Educational Dimension, 2026, Vol. **15**, pp. 79–87 https://doi.org/10.55056/ed.948

The environmental and logistical factors affecting the implementation of vocational skills curriculum in folk development colleges in Tanzania

Frenk Josephat, Rose Ephraim Matete and Fortunata Kapasy Pembe

The University of Dodoma, 1 Benjamin Mkapa Rd., 41218 Iyumbu, Dodoma, Tanzania

Abstract. This study investigated enhancing vocational skills curriculum implementation in folk development colleges (Mara, Tanzania). Utilising a mixed research approach and a convergent parallel design, data were collected from 468 participants, including 384 students, 21 tutors, 58 folk development college (FDC) graduates and two (2) industry officials. The results indicate that the prevailing inadequacy of the learning environment is significant, with respondents expressing dissatisfaction with physical conditions, including insufficient tools, inadequate sanitary facilities, and damaged infrastructure. These environmental deficiencies impede the delivery of quality vocational education and highlight a pressing need for targeted policy interventions. The results indicate a disconnect between the skills taught in FDCs and those required in the workforce, exacerbated by the inability to update training programs in response to technological advancements. By fostering an educational environment prioritising infrastructural integrity and curriculum relevance, policymakers can significantly bridge the gap between intended and actual skill attainment, ultimately enhancing the effectiveness of vocational training in Tanzania.

Keywords: enhancing, vocational skill curriculum, environmental and logistical challenges, folk development colleges

1. Introduction

Building upon our previous investigation of socio-demographic factors influencing curriculum discrepancy in folk development colleges (FDCs) [3], this study examines the environmental and logistical factors affecting the implementation of vocational skills curriculum (VSC) in the same institutions. While the earlier work established that demographic characteristics and prior knowledge significantly influence skills acquisition outcomes, the present study focuses on institutional and infrastructural challenges that shape the delivery of vocational education.

The theoretical framework regarding VSC, vocational skills education (VSE), and the role of FDCs in Tanzania has been comprehensively discussed in our companion paper [3]. The definitions of vocational skills, curriculum, and the concept of FDCs, along with the policy context of vocational skills training in Tanzania, remain as previously established. This study extends that foundation by investigating how physical learning environments, technological resources, and instructional capacity affect curriculum implementation.

0009-0009-6472-0385 (F. Josephat); 0000-0002-1452-3641 (R. E. Matete); 0000-0001-7374-2230 (F. K. Pembe)
frenk.josephat@yahoo.com (F. Josephat); rose.matete@udom.ac.tz (R. E. Matete); fpembe2012@gmail.com (F. K. Pembe)

2. Methodology

2.1. Research approach and design

This study employed a mixed-methods approach with a convergent parallel design, allowing simultaneous qualitative and quantitative data collection. As noted by Cooper and Schindler [2], this design offers a comprehensive overview of the variables of interest by representing various population segments. The convergent parallel design was suitable for examining measurable environmental factors and qualitative perceptions of infrastructural challenges.

2.2. Study context and participants

The study was conducted in the same three FDCs in the Mara Region of Tanzania as described in our previous work [3]: Musoma FDC, Kisangwa FDC, and Tarime FDC. The participant demographics and sampling procedures followed the same protocol, involving 468 participants distributed as previously reported. The gender distribution and participant categories remain as documented in the companion study.

2.3. Data collection methods

While maintaining the same data collection instruments (questionnaires, interviews, and documentary review) described in [3], this investigation focused on environmental and logistical aspects. The questionnaires emphasised infrastructure quality, technology availability, and resource adequacy. Interview questions targeted institutional challenges and facility-related barriers to curriculum implementation. Documentary review concentrated on infrastructure reports, maintenance records, and resource allocation documents.

2.4. Data analysis and ethical considerations

Data analysis employed descriptive statistics and chi-square tests to examine associations between environmental factors and curriculum implementation effectiveness. The same ethical protocols were followed, with research permissions and clearances obtained as previously described [3].

3. Results

The study examined various environmental and logistical factors to determine their influence on vocational skills curriculum implementation across the FDCs. These factors included teaching and learning facilities, instructor qualifications and competencies, exposure to modern technology, and the overall nature of infrastructure.

3.1. Teaching and learning facilities

The data in table 1 reveals that a substantial majority of students perceive the learning environment at the college as supportive, with 88.8% expressing satisfaction in this regard. However, this positive sentiment contrasts sharply with their views on the availability of effective tools in workshops, where 79.69% report feeling dissatisfied.

