (%)
Gender:		
Male	19	38
Female	31	62
Total	**50**	**100**

Age Group:		
< 30	7	14
30 – 40	19	38
41 – 50	17	34
51– 60	7	14
Total	**50**	**100**
Role:		
Lecturers	35	70
Administrators	5	10
Students	10	20
Total	**50**	**100**
Years of Experience:		
< 1year	5	10
1 – 5 years	12	24
6 – 10 years	12	24
>10 years	21	42
Total	**50**	**100**

Perceived benefits of blended learning

Table 2 shows the results of the respondents' perceived benefits of blended TVET learning. Results indicate that respondents perceive that digital skill development (mean = 4.71), facilitation of distance learning (mean = 4.44), increase enrolment (mean = 4.27), improving access (mean = 4.22), workplace training (mean = 4.07), and addressing classroom shortage (mean = 4.04) are highly beneficial in blended learning. However, respondents slightly agreed that blended learning will appeal to younger students (mean = 3.91) and build learning community (mean = 3.76) whiles enhancing teaching quality (mean = 3.51). Respondents perceived that blended learning is less beneficial to improving assessment methods (mean = 3.47), enriching campus learning (mean = 3.40) and reducing faculty workload (mean = 3.00).

Studies show that blended learning based on smart learning environments significantly improve students' digital literacy due to the use of varied technological tools and platforms (Shi et al., 2022). It has also been proven to enhance critical thinking and knowledge transfer (Jou et al., 2016). This indicates the growing need for students to be digitally fluent, a 21st century skill vital in the tech-driven job market (Mushtaq & Iqbal,2024). Blended learning has also been shown to increase accessibility for learner who unable to attend traditional classes, thereby supporting distance education and expanding education across geographic constraints (Athony et al., 2022; Antwi-Boampong & Bokolo, 2022; Islam et al, 2022; Muhuro &Kagethe, 2021). This result supports increase enrolment as institutions are able to attract a more diverse student population with less burden on classroom infrastructure. It is also noteworthy that digital natives value interactive technology-enabled environments that foster peer engagement which resonates with blended learning principles (Maphosa, 2024).

The perceived low benefits of blended learning in reducing workload of faculty members are valid, similar to the finding of Zhao and Song (2021). Their work was evident that increased work load was the main problem faced by teachers in higher

education using blended learning approaches. Although in practice, blended learning increases faculty's workload especially in the design and early implementation stages, there is a long-term benefit of reduced workload. There is therefore the need to invest in faculty training and support to properly manage the workload, while improving digital pedagogy and feedback systems to strengthen perceived assessment and teaching quality.

Table 2: Respondents' perceived benefits of blended learning

Benefit	Mean rating ±SD
Develop Students' digital skills	4.71±0.73
Facilitate distance learners	4.44±0.69
Increase student enrollment	4.27±0.75
Improve access to education	4.22±0.67
Train students in workplace	4.07±0.96
Address classroom shortage	4.04±1.04
Build a learning community	3.76±0.88
Support institutional strategy	3.53±0.92
Enhance teaching quality	3.51±1.16
Improve assessment methods	3.47±1.01
Enrich campus learning	3.40±0.93

1-Strongly Disagree; 2-Disagree; 3-Nuetral; 4-Agree; 5-Strongly Agree

Preferred delivery mode

Table 3 shows the results of delivery mode of blended TVET learning. Results showed respondents' relative preferences for different delivery modes in a blended learning environment. Respondents most preferred mode of delivery is hands-on real-world application through workplace learning (mean = 4.13) and face-to-face interaction (mean = 3.91). Thus, they would want the use of these two modes often. This aligns with pedagogical best practices of TVET, which stresses of skill acquisition in real and authentic settings (Kobia et al. 2024). The role of workplace-based training cannot be down played in TVET education. It is highly beneficial in skills transfer and improved employability of students (Amish, 2024; Fleming et al 2021). Face-to-face or traditional classroom interaction also remain vital for motivation, engagement and immediate feedback. Studies show that learners who value personal interaction and structured in-person learning are not attracted well-structured smart classrooms (Photopoulos et al. 2022). Dzemidzic Kristiansen et al (2019) also state that face-to-face promotive interaction led to successful cooperative learning. Respondents would also sometimes like the use of virtual classes (3.22) and learning management systems, LMS (3.06). this is evident in figure 1 where 50% of the respondents want up to half of the lesson online. A significant percentage of the respondents (32%) would prefer only a quarter of the lesson online, whiles less than 20% of the respondent are comfortable with having more than 50% of their lessons online. Empirical study by Rodrigo & Planto (2022) proves that 50 % -50 % hybrid learning modalities have significant effect on the academic performance of students compared to 70 % - 30% approaches. The virtual classes being accepted but not the most preferred mode could possibly due to issues of

