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বিষয় : Action Plan for the Establishment of an E-Learning Platform for Vocational Education অনুমোদন সংক্রান্ত।

সূত্র : ডিটিইর স্মারক নং: ৫৭.০৩.০০০০.০১৬.২৪.০১০.২৩-(পার্ট-৫)-২১২, তারিখ : ২৮/০৫/২০২৫ খ্রি ।

উপর্যুক্ত বিষয় ও সূত্রোক্ত পত্রের প্রেক্ষিতে জানানো যাচ্ছে যে, কারিগরি ও মাদ্রাসা শিক্ষা বিভাগ এর আওতায় কারিগরি শিক্ষা অধিদপ্তর কর্তৃক বস্তবায়নাধীন "Human Capital Development Progrmme (HCDP-21)" Budget সহায়তা কর্মসূচির আওতায় Action Plan for the Establishment of an E-Learning Platform for Vocational Education যথাযথ কর্তৃপক্ষ কর্তৃক অনুমোদিত হয়েছে।

০২। এমতাবস্থায়, উপর্যুক্ত বিষয়ে পরবর্তী প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য নির্দেশক্রমে অনুরোধ করা হলো।

সংযুক্তি : অনুমোদিত Action Plan for the Establishment of an E-Learning Platform for Vocational Education.

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সদয় অবগতির জন্য অনুলিপি :
১। সচিব, অর্থ বিভাগ, অর্থ মন্ত্রণালয়, বাংলাদেশ সচিবালয়, ঢাকা।
২। অতিরিক্ত সচিব (পরিকল্পনা ও উন্নয়ন) কারিগরি ও মাদ্রাসা শিক্ষা বিভাগ, শিক্ষা মন্ত্রণালয়, ঢাকা।
৩। প্রকল্প পরিচালক, "Human Capital Development Progrmme (HCDP-21)" বাজেট সহায়তা প্রকল্প, কারিগরি শিক্ষা অধিদপ্তর, আগারগাঁও, ঢাকা।
৪। Team Leader, "Human Capital Development Progrmme (HCDP-21)" বাজেট সহায়তা প্রকল্প, কারিগরি শিক্ষা অধিদপ্তর, আগারগাঁও, ঢাকা।
৫। সচিবের একান্ত সচিব (সিনিয়র সহকারী সচিব), কারিগরি ও মাদ্রাসা শিক্ষা বিভাগ, শিক্ষা মন্ত্রণালয়, ঢাকা।
৬। সংশ্লিষ্ট নথি।

Action Plan for the Establishment of an e-Learning Platform for Vocational Education

May 2025

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Executive Summary

Background and Rationale

Bangladesh faces a significant opportunity with its demographic dividend - approximately 33% of its population consists of youth aged 15-24, with an additional 25% under age 14. To capitalize on this demographic advantage, the Government of Bangladesh (GoB) is rapidly expanding its Technical and Vocational Education and Training (TVET) sector, planning to increase Technical Schools and Colleges (TSCs) from the current 149 to 493, ensuring availability in every upazila.

This expansion requires training thousands of newly appointed instructors who need to develop practical skills beyond their theoretical knowledge. Additionally, curriculum updates aligned with the Fourth Industrial Revolution (4IR) and new equipment procurement necessitate training for even experienced instructors. Traditional classroom-based training cannot meet this scale of demand.

The proposed e-Learning Platform offers a solution through targeted online training modules that address specific gaps in practical skills. These "learning nuggets" or micro-learning modules will provide focused, bite-sized content for instructors to access when needed, especially for mastering equipment use and practical techniques required in the curriculum.