Similarly, during the interview session with one of the FDC principals, it was commented that teaching and learning facilities at FDC tend to enhance the implementation of VS programmes, and he had this to say:

> What I can say to the teaching and learning facilities at our college. The classrooms are equipped with modern tools that mostly received from the central government that enhances the learning experience, making lessons more engaging and interactive. The availability of resources like the workshops allows students to pursue their studies effectively. (FDC principal 2, on March 18th, 2024)

Table 1
Teaching and learning facilities of FDC (n = 384).

Variable	Frequency	%
The learning environment at the college		
Supportive	341	88.8
Not supportive	43	11.2
The availability of effective tools in the workshops		
Satisfied	78	20.31
Dissatisfied	306	79.69

Another FDC principal also explained the teaching and learning facilities at FDC for the implementation of VS programmes:

> My understanding with the teaching and learning facilities at our has been overwhelmingly positive. The workshops are well equipped with required tools therefore; the student have good space to acquire the knowledge need for courses for example the workshop of Domestic electrical installation and welding and metal fabrication are well equipped the teaching and learning tools. (FDC principal 3, on March 19th, 2024)

The responses reflect a strong appreciation for the college's teaching and learning facilities, emphasising the presence of modern tools sourced from the central government that enhance the educational experience. The principal reported that these resources make lessons more engaging and interactive, fostering a dynamic learning environment. The availability of well-equipped workshops, such as those for domestic electrical installation and welding, provides essential hands-on experience that complements theoretical studies, contributing to the positive feedback regarding the overall learning environments. This combination of modern equipment and practical resources supports effective skill acquisition and student satisfaction.

3.2. Qualification and competences of instructors

The data in table 2 highlights the qualifications and competencies of instructors, revealing a significant disparity in their assessment. Out of 384 respondents, 36.46% perceive the instructors as having inadequate qualifications and competencies, while a more favourable 63.54% believe that the instructors are adequately qualified. This suggests that most individuals feel confident in the instructors' abilities, though a notable portion still expresses concern regarding the adequacy of their qualifications. This situation may indicate a need for further professional development or training for those instructors viewed as inadequate, to enhance overall educational quality and meet the expectations of all stakeholders involved.

Table 2
Qualification and competences of instructors of FDC (n = 384).

Variable	Frequency	%
Inadequate	140	36.46
Adequate	244	63.54

Similarly, during the interview session with one of the FDC principals, it was commented that the qualifications and competences of tutors/instructors at FDC enhance the implementation of VS programmes:

> The instructors at our college are qualified with a wealth of knowledge and experience to facilitate teaching and learning roles, which greatly enhances the implementation of VSs. Their qualifications often offer practical experiences, enabling them to connect with students on multiple levels. (FDC principal 3, on March 19th, 2024)

Another FDC principal also explained the qualifications and experiences of tutors at FDC in relation to the implementation of VS programmes:

> I have been consistently impressed by the competencies of instructors in our college. They demonstrate exceptional dedication to their students in utilising teaching and learning methods that improve the VS of our students. Their ability to inspire and motivate learners, combined with their commitment to promoting sustainable VS, makes a significant impact on students. (FDC principal 3, on March 19th, 2024)

The result emphasises instructors' crucial role in enhancing the educational experience through their qualifications and experience. It highlights that these instructors in FDCs possess a wealth of knowledge, significantly improving the implementation of various teaching strategies to strengthen the VSs for the students. The tutors' qualifications include practical experiences that enable them to connect effectively with students, thus enhancing the implementation of VSs to the students. The study expresses admiration for the instructors' competencies and exceptional commitment to student success, ultimately contributing to improved educational outcomes. Their ability to inspire and motivate learners fosters a positive learning environment, while their dedication to promoting sustainable teaching practices indicates a focus on long-term benefits for students.

3.3. Exposure to modern technology of FDC tutors

The data in table 3 survey results reveal that a significant majority of respondents, approximately 70%, are exposed to modern technology, with 267 out of 384 participants indicating "Yes" to this question. In contrast, about 30% reported having no exposure to modern technology. This disparity highlights a pronounced divide: while most individuals benefit from the advantages of technological integration, such as improved access to information and enhanced productivity – a notable portion of the population remains disconnected. This lack of exposure may limit their opportunities and access to VSs.

