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TRAINING NEEDS ASSESSMENT REPORT ON ESTABLISHMENT OF PILOT TRAINING ON ENTREPRENEURSHIP AND DIGITAL SOLUTIONS

ERASMUS-EDU-2023-CB-VET
TVET@Work - Boosting Tanzanian VET-Industry Collaboration to Foster Employability and Entrepreneurship through Teacher's Competence Development and Use of Immersive Technologies
1.12.2023-30.11.2026

Deliverable D4.1. Baseline study, preliminary results

Type of Deliverable: — R- Document, report, PU - Public

29th November 2024

Project Partners and the Abbreviations

HAMK	Häme University of Applied Sciences, Finland
VETA	The Vocational Educational and Training Authority, Tanzania
HakiElimu	HakiElimu, Tanzania
KIST	Karume Institute of Science and Technology, Zanzibar
3DBear	3DBear, Finland
CSV	Centro San Viator, Spain

Associated Partner

MVTTC	Morogoro Vocational Teachers Training College, Tanzania

This project has received funding from the European Union's Erasmus+ Capacity Building - Vocational Education and Training (VET) programme under grant agreement No. 101128662. The content of this publication represents the views of the author only and is his/her sole responsibility. The European Commission and the Agency do not accept any responsibility for use that may be made of the information it contains.

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Acknowledgments

TVET@Work project under European Education and Culture Executive Agency (EACEA) funds wish to thank all those who participated in the Train Needs Analysis exercise that led to the preparation of this report. Precisely, the report explored the needs for establishment of pilot training on entrepreneurship and digital solutions & digital pedagogy. Special thanks are extended to VETA and KIST staff for their tireless engagement. In addition, valuable inputs from the key stakeholders composed of directors, principals, tutors, industrial practitioners, vocational teachers, Training coordinators, registrars, head of departments/sections are gratefully recognized. TVET@Work project would however like to mention a few of the participants who largely contributed to the success of the training needs assessment exercise as follows:

Dr Zuhura Juma Ali	Lecture - KIST
Anneth Mganga	Tutor-VETA HQ
Audiface T. Tarimo	Tutor - MVTTC

List of acronyms and abbreviations

KIST	Karume Institute of Science and Technology
VETA	Vocational Educational and Training Authority
MVTTC	Morogoro Vocational Teachers Training Collage
TVET	Technical and Vocational Educational and Training
VET	Vocational Education and Training
VTA	The Vocational Training Authority of Zanzibar
TNA	Training Needs Assessment

1.0 BACKGROUND

TVET@Work project's main objectives are to build the capacity of vocational education and training (VET) providers and teachers to strengthen public-private cooperation for demand-orientated and opportunity-driven VET interventions and improve the quality and responsiveness of TVET to economic and social developments. The project's specific objectives are aligned with regional and national development strategies. The objectives will be achieved by focusing on VET teacher training. VET teacher trainers and trainees will be equipped with the skills to train entrepreneurship for their students using digital solutions, equip them with digital pedagogy skills, and with skills on how to cooperate with the industry, including the inclusion in industrial attachments and civic engagement. To promote the cooperation between VET and the industry, we will produce a Guidelines and Toolkit for practical implementation. Participatory methods will be used throughout the project from planning to organizing and evaluating the activities. All the tools, guidelines, training programmes, and digital solutions, etc., will be jointly elaborated, developed, and assessed in co-creative workshops. The main target groups are the VET teachers and industry representatives. Indirect beneficiaries are the VET students who will gain from increased quality and innovations in entrepreneurship skills training, TVET teachers' pedagogical skills, especially in digital solutions, improved industry cooperation practices, and updated civic engagement skills. TVET@Work will have positive and long-lasting effects on the students, on VET teachers, participating organizations, and on the policy systems through guidelines dissemination. The overall impact is ensured by aligning the objectives with national strategies and the relevance of consortium members and their legitim and recognized mandate in instilling the results.

1.1 Purpose and objectives

1.1.1 General objectives

To enhance the quality and effectiveness of Vocational Education and Training (VET) by improving teachers' professional development, increasing their competence in key areas, and boosting students' employability

Specific Objectives

The specific objectives for conducting this Train Needs Assessment are: -

1. To improve access to VET teachers' continuous professional development
2. To increase the competence of VET teachers in the areas of entrepreneurship, digital skills, cooperation with the industry of the VET students
3. To improve the employability of the VET students

2.0 METHODOLOGY

2.1 Study approach and design

This study was employed mixed methods research in which a main qualitative study is complemented by a quantitative method. The mixed methods approach is suitable for this study. Qualitative and quantitative data will complement to each other in order to produce deeper understanding of issues and needed competences related to entrepreneurship, digital solution and digital pedagogical. The main focus is on teachers, students, graduates, employers, and management from both VETA and VTA centers. For each setting focus group will be organized with participants in order to identify their perception, perceived challenges, opportunities and the likes. During the interviews, the respondents will be asked to complete a short online survey.