connectivity or reduced interaction. While virtual classes increase access to learners, their satisfaction is influenced by the strength of interaction (Gopal et al 2021). Similar to face-to-face learning, active participation and interaction are key performance indicators of the virtual mode of delivery (Marco-Fondevila et al., 2022). Respondents may not be comfortable to often use the LMS platform. This may due to the lack of digital skills on its usage or lack of interactivity. The efficiency of LMS usability has been linked to content quality, instructor presence and the ease of navigation (Al-fraihat et al 2025). Therefore, a balanced approach of up to 50% of online delivery for theoretical concepts, digital skills and assessment while keeping practical and workshop session in-person is a good starting point.

Table 3: Respondents most preferred delivery mode

Mode	**Mean rating** ±SD
Workplace training	4.13±0.86
Face-to-face sessions	3.91±0.72
Virtual classes	3.22±0.66
Learning Management System (LMS)	3.09±1.03

Effectiveness of communication methods in blended learning

Communication tools are the drivers of blended learning. Results in Table 4 shows that respondents ranked video messaging (4.05), podcast (3.89) Email (3.82) and discussion forum (3.68) as the top most effective communication tools (Table 4). Video messaging is considered most effective likely due to its unique features which combines visual, auditory and emotional cues. Learners has the flexibility of playing them at their convenience. Asynchronous video tools enhance learning through improved engagements and understanding (Borup et al. 2011). Podcast also offers flexible mobile learning options especially for auditory learners, while email remain effective for official communication, instructions and follow-up. Podcast mediated learning approaches have been proven to be effective communication tool in the blended learning environment (Hartono & Synrifuddin, 2024). Emails also help improving clarity and ensure good record keeping. Discussion forums allow peer interaction and reflective thinking. However, it rides on active facilitation. Discussion forums strengthen students' autonomy and deep learning in an asynchronous study mode.

Respondents perceived that virtual classes (mean = 3.41), and SMS (mean = 3.07) are moderately effective communication tools in blended learning. Even though virtual classes are useful in synchronous learning or real time interactions, technical issues, learner fatigue and passive participation may lower their effectiveness. On the other hand, SMS is quick and accessible but lacks depth and structure.

Communication tools such as collaborative document sharing (mean = 2.95), and web conferencing (mean = 2.95) were considered the least effective by the respondents. Collaborative document sharing was scored as not effective probably due to lack of

familiarity, digital literacy, or poor collaborative practices. The effectiveness of web conferencing is influenced by connectivity and bandwidth issues, platform complexity and limited use of interactive tools such as breakout rooms, white board, and chats and polls. This implies that for effective blended learning strategy, video messaging, podcasts and email should be integrated as the core communication plan for clarity, flexibility and learner engagement. Effective training on the use of virtual learning platforms for both facilitators and students is crucial to enhance the use interactive tools for enhanced engagements.

Table 4: Effectiveness of communication methods in blended learning

Communication Method	Mean Score ± SD
Video messaging	4.05±1.03
Podcast	3.89±0.89
Email	3.82±1.10
Discussion forum	3.68±1.20
Virtual classes	3.41±1.09
SMS	3.07±1.33
Collaborative document sharing	2.95±1.00
Web conferencing	2.82±1.19

1- Not Effective; 2- Slightly Effective; 3- Moderately Effective; 4- Effective; 5- Very Effective

Assessment methods

Respondents agreed to the use of on-the-job assessment (4.43), recorded demonstration (mean = 4.39), project based (mean = 4.36) methods of assessment (Table 5). These methods are hands-on, authentic and aligns to TVET principles of assessments which prioritizes skills demonstration and competency building. Authentic assessment methods improve learner's ability to apply knowledge (Koh, 2017). These methods are effective in bridging the gap between the classroom and workplace.