Table 3
Exposure to modern technology of FDC tutors (n = 384).

Variable	Frequency	%
Yes	267	69.53
No	117	30.47

Similarly, during the interview session with the FDC tutors, it was commented that exposure to modern technology of FDC tutors would enhance the implementation of VS programmes, and they spoke:

> I have been fortunate to have extensive exposure to modern technology throughout my career. In my duties I apply the technology to facilitate teaching and learning of VSs to students. I regularly utilised tools like projectors and internet devices as well as use of modern tools to management

> my subject of motor vehicle mechanics which not only facilitate studies but also improve my teaching career. I believe staying updated with emerging technologies is crucial, and I actively seek out training and workshops to enhance my skills. (Tutor 9, on March 19th, 2024)

Another FDC tutor explained the exposure to modern technology to enhance the implementation of VS programmes, and they spoke:

> While I initially found the rapid pace of modern technological change challenging, I have learned a lot of skills facilitated by modern technology to facilitate my duties of teaching and learning, as well as those of my students. For example, I have modern skills in domestic electrical installation, and I quickly adapted to using video and a projector in my class to expose the students to modern technology for their careers. This experience taught me the importance of flexibility and continuous learning of modern technology. (Tutor 11, on March 20th, 2024)

The results reflect the tutors' extensive exposure to modern technology throughout their teaching career, emphasising its positive impact on learning vocational subjects, particularly motor vehicle mechanics. They actively utilise tools like projectors and internet devices to enhance the educational experience and believe staying updated with emerging technologies is crucial. Although initially challenged by the rapid pace of technological change, the tutors have adapted by acquiring new skills, such as domestic electrical installation, and integrating video and projectors into their classes. This experience has reinforced the importance of flexibility and continuous learning in effectively incorporating modern technology into their teaching practices. The tutors maintain a positive attitude towards the role of technology in teaching and learning, VSs to the students in FDCs education, and its significance in preparing students for their future careers.

3.4. The nature of infrastructure at FDC

The table 4 presents the results, which reveal significant areas of concern within the college environment. A staggering 61.98% of respondents expressed dissatisfaction with the learning environment, highlighting a critical need for improvement. Regarding the availability of effective tools in workshops, while 30.47% were satisfied, a considerable 38.02% had no opinion, indicating a lack of awareness or engagement. Cleanliness of sanitary facilities also raised concerns, with 18.75% reporting dissatisfaction. Similarly, 20.05% were dissatisfied with the availability of sanitary rubbish bins, suggesting waste management issues. The availability of classrooms is another critical area, where 22.4% expressed dissatisfaction, indicative of potential overcrowding. Over a quarter (27.6%) were dissatisfied with their exposure to modern technology during practical work. Responses regarding rehabilitating damaged infrastructure were mixed, but 22.4% were dissatisfied. Lastly, 25.78% expressed dissatisfaction with instructors' availability, which could impact educational quality. The feedback revealed several areas that need improvement in college infrastructure, particularly concerning the dissatisfaction expressed by many respondents with implementing VSs in FDCs.

The survey data in table 4 indicated significant dissatisfaction among students, particularly regarding the learning environment and exposure to modern technology during practical work. Mixed responses characterised the availability of effective tools, with many students expressing no opinion, while others reported their satisfaction. On the part of cleanliness in sanitary facilities and the availability of rubbish bins, there emerged a notable dissatisfaction, whereas classroom availability showed

Table 4
Showing nature of infrastructures in the FDC,

Items	Very dissatisfied	Satisfied	No opinion	Satisfied	Very satisfied
The learning environment at the college	238 (61.98%)	68 (17.71%)	35 (9.11%)	18 (4.69%)	25 (6.51%)
The availability of effective tools in the workshops	43 (11.2%)	117 (30.47%)	146 (38.02%)	47 (12.24%)	47 (12.24%)
The cleanness of sanitary facilities (toilets)	72 (18.75%)	87 (22.66%)	85 (22.14%)	79 (20.57%)	61 (15.89%)
Availability of sanitary rubbish bins and pits	77 (20.05%)	90 (23.44%)	69 (17.97%)	104 (27.08%)	44 (11.46%)
Availability of enough classroom	86 (22.4%)	70 (18.23%)	66 (17.19%)	111 (28.91%)	51 (13.28%)
Your exposure to modern technology during your practical work	106 (27.6%)	65 (16.93%)	96 (25%)	67 (17.45%)	50 (13.02%)
The rehabilitation of dilapidated (damaged) infrastructure at the college	86 (22.4%)	102 (26.56%)	106 (27.6%)	51 (13.28%)	39 (10.16%)
The availability of enough instructors for your program	99 (25.78%)	48 (12.5%)	74 (19.27%)	80 (20.835)	83 (21.61%)

some improvement, whereby a substantial number of students were still dissatisfied. Instructor availability garnered slightly better feedback, yet many expressed dissatisfaction.