2.2 Area of the study

The study was conducted in Dar es Salaam, Mwanza, Zanzibar, Tanga, Dodoma, Mbeya, Iringa, Ruvuma and Morogoro regions. The regions have been selected from nine (9) VET Zones to represent other institutions in the respective zones. However, these regions are selected since they constitute larger numbers of MVTTC graduates and teachers needed by the study. Table 2.1 summarizes area of the study

Table 2.1: Zones, Regions and Vocational Training Centres and Directorates

No	Zone	Region	Institute/ Directorate
1	Dar es Salaam Zone	Dar es Salaam	DSM RVTSC
2	Central Zone	Dodoma and Singida	DVET (VETA HQ) Dodoma RVTSC
3	Northern Zone	Arusha	VHTTI
4	High Land Zone	Iringa	Iringa RVTSC
5	Eastern zone	Mororogoro	MVTTC
6	Lake zone	Mwanza	Mwanza RVTCS Musoma VTC
7	South West Zone	Mbeya	Mbeya RVTSC
8	South East Zone	Mtwara	Mtwara RVTSC
9	Zanzibar	Unguja	KIST MKOKOTONI MWANAKWEREKWE
		Pemba	DAYA VTC VITONGOJI VTC

2.3 The Study Population

The population involved principals/rectors, registrars/training coordinators, tutors, and vocational teachers who are currently used to teach or facilitate entrepreneurship subjects.

Sample size of the study

The study was involved 230 respondents who were ten (10) Vocational teachers from each VETA or VTA centers are expected, and ten (10) tutors/lectures from KIST and MVTTC. Table 3 shows the list of respondents involved in the study.

Table 3: Summarizes the Number of Respondents in this Study

Category of Respondents	Targeted			Actual		
	Male	Female	Total	Male	Female	Total
Total	**146**	**94**	**230**	**135**	**66**	**201**
						87%

2.4 Sample, sampling procedures, and sample size

The survey used purposive sampling, purposive sampling will be employed to gather information from respondents who possess adequate experience, skills, and knowledge in entrepreneurship skills in TVET training. Apart from purposive sampling, convenience sampling procedures will be employed where by available VET and VTA teacher from VETA and VTA Centers, will be unbiased selected to participate.

2.5 Data collection instruments

The TNA was employed the following instruments for data collection: Focus group discussion (FGD) for MVTTC and KIST tutors and teachers a questionnaire for VTA and VETA teachers.

2.6 Data Analysis

Data obtained through various procedures was summarized using excel programme. Besides, the non-numerical data was subjected to content analysis.

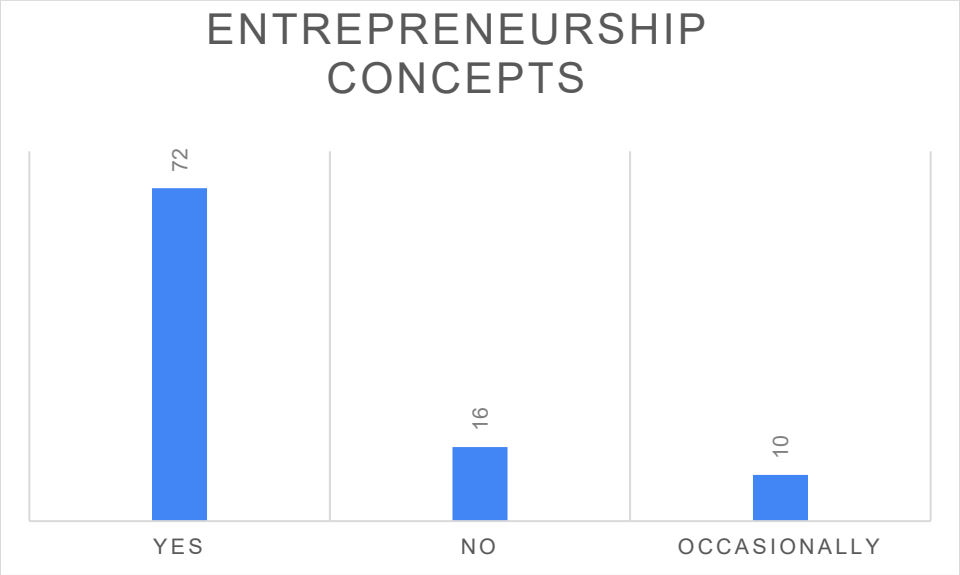
2.7 Validity and Reliability of the instruments