Respondents also agreed to the use core assessment tools such as assignments (mean = 4.25), and quizzes (mean = 4.14). These assessment tools are well established and easy-to-implement digitally for both formative and summative assessments. Research indicates that online quizzes can improve memory recall retrieval practices (Orr & Foster, 2013).

Digital interactive methods such as E-portfolio (mean = 4.09), simulations and virtual labs (mean = 4.02) and gamification (mean = 4.02) were also agreed by the respondents to be used in blended learning assessments. Studies have shown that gamification boosts motivation whiles case studies promotes problem solving and critical thinking (Bovermann & Bastiaens, 2019).

Respondents slightly agreed to the use of electronic document (mean = 3.64), and peer assessments (mean = 3.61) in blended learning. These may be viewed as being prone to subjective bias, especially proper rubrics and guidelines are lacking. Learners are likely to distrust peer marking or lack the confidence in assessing other people's work. This means that in the blended learning environment for TVET, practical assessments

must be prioritized to meet learners' expectation and reflect real-life competencies, have a good blend of traditional and digital tools and introduce peer assessments with caution.

Table 5: Assessment method usage in blended learning

Assessment Method	Mean Score
On-the-job assessment	4.43±0.79
Recorded demonstrations	4.39±0.76
Project-based assessments	4.36±0.65
Assignments	4.25±0.53
Quizzes	4.14±0.67
E-portfolios	4.09±0.64
Interactive case studies	4.02±0.95
Gamified assessments	4.02±0.73
Simulations and virtual labs	4.02±0.87
Electronic document assessments	3.64±0.99
Peer assessments	3.61±1.23

1-Strongly Disagree; 2-Disagree; 3-Nuetral; 4-Agree; 5-Strongly Agree

Usefulness of Face-to-face resources in learning environment

The most valued resources for blended learning were multimedia and hands-on tools such as videos (4.44), guest presentation (4.20), animation (4.13), simulation (4.03) and physical models (4.09). Video was recognized as the most useful tool indicating respondents' strong preference for dynamic visual content in face-to-face learning. Studies show that videos enhance understanding and retention of concepts especially in TVET Borup et al. 2011). Animation and simulations are also aligning with TVET goals of visualizing complex processes and improving learner engagement. The use of guest presenters and physical models will allow learners to tap form the experiences of industry practitioners and improved tactile learning respectively.

Traditional resources such as textbooks (4.04) and workbooks (4.02) were also considered useful by respondents in face-to-face interactions. This is because these resources provide a structured familiar format that supports learning in and out of class. These tools are a good compliment to multimedia resources. Games were also considered as useful resource suggesting both lectures and students are open to its usage. However, the usefulness of AR/VR (mean = 3.64), and online interactive whiteboards (mean = 3.53) was not strongly perceived as the earlier discussed tools. This could be because these tools are emerging technologies and may not be widely used or fully understood in many TVET settings in the global south yet. AR/VR greatly enhance spatial and experiential learning. However, their effectiveness is hampered by access, training and curriculum alignment.

Resources that were ranked as less useful for face-to-face mode are websites and electronic documents. There could be that respondents found static documents to be less engaging compared to visual and interactive tools. Similar studies show that

students in blended setting prefer a mix of multi-media, structured content and real - world interaction. This means that the most effective face-to-face blended resources are those that bridge theory and practice, offer visual explanation and supports interactivity and engagement.