4. Discussion of results

The study reported that the current institutional environment in FDCs, which enhances the training activities, is inadequate to support the effective implementation of the vocational skills curriculum. This can contribute to the increasing discrepancy in the quality and accessibility of vocational skills education in the FDCs. Therefore, it is logical to argue that the effective implementation of the vocational skills curriculum is directly related to a conducive and supportive institutional environment that can attract and facilitate the delivery of quality services throughout the entire institution. Addressing the environmental factors that negatively impact the implementation of the vocational skills curriculum should be a priority to enhance the effectiveness and attainment of these critical educational programs.

Similarly, the The United Republic of Tanzania and Ministry of Education, Science and Technology [6] reports that, even with the refurbishment of facilities and infrastructure, inclusive curriculum, and labour market-driven initiatives, the labour market was still only marginally supported and poorly represented. This means that the curriculum falls short of building individual personalities, inculcating transformative thinking and feelings and boosting learners' ability to recognise socio-economic developmental challenges the community faces, thereby addressing them as motives

towards fostering effective participation in community day-to-day activities.

However, the results of this study are in contrast to those of a cross-sectional descriptive study by Nade and Malamsha [5] on the impact of Agri-entrepreneurship courses on young people's intention to start their farms, which was based on data from Tanzania's FDCs. The study found an insignificant discrepancy between the intended and the attained vocational skills curriculum, such that the respondents were comfortable with the learning environment, which equipped them with practical skills that had implications in real life. The respondents demonstrated farm entrepreneurial skills, start-up firms, and related farm management, demonstrating the requisite abilities. Nonetheless, this discrepancy between the current and the previous studies likely reflects differences in the fields of instruction, equipment availability, candidate motivation in the institutions, and outdated curriculum.

The results concerning factors affecting the implementation of vocational skills curriculum in FDCs highlight critical policy gaps that must be addressed to enhance educational outcomes. A significant issue is the inadequacy of the learning environment, whereby over half of the respondents reported dissatisfaction with their physical surroundings, including insufficient tools, inadequate sanitary facilities, and damaged infrastructure. These environmental deficiencies hinder the effective delivery of vocational training, suggesting a pressing need for policy interventions to improve facilities and resources. Thus, this study underscores the importance of aligning vocational curriculum with rapidly evolving industry needs and technological advancements. As noted by various respondents, the inability to update training programs in response to job market demands leads to a disconnection between what students learn and the skills required in the workforce, exacerbating the gap between intended and attained vocational competencies.

Similar results are reported by Lischewski et al. [4], a study on factors influencing the non-formal and formal vocations models of skills delivery. It concluded that insufficient staff capacity and limited opportunities for student attachment are among the factors that affect the implementation of vocational skills in FDCs. Equally, a descriptive survey design by Anindo [1] in Kenya complements by acknowledging pressing factors that hinder the effective implementation of vocational skills by focusing on insufficient training equipment and reliance on traditional teaching methodologies such as lectures and demonstrations. The reliance on work-based learning and discussions to accommodate large class sizes and the lack of adequately trained staff members also contribute to shaping FDC students' competencies and employable skills. These factors harm the teaching and learning outcomes of the FDC candidates regarding the intended learning goals.

However, the cross-sectional study by Velasco [7] in Oman found that while struggling to acquire the intended curriculum goals, several factors impede the desired learning outcomes. Such factors stem from the student's prior knowledge, attendance patterns, heterogeneity of student populations, class sizes, and the timing of student registration. This is, however, complemented by the ability of students to understand the medium of instruction and their proficiency in it, which can significantly influence their performance and learning outcomes. These factors are crucial in determining students' success within the FDC environment.