Validity refers to the ability of data data-collecting method to measure what was supposed to be measured (Cohen et al., 2011). The validation of the instrument is the process of establishing document evidence, which provides a high degree of accuracy that specific process consistently produces the pre-determined specifications and quality attributes (Cohen et al., 2011). In order to ensure the validity of the instruments, a multiple data collection technique known as triangulation was applied in this study. The employed multiple data collection techniques included questionnaires, interviews, and FGDs. This permits the researcher to combine strengths and correct some of the deficiencies of some sources of data collection.

Reliability, on the other hand refers to the consistency of research findings (Saunders, Lewis & Thornhill, 2000). Thus, reliability denotes how consistent a study procedureor an instrument is. In short, reliability means the degree of consistency demonstrated in the study. The reliability of the instrument was checked by comparing the results of the respondents. In order to improve reliability, the researchers observed the following: the length of the subject (the longer the instrument, the greater its reliability), heterogeneity of the subject (the more heterogeneous the subject is, the more likely reliability will increase). Also, the researchers ensured clarity of instructions given to those using the instruments (the clearer the instruction, the higher the reliability will be).

RESULTS OF TRAINING NEED ASSESSMENT ANALYSIS

This Training Needs Assessment intended to gather information from the labour market that would help in piloting entrepreneurship training and digital solution training to conform to current trends, demands, and requirements in the market, specifically the exploration of the extent of relevance of course contents provided in the current entrepreneurship curricula to the labor market; examination of additional skills needed among Vocational teachers/tutor and graduates: examination of adequacy of resources required for implementation of the pilot training; Presentation and discussion of the results of this training need assessment report are done based on the specific objectives and questions from the tools.



3.0 Conclusion

In conclusion, conducting a training needs assessment for entrepreneurship and digital solutions is essential to ensure that Vocational Education and Training (VET) programs are aligned with the current demands of the industry and the evolving digital economy. This assessment will provide valuable insights into the specific skills and knowledge gaps of VET educators and students, allowing us to design targeted training programs that enhance their competencies. By identifying and addressing these needs, we can equip

teachers to deliver relevant and impactful training, ultimately improving students' employability and their ability to contribute meaningfully in entrepreneurial and digital landscapes. This proposal, therefore, represents a strategic step toward advancing the quality and effectiveness of VET through informed, data-driven program development.

The analyses of the results are still ongoing, and the full report of the findings will be communicated to the partners in January 2025.

Appendix 1

Co-funded by the European Union

Note: If you wish to send this questionnaire by email, please send to info@kist.ac.tz/ mvttc@veta.go.tz

QUESTIONNAIRE TO IDENTIFY TEACHING ENTREPRENEURIAL SKILLS TO THE VET STUDENTS

NOVEMBER 2024

1.0 INTRUDUCTION

The TVET@Work project aims to enhance vocational education by building the capacity of VET providers and teachers, promoting public-private cooperation, and improving VET's responsiveness to economic and social needs. It focuses on training VET teachers in entrepreneurship, digital pedagogy, and industry collaboration. The project includes co-creative workshops and the development of practical tools and guidelines. Main beneficiaries are VET teachers, industry representatives, and students. The project aligns with national strategies to ensure lasting impact.

Thank you very much in advance for taking time to complete this questionnaire. **Please Tick [√]** the appropriate selection.

Personal & Professional Background

How many years have you been teaching vocational subjects?

1-3 years

4-6 years

7-10 years

More than 10 years

What vocational subject(s) do you teach?
(Drop-down list based on vocational fields, e.g., Information Technology, Carpentry, Electrical Engineering, etc.)

Have you received any formal training in entrepreneurship?

Yes

No

How frequently do you conduct entrepreneurship-related training for your students?

Never

Occasionally (1-2 times per year)

Frequently (3-4 times per year)

Regularly (more than 5 times per year)

Entrepreneurship Knowledge & Integration

How familiar are you with entrepreneurship concepts?

Not familiar

Somewhat familiar

Familiar

Very familiar

How confident do you feel about teaching entrepreneurship?

Not confident

Somewhat confident

Confident

Very confident

Do you currently include entrepreneurship concepts in your vocational training sessions?

Yes

No

Occasionally

What is your main reason for integrating entrepreneurship in vocational training?