Table 6: Usefulness of face-to-face resources in blended learning

Resource type	Mean score
Videos	4.40±0.69
Guest Presenters	4.20±0.81
Animations	4.13±0.84
Simulations	4.09±0.85
Physical Models & Prototypes	4.09±0.95
Textbooks	4.04±0.67
Workbooks	4.02±0.54
Games	3.96±0.88
Course Modules	3.76±0.91
Augmented and virtual reality (AR/VR) tools	3.64±1.20
Online interactive whiteboards	3.53±1.40
Websites	3.44±1.01
Electronic documents	3.42±1.07

1- Not Useful; 2- Slightly Useful; 3- Moderately Useful; 4- Useful; 5- Very Useful

Challenges and recommendations of blended learning

Blended learning has several benefits to the learner, institution and facilitator. However, this is not without challenges. Figure 1 shows that majority of the respondents were of the view that poor internet connectivity (80%) will affect the smooth running of the blended learning mode. In the global south, there is poor internet coverage especially in the rural areas. Also, some urban communities have limited connectivity. There was also a concern of lack of resource (70%) which include ICT infrastructure which was of great concern to respondents. There also concerns of inadequate knowledge and skills in the blended delivery methods which will make less effective. Other issues of concern were inappropriate use of digital devices by learners, assessment difficulties, prompt feedback, poor student participation and lack of maintenance. There were also issues of prompt feedback and current course structure not being appropriate for blended delivery.

Majority of the respondents recommended that there should be a data subsidy policy for both facilitators and learners as shown in Figure 2. Easing them of the burden of high cost of data. Also, the respondents were of the view that well-tailored training for both students and facilitator will foster the use of the blending learning approach in TVET. Other recommendations include the improvement of ICT infrastructure, balanced delivery and user-friendly platform. These recommendations show at

respondents are aware of their vulnerabilities in the use of blended learning, and by offering these support systems there will be a potential acceptance of the method.