Implementation Strategy

The implementation plan follows a phased approach over three years:

Stage 1: Establishment of the e-Learning Platform at VTTI Bogura (Year 1, Q1-Q2)

1. **Facility Development**: Renovation of two classrooms at the Vocational Teachers Training Institute (VTTI) Bogura to create:
    - A digital material production and training area with capacity for 28 instructors
    - A soundproof room for audio recording
    - Office space for the Team Leader, Media & Communications Specialist, and M&E Specialist

2. **Equipment Procurement**: Acquisition of necessary hardware and software including:
    - High-powered desktop computers for video editing and 3D animation
    - Laptops for module developers
    - Video production equipment (cameras, lighting, green screens, microphones)
    - Printers and other support equipment
    - Specialized software for content development

3. **LMS Configuration**: Installation of Moodle Learning Management System on:
    - A development server at VTTI for testing
    - The Bangladesh Computer Council (BCC) National Data Center (NDC) cloud for production

Stage 2: Establishing National Standards and Quality Assurance (Year 1, Q2-Q3)

1. **Quality Standards Development**: Adaptation of quality assurance frameworks (based on Sri Lanka's Digital Content Accreditation Framework) through workshops with key stakeholders

2. **Example Module Development**: Contracting commercial e-Learning developers to create one high-quality example module in each of the 14 trade areas

3. **National Application Profile**: Development of standardized metadata classifications for digital learning resources to enable efficient searching and categorization

Stage 3: Training and Module Development (Year 1, Q2 - Year 3, Q4)

Staggered Training Approach: Implementation of a seven-month cycle, repeated through multiple phases:

1. **Staggered Training Approach**: Implementation of a seven-month cycle, repeated through multiple phases:
    - Pre-deployment individual learning (1-2 months)
    - Intensive training at VTTI (2 months)
    - Cooperative module development (1 month)
    - Independent module development (2 months)

2. **Scaling Strategy**: A phased approach to training 196 instructors and developing 575 modules over three years:

Phase	**Timeline**	**Instructors Trained**	**Modules Developed**	**Cumulative Modules**
Pilot	Year 1, Q2 - Year 2, Q1	28 instructors	84 modules	84 modules
Phase 2	Year 2, Q2 - Year 2, Q4	28 instructors	84 modules	168 modules
Phase 3	Year 2, Q3 - Year 3, Q1	28 instructors	84 modules	252 modules
Phase 4	Year 2, Q4 - Year 3, Q2	28 instructors	84 modules	336 modules
Phase 5	Year 3, Q1 - Year 3, Q3	28 instructors	84 modules	420 modules
Phase 6	Year 3, Q2 - Year 3, Q4	28 instructors	71 modules	575 modules

3. **Knowledge Transfer**: Each trained instructor will:
    - Complete at least 3 modules within the allocated timeframe
    - Mentoring fellow instructors at their institution
    - Sharing knowledge with colleagues at their TSCs
    - This approach will significantly expand the impact, enabling approximately 960 additional instructors to benefit indirectly from the training

4. **Module Prioritization**: Focus on developing modules in three categories:
    - Category 1: Supporting newly graduated instructors (highest priority)
    - Category 2: Supporting use of unfamiliar equipment
    - Category 3: Other identified needs

Communication and Evaluation

The plan includes a comprehensive communications strategy and monitoring & evaluation framework:

1. **Communications Strategy**: Aimed at promoting acceptance of blended learning approaches through:
    - Social media channels targeting TSC instructors
    - Digital newsletters
    - Success stories and testimonials from instructors and students
    - Recognition of instructors utilizing the platform

2. **Monitoring & Evaluation**: Using mixed methods approach featuring:
    - Initial Knowledge, Attitude and Practice (KAP) survey
    - Website analytics to track usage patterns
    - Focus Group Discussions with instructors and students
    - Ongoing evaluation of module quality and effectiveness

Budget Overview

The total budget for this three-year initiative is BDT 60,170,110 (including 10% contingency), distributed as follows:

Category	**Year 1**	**Year 2**	**Year 3**	**Total (BDT)**
Digital Equipment	7,277,700	0	0	7,277,700
eLearning Center at VTTI	1,216,000	0	0	1,216,000
Technical Activities (LMS, workshops)	3,805,257	5,427,886	3,565,257	12,798,400
TSC Teacher Costs	6,888,000	10,332,000	6,888,000	24,108,000
External Experts	2,657,143	3,985,714	2,657,143	9,300,000
Subtotal	**21,844,100**	**19,745,600**	**13,110,400**	**54,700,100**
Contingency (10%)	**-**	**-**	**-**	**5,470,010**
Grand Total	**-**	**-**	**-**	**60,170,110**