To prepare students for self-employment

To teach critical thinking and problem-solving

To encourage innovation

Institutional requirement

Other (please specify)

Technology Use in Teaching

What types of technology do you currently use in your teaching?
(Select all that apply)

Learning Management Systems (LMS)

Online courses

Digital tools (e.g., project management, financial apps)

Virtual/augmented reality tools

None

How would you rate your comfort level with using technology to teach?

Very uncomfortable

Uncomfortable

Comfortable

Very comfortable

Do you use any entrepreneurship-specific software/tools in your teaching?

Yes

No

Planning to

Which of the following technologies would you like to learn more about for entrepreneurship teaching?
(Select all that apply)

Business simulation software

Financial planning tools

Online marketing platforms

E-commerce platforms

Project management software

Other (please specify)

Entrepreneurial Skills & Concepts

Which entrepreneurial skills do you think are most important for vocational students?
(Select up to 3)

Problem-solving

Business planning

Financial literacy

Risk management

Marketing

Leadership

Innovation and creativity

How well do you think your students understand entrepreneurship after completing your course?

Poor understanding

Basic understanding

Good understanding

Excellent understanding

Which of the following do you consider the biggest challenge when teaching entrepreneurship?

Lack of resources

Lack of time

Limited student interest

Insufficient knowledge or training

Integration of technology

Curriculum & Resources

Do you have access to entrepreneurship teaching materials/curriculum?

Yes, provided by the institution

Yes, developed on my own

No, but I would like access

No, and I don't need any

What type of entrepreneurship teaching materials do you prefer?

Online resources (videos, eBooks, tutorials)

Textbooks or printed manuals

Hands-on projects or case studies

Guest speakers or workshops

How do you assess your students' entrepreneurship skills?

Quizzes/tests

Business plan presentations

Practical projects or simulations

Peer evaluations

I do not assess entrepreneurial skills

How satisfied are you with the entrepreneurship-related resources available to you?

Very unsatisfied

Unsatisfied

Neutral

Satisfied

Very satisfied

Barriers & Challenges

What is the biggest barrier to integrating entrepreneurship into your teaching?

Lack of time

Insufficient institutional support

Inadequate technology

Lack of training

Not enough resources

How often do you collaborate with industry professionals to enhance entrepreneurship training?

Never

Occasionally

Frequently

Always

Would you be interested in receiving more training on how to teach entrepreneurship?

Yes

No

Which of the following would be the most useful for you to improve entrepreneurship teaching?
(Select up to 3)

Access to entrepreneurship curriculum

Workshops or training sessions

Access to technology tools

Industry partnerships

Case studies of successful entrepreneurs

Other (please specify)

Training Expectations

What method of training delivery do you prefer for entrepreneurship training?

In-person workshops

Online webinars

Self-paced online courses

Blended (combination of online and in-person)

How often would you prefer to participate in entrepreneurship training programs?

Once a year

Twice a year

Quarterly

As needed

Organization/Institution Stamp
ONCE AGAIN, THANK YOU VERY MUCH FOR YOUR ASSISTANCE

Appendix 2

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QUESTIONNAIRE TO IDENTIFY COMPETENCE IN USING DIGITAL SOLUTIONS

NOVEMBER 2024

1.0 INTRUDUCTION

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Thank you very much in advance for taking time to complete this questionnaire.
Please Tick [√] the appropriate selection.

SECTION A: PERSONNEL INFORMATION

Full Name:

Email:

Telephone number:

Gender:

[ ] Male

[ ] Female

Age Group:

[ ] 20-30

[ ] 31-40

[ ] 41-50

[ ] 51-60

[ ] 61+

Years of teaching experience in vocational education:

[ ] 0-5 years

[ ] 6-10 years

[ ] 11-15 years

[ ] 16+ years

Subject(s) taught:

[ ] Technical Skills (e.g., Electrical, Electronics, Computer, Plumbing, Carpentry etc.)

[ ] Entrepreneurship

[ ] Information and Communication Technology (ICT)

[ ] Business & Administration

[ ] Others (please specify): _____

SECTION B: USE OF DIGITAL TOOLS AND SOLUTIONS IN TEACHING

How often do you use digital tools (e.g., online learning platforms, apps, etc.) in your teaching?

[ ] Always

[ ] Often

[ ] Sometimes

[ ] Rarely

[ ] Never

Which digital tools or platforms do you use the most in your teaching?
(Select all that apply)

[ ] Learning Management Systems (LMS) (e.g., Moodle, Blackboard)

[ ] Virtual Classrooms (e.g., Zoom, Microsoft Teams)

[ ] Educational Apps (e.g., Kahoot, Quizlet)

[ ] Digital Assessment Tools (e.g., Google Forms, Socrative)

[ ] Simulation or Visual Reality Tools (e.g., AutoCAD, Labster)

[ ] Others (please specify): _____

How effective do you find these tools in enhancing learning outcomes?