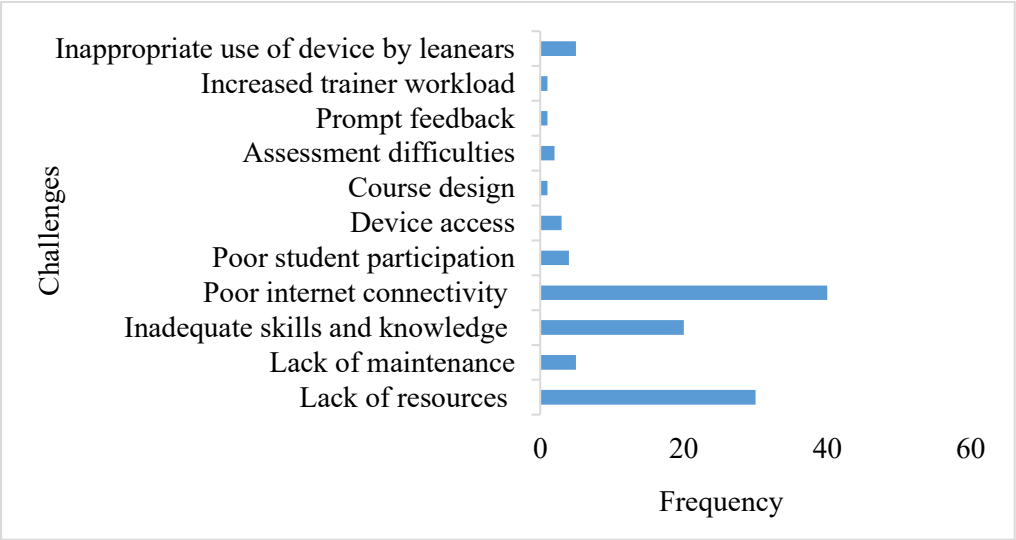

Figure 1: Challenges of blended learning

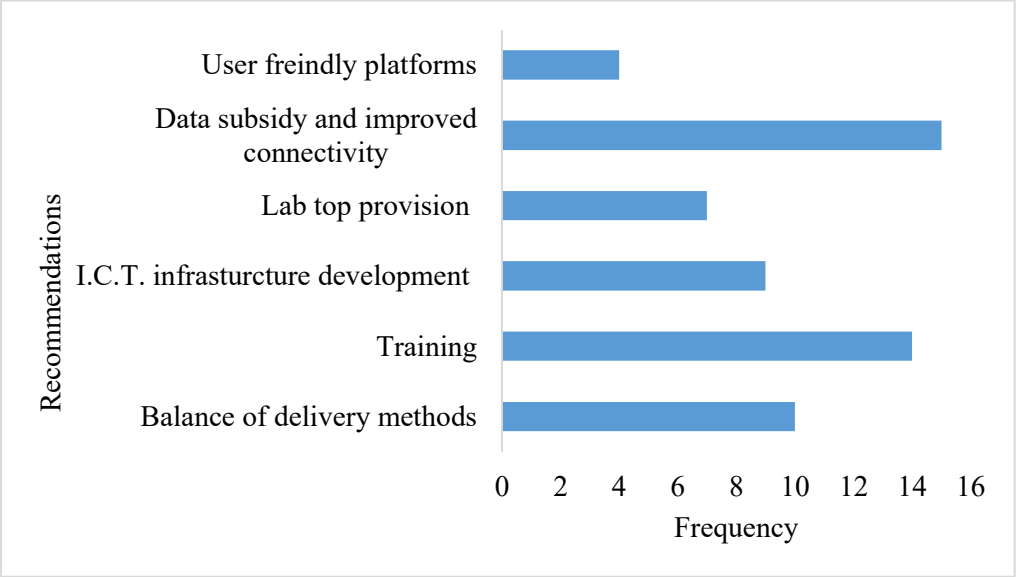

Figure 2: Recommendations for blended learning

Implications of the findings

The key implications of findings regarding the feasibility of adopting blended learning in TVET at a teacher educator institution in Ghana are as follows.

Curriculum transformation: Institutions must redesign curricula to integrate digital tools with hands-on training. Practical subjects require innovative instructional design such as simulations, video demonstrations, and remote labs.

Capacity building for educators: Teacher educators need targeted professional development in digital pedagogy, LMS usage, and online facilitation. Competency frameworks must be localized to reflect Ghana's TVET context and infrastructure realities.

Infrastructure investment: Findings highlight the need for robust internet connectivity, access to devices, and LMS platforms. Institutions must prioritize low-tech and mobile-friendly solutions to ensure inclusivity.

Policy and institutional support: Adoption requires institutional policies that support blended delivery, assessment standards, and QA mechanisms. Strategic frameworks can guide implementation and overcome resistance.

Pedagogical shifts: Educators must shift from content delivery to facilitation, using asynchronous and synchronous methods. Blended learning encourages learner autonomy, collaboration, and critical thinking.

Equity and access: Findings suggest that blended learning can bridge geographic and socioeconomic gaps in access to TVET. However, disparities in digital literacy and device ownership must be addressed through targeted interventions.

Sustainability and scalability: Pilot programs must be evaluated for scalability across other TVET institutions. Long-term sustainability depends on institutional commitment, funding, and continuous feedback loops.

Conclusion

This study has given an overview of the feasibility of adopting blended delivery of TVET at a teacher educator institution in Ghana. There is a general agreement that blended learning environment will develop digital skills of users; thus, learners and facilitators, facilitate distance learning, increase enrolment, improve access to education and enhance workplace training. These perceived benefits are potential tools to convince stakeholders in the use of blended learning. There is the perception that blended learning will increase the workload of faculty members, calling for the need to invest in faculty training and support to properly manage the workload, while improving digital pedagogy and feedback systems to strengthen perceived assessment and teaching quality. In the adoption of blended learning in TVET it is noteworthy that workplace learning and face-to-face interaction are the most preferred delivery modes with the most preferred communication tools being video messaging. However, the use of virtual classes and learning management systems, LMS were also be accommodated by users. Due to the practical nature of TVET programmes a wide range of assessment methods were found acceptable to respondents for use in blended learning. The most acceptable assessment modes were on-the-job assessment, recorded demonstration and project-based assessment methods. Other core assessment tools such as assignments and quizzes are also considered useful. Digital interactive methods such as E-portfolio, simulations and virtual labs and gamification are assessment tools for potential usage in the blended learning environment. Resources such as videos, guest presentation, animation, simulation and physical models are likely to be the most useful resources

for blending learning for TVET. However, the use traditional resources such as textbooks and workbooks should be continued. Blended learning for TVET is feasible even though it requires training of stakeholders and the provision of ICT infrastructure to enhance learning experience and satisfaction of both facilitators and learners.

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