Expected Outcomes and Sustainability

The initiative will create a sustainable system for developing digital learning content within Bangladesh's TVET sector by:

1. Building capacity of 196 instructors in digital content creation, with knowledge transfer to additional instructors in their institutions
2. Establishing quality standards for digital learning resources
3. Creating an organized repository of 575 micro-learning modules covering 14 trade areas
4. Promoting a culture of blended learning and digital literacy among instructors

5. Supporting instructors to conduct more practical sessions with students
6. Improving the quality of vocational education through enhanced practical training

The system integration approach ensures sustainability through open licensing of content, establishing national standards, and building in-house capacity for ongoing digital content development that can adapt to curriculum changes and new equipment procurement.

1.0 Background

Bangladesh's youth, defined as individuals aged 15-24, make up approximately 33% of the country's total population while those under 14 make up around 25% of the population. Thus, Bangladesh is considered a country of young people with reference often made to the demographic dividend or the potential for rapid economic growth that occurs when the working-age population is high relative to the number of dependents.

To take full advantage of this demographic dividend, Bangladesh is investing heavily in the rapid expansion of its technical and vocational education and training (TVET) sector. A substantial increase in the number and quality of technical schools and colleges (TSC) is providing more opportunities for youth including young people in rural areas to take advantage of TVET. Close relationships with industry bodies and government commitment to investing in equipment and training ensure that TSC students graduate with skills that match industry demands. Investments in TVET have resulted in marked changes to economies in neighbouring countries like Indonesia, Malaysia and Thailand while other Asian nations like Japan, South Korea and Singapore have clearly transformed over the past decades through focused skills-based economic development.

There are currently 155 Govt. TSCs across Bangladesh with plans to establish an additional 344 so that students have access to technical and vocational education in every upazila[1]. In addition to this, the Government of Bangladesh (GoB) is committed to promoting the quality of private sector vocational training institutes.

Recruitment of instructors and technical staff to cater to this expansion as well as covering existing unfilled posts has resulted in thousands of newly appointed instructors who need to be trained. While it can be assumed that most newly appointed instructors will come direct from university and have solid theoretical knowledge, they may not have had opportunities to develop practical skills. Moreover, the Bangladesh Technical Education Board (BTEB) is continuously consulting with industry through the Industry Skills Councils (ISCs) to ensure that curricula for TVET institutions under its purview will equip trainees for the fourth industrial revolution (4IR). Substantial investments are being made in the latest equipment to enable instructors to provide the practical training that the curriculum changes demand. Some of this equipment is unfamiliar even to experienced instructors creating a demand for training for them as well. Given this scenario, it will not be possible to meet the demand for continuing professional development through traditional classroom-based training.

Instead, it is proposed to launch a targeted online training intervention providing an immediate response to the need for practical training for newly appointed instructors and ongoing updates for experienced instructors who need to master new jobs[2] and new equipment.

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[1] Comments from Technical and Madrasah Education Division (TMED) to Prepare National Pathways to SDG Transformation for SDG Summit 2023

[2] The term 'job' in this context refers to the practical/workshop sessions described in the curriculum.

A mixed online and hands-on approach is consistent with current hybrid approaches to training and the GoB's commitment to Blended Learning[3] across all spheres of education. Short, focused online modules specifically developed to address gaps in practical skills will be developed and made available to both government and private TVET institutions.

It is not intended for online training modules to build pedagogical skills. Considerable work has already been done by the Government of Bangladesh and in collaboration with development partners to build the pedagogical capacity of TSC instructors to effectively present the new competency-based curriculum. The Certificate IV and V in Competency Based Training and Assessment (CBT&A) in TVET is the recognized qualification for trainers and assessors at the TSC). By the end of 2023, 3,521 TSC instructors had completed CBT&A Level 4 training and 1,219 of them were certified. Two hundred and fifty had completed CBT&A Level 5 training and 85 were certified.