[ ] Very effective

[ ] Somewhat effective

[ ] Neutral

[ ] Somewhat ineffective

[ ] Very ineffective

Do you think digital tools have improved student engagement in vocational education?

[ ] Yes, significantly

[ ] Yes, moderately

[ ] No change

[ ] No, it has decreased engagement

What digital resources do you believe are most beneficial for vocational education?

[ ] Video tutorials

[ ] Online assessments

[ ] Virtual simulations

[ ] Interactive quizzes

[ ] Digital textbooks

[ ] Others (please specify): _____

SECTION C: DIGITAL PEDAGOGY

13. How comfortable are you with integrating digital pedagogy into your teaching?

[ ] Very comfortable [ ] Comfortable

[ ] Somewhat comfortable [ ] Not comfortable

14. **Have you received any training in digital pedagogy?**

[ ] Yes

[ ] No

[ ] No, but I would like to

15. **How do you design your digital lessons?** (Select all that apply)

[ ] I follow the institution's guidelines

[ ] I create my own materials from scratch

[ ] I adapt existing online resources

[ ] I collaborate with other educators

[ ] Others (please specify): _____

16. **Which areas of digital pedagogy do you find challenging?** (Select all that apply)

[ ] Designing digital lessons

[ ] Managing virtual classrooms

[ ] Ensuring student engagement

[ ] Conducting assessments online

[ ] Keeping up with new technologies

[ ] Others (please specify): _____

17. **Do you believe digital pedagogy can replicate the hands-on, practical experiences needed in vocational education?**

[ ] Yes

[ ] No

[ ] To some extent

18. **What strategies do you use to balance digital instruction with hands-on practical experience?**

[ ] Blended learning (mix of digital and in-person)

[ ] Virtual labs/simulations

[ ] Group projects with digital collaboration

[ ] Fieldwork or internships

[ ] Others (please specify): _____

SECTION D: STUDENT OUTCOMES AND DIGITAL LEARNING

19. Do you notice any difference in student performance when using digital tools compared to traditional methods?

[ ] Performance improves with digital tools

[ ] No noticeable difference

[ ] Performance decreases with digital tools

20. Which student outcomes have been most impacted by digital learning tools? (Select all that apply)

[ ] Technical skills development

[ ] Critical thinking

[ ] Problem-solving abilities

[ ] Collaboration skills

[ ] Creativity and innovation

[ ] Others (please specify): _____

21. Have you noticed any challenges students face with digital learning in vocational education? (Select all that apply)

[ ] Limited access to devices/internet

[ ] Difficulty in understanding technical content online

[ ] Lack of motivation/engagement

[ ] Time management issues

[ ] Technical difficulties with tools/platforms

[ ] Others (please specify): _____

SECTION E: FUTURE OF DIGITAL SOLUTIONS IN VOCATIONAL EDUCATION

22. What improvements would you like to see in digital solutions for vocational education?

[ ] Better platforms for virtual simulations

[ ] More user-friendly digital tools

[ ] Better integration of practical skills and digital instruction

[ ] More training in digital pedagogy for educators

[ ] Others (please specify): _____

23. Do you think vocational education will rely more on digital solutions in the future?

[ ] Yes, significantly more

[ ] Yes, but only moderately

[ ] No, not much

[ ] No, it will return to traditional methods

24. Would you be open to receiving more training or workshops on digital tools and pedagogy?

[ ] Yes

[ ] No

[ ] Maybe, depending on the content

25. Please share any additional comments or suggestions regarding digital solutions in vocational education.

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Organization/Institution Stamp

ONCE AGAIN, THANK YOU VERY MUCH FOR YOUR ASSISTANCE

Appendix 3

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Focus Group Discussion

NOVEMBER 2024

1.0 INTRUDUCTION

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a) Thank you very much in advance for taking time to complete this questionnaire. What specific skills do you believe are essential for teaching entrepreneurship and digital solutions in the current VET environment?

b) What challenges have you faced in integrating entrepreneurship and digital solutions into your teaching practices?

c) In what areas of entrepreneurship do you feel additional training would be most beneficial for VET educators and students?

d) How familiar are you with digital tools and technologies relevant to your industry, and what additional support or training would help you use these effectively in the classroom?

e) How can collaboration with industry professionals improve the teaching of entrepreneurship and digital skills within VET programs?

f) What are your suggestions for practical, hands-on training opportunities in entrepreneurship and digital solutions that could benefit both teachers and students?