In contrast to the results from this study, research by Nade and Malamsha [5] reported a minimal discrepancy in vocational skills acquisition among FDC students, suggesting that specific programs may successfully equip learners with practical skills. This divergence highlights the variability in instructional quality, resource availability, and student motivation across different contexts and fields of study. While some students reported a supportive learning environment that enabled them to develop entrepreneurial skills effectively, others face significant barriers that impede their

educational experiences. This inconsistency emphasises the need for a comprehensive policy approach that not only addresses infrastructural and resource-related challenges but also ensures that teaching methodologies are modernised and tailored to meet the diverse needs of learners. By fostering a conducive educational environment and promoting continuous curriculum relevance, policymakers can enhance the overall effectiveness of vocational training programs, ultimately bridging the gap between intended and actual skill attainment.

5. Conclusion

While our companion study [3] demonstrated that socio-demographic factors such as media exposure and prior knowledge significantly influence curriculum discrepancy in FDCs, the present investigation reveals equally critical environmental and logistical challenges. The prevailing inadequacy of the learning environment, with over half of respondents expressing dissatisfaction with physical conditions, represents a fundamental barrier to effective vocational education delivery.

The disconnect between FDC curricula and workforce requirements, compounded by insufficient technological resources and outdated infrastructure, creates a dual challenge: students lack the physical resources necessary for skill development and receive training that may not align with current industry needs. When considered alongside the socio-demographic influences identified in our previous work, these findings present a comprehensive picture of the multifaceted challenges facing vocational education in Tanzania.

The path forward requires integrated interventions addressing the individual factors (as outlined in [3]) and the institutional challenges identified here. Policymakers can create a more effective vocational training ecosystem by improving physical infrastructure, modernising teaching resources, and ensuring curriculum relevance while simultaneously addressing students' preparedness and information access. FDCs can only fulfil their mandate of providing quality vocational education that meets both individual aspirations and national development goals through such comprehensive approaches.

6. Limitations

As noted in our companion study [3], this research did not assess the curricula materials in detail nor focus on students' performance metrics in VS programmes. Future studies should examine these aspects, particularly investigating how environmental factors interact with student achievement and long-term employment outcomes.

Acknowledgments: The authors thank all participants for their willingness to take part in this study. Our sincere gratitude is directed to the University of Dodoma (UDOM) for the capacity-building that gave us an opportunity to learn some skills in manuscript writing.

References

[1] Anindo, J., 2016. *Institutional factors influencing acquisition of employable skills by students in public technical and vocational education and training institutions in Nairobi County, Kenya*. Ph.D. thesis. University of Nairobi. Available from: https://erepository.uonbi.ac.ke/handle/11295/100046.

[2] Cooper, D.R. and Schindler, P.S., 2014. *Business Research Methods*, The McGraw-Hill/Irwin Series in Operations and Decision Sciences. 12th ed. McGraw-Hill. Available from: https://ee.kpi.ua/~yv/edu/ie/book/1cooper_d_r_schindler_p_s_business_research_methods.pdf.

[3] Josephat, F., Matete, R.E. and Pembe, F.K., 2026. The influence of the socio-demographic factors on curriculum discrepancy for vocational skills training in

folk development colleges in Tanzania. *Educational Dimension*, 14, pp.132–146. Available from: https://doi.org/10.55056/ed.911.

[4] Lischewski, J., Seeber, S., Wuttke, E. and Rosemann, T., 2020. What Influences Participation in Non-formal and Informal Modes of Continuous Vocational Education and Training? An Analysis of Individual and Institutional Influencing Factors. *Frontiers in Psychology*, 11. Available from: https://doi.org/10.3389/fpsyg.2020.534485.

[5] Nade, P.B. and Malamsha, C.K., 2021. The influence of agri-entrepreneurship courses studied on youth farm entrepreneurial intention: Evidence from Folk Development Colleges in Tanzania. *South African Journal of Economic and Management Sciences*, 24(1), p.a3788. Available from: https://doi.org/10.4102/sajems.v24i1.3788.

[6] The United Republic of Tanzania and Ministry of Education, Science and Technology, 2018. Education Sector Development Plan (2016/17 – 2020/21). Tanzania Mainland. Available from: https://planipolis.iiep.unesco.org/en/2018/education-sector-development-plan-201617-%E2%80%93202021-tanzania-mainland-6720.

[7] Velasco, R.M., 2021. Student-related factors of academic performance: A case of non-accounting students in accounting module. *The Research Probe*, 1(1), pp.18–44. Available from: https://doi.org/10.53378/346500.