Modules to develop practical skills and master the use of new equipment will take the form of 'learning nuggets'. Learning nuggets, also known as micro-learning modules, are bite-sized, focused pieces of learning content designed to deliver specific learning outcomes efficiently, making learning more accessible and engaging. Examples include short videos, podcasts, interactive simulations, and quizzes.[4] This approach recognises that TSC instructors want to be able to access targeted content quickly at the time it is required and without leaving their institution for an extended period of training. Should they need to know the specifics of how to use an item of equipment, they do not want to have to search again for the relevant information embedded in a full course module intended to be followed over multiple weeks.

In line with best practice, each micro-learning module will commence with a statement of learning objectives and conclude with a quiz designed to test the achievement of these objectives. This will support a system of micro-credentialing whereby the LMS hosting the micro-learning modules may issue certificates, badges, licenses or endorsements that recognise the achievement of instructors who have successfully completed micro-learning modules.

TSC instructors have already embraced online learning and are not anticipated to face any challenges with this modality of learning. A rapid assessment of Internet capacity in TSCs and surrounding areas undertaken in November 2024, established that the bandwidth available even in the more remote TSCs is more than sufficient to support learning online. Multiple online learning initiatives were undertaken during the COVID-19 pandemic, and it is important that the momentum of these earlier initiatives be harnessed to establish blended learning as the norm within the TSC ecosystem.

[3] The Blended Education Masterplan 2022-2041 details a national vision for blended learning across all education sectors.

[4] https://edyoucated.org/en-us/glossary/learning-nuggets#:~:text=are%20learning%20nuggets?-,Definition,accessible%2C%20engaging%2C%20and%20effective.

1.1 A future proof model for action

The action plan outlined here addresses the immediate training needs identified in a curriculum workshop held 13-15 March 2025 where 26 experienced instructors from 14 trade areas identified a list of 575 micro-learning modules with 301 modules to be developed under priority category 1 (modules to help new instructors) and 154 to be developed under priority category 2 (modules requiring the use of unfamiliar and complex equipment). A workshop report and the resultant priority list of modules to be developed is included in Annex A.

As the TSC curricula maintain their pace with industry, training needs will evolve. New micro-learning modules will need to be developed well beyond the scope of this action plan which currently only addresses needs identified within the SSC(Voc.) curriculum. Hence, to ensure sustainability, capacity to develop quality micro-learning resources will need to be developed in-house. The experience of developing modules will also result in deeper understanding of content on the part of the module designers. Modules should be open to adaptation and editing to meet changing and contextually specific needs. They will need to be hosted on the cloud to ensure anytime, anywhere accessibility across the country. It is fortunate that the GoB already provides a reliable cloud hosting service at the Bangladesh Computer Council (BCC) cloud storage service (the NDC or National Data Centre) which is fully accredited by all government entities for national data purposes. It should be noted that like in many other countries, laws[5] in Bangladesh prohibit government derived data sources to be hosted outside the country. The BCC cloud system alleviates concerns as it is run by a government entity and hosted in-country.

1.2 Further dimensions of the model

In this section we outline the components of the development strategy that will ensure the success of the action plan.

1.2.1 Learning Management System (LMS)

Accepted best practice is to make online learning resources available through a learning management system (LMS). Use of an LMS not only provides an online platform where modules can be accessed but has the advantage of generating usage statistics including the level of usage and completion quiz scores which are important for monitoring training progress and user uptake. The LMS to be used will be Moodle™. Moodle is already used widely across the TVET sector with the result that instructors are familiar with the user interface, and there is existing expertise in uploading materials and basic platform administration. To support initial setup and future expansion of functionality, there are certified Moodle developers operating locally. An in-depth description of the functionality that the Moodle LMS provides and the case for its adoption can be found in Annex B.

[5] Bangladesh has multiple laws and regulations that govern cloud computing, including the Data Protection Act, 2023, the Cybersecurity Act, 2023, and the government's sovereign cloud

An essential step in bringing the LMS online will be establishing an API connection to the DTE HRMIS (Human Resource Management Information System). This system maintains up-to-date details of instructors and this information is needed to track uptake of the modules. While this connection is being established, instructor data will need to be maintained manually by LMS Administrators.

Additional functionality which may be added as required includes functions such as enabling users to rate modules, take proctored examinations and/or participate in zoom meetings.

1.2.2 Advanced search functionality

As the number of micro-learning modules increases, it will be important to host them on a structured platform with built-in advanced search functions allowing instructors to easily and quickly locate the resource they need. Ultimately this will require the development of an Application Profile[6] for the TechVoc sector in Bangladesh. An Application Profile defines the metadata used to classify eLearning resources and should be agreed across a sector. Achieving national consensus will require multiple workshops with participation by the BTEB, the BCC and development partners working in the sector. Annex C provides guidelines for the development of a national Application Profile.

1.2.3 Communications Strategy

Technical and vocational education and training in Bangladesh is in a state of continuous change as agencies such as BTEB and the National Skills Development Authority (NSDA) act to provide youth with skills and knowledge to meet evolving demands from industry employers. Competency standards have been gradually introduced in response to the National Skills Development Policy 2011. Courses such as SSC (Voc) and HSC (Voc) have been adapted to meet these competency standards under the National Technical and Vocational Qualifications Framework (NTVQF). New equipment is constantly being procured to keep pace with curriculum change. While all of this is desirable, and indeed necessary for Bangladesh to prepare the next generation for work in the 4IR, it is recognised that constant change in any workplace is a leading cause of burnout and fatigue among employees and likely to result in employee resistance to change unless a responsive change management strategy is adopted.

The goal of the action plan is for instructors to be using newly procured equipment in their lab/workshops to conduct jobs with their students that are part of the updated curriculum. In most cases this will require a commitment to self-learning and a preparedness to use digital tools in that self-learning process.

A clear, consistent and comprehensive communications strategy is an essential component of the change management strategy that will help achieve this goal.

It starts with communicating the vision in a clear and compelling fashion that explains to instructors how the change will benefit them, their students, and the TSC system. This early communication of vision then needs to be followed through regular

[6] Definition of an Application Profile.

communications that document success and motivate instructors to be part of similar success stories. Positive messaging will come from a team of change champions to be identified from within the system. Initially the change champions will comprise the team of instructors leading the development of the digital learning resources.

Communications may take the form of blogs, Facebook posts, Videos shared through WhatsApp groups or on social media platforms such as LinkedIn or Instagram. Digital newsletters can be emailed to instructor email addresses. Articles may be submitted to local newspapers with a dual purpose of building the profile of vocational education as a desirable option. Storytelling is a powerful communications tool and can be adapted to the current context by telling the story of TSC students whose capacity and confidence has been enhanced by engagement with sophisticated tools and equipment, or TSC students who have gone on to be much appreciated by industry employers because of their theory and practical knowledge and skills. Stories will also be told by instructors from within the system and to encourage this sort of collegiate support, the proposed Moodle platform will be installed with a zoom add-in. Instructors who take advantage of the digital learning resources created will be identified through website analytics and recognised for their initiative.

A dedicated Media & Communications specialist will be recruited to lead the way on the change management communications strategy. They must have sufficient time and resources to make contacts with industry, current and past students, and instructors.

1.2.4 Ensuring quality from the start

DTE will need to identify quality standards that it wants all materials to be hosted on the LMS to meet. To provide an example of an appropriate standard, is Sri Lankan Digital Content Accreditation Framework (DiCAF) for general education. An introduction to this framework is included in Annex D. The DiCAF is provides as a companion volume. Adaptation of the Sri Lankan DiCAF to the Bangladesh TechVoc context will require a series of workshops involving DTE and BTEB officials and representatives of development partners working in the sector.

DTE will also need to set up a body to assess whether newly produced materials meet these standards. Normally such a body will include at least subject matter experts, instructional design experts and technical specialists. As the sector opens up to a greater diversity of students, it will be advisable to add an inclusive education specialist to the group. Initially this quality assurance (QA) function can be covered by the development team working at VTTI Bogura.

1.2.5 Monitoring and Evaluation

The implementation plan presented in the next section describes a staggered approach to training and materials production. This will allow for each stage of the initial pilot to be evaluated giving time for the iterative improvement of the process. The monitoring and evaluation framework for the eLearning action plan can be found in Annex E.

2.0 Implementation Plan

The next section outlines a structured plan for the:

1) Establishment of an eLearning development facility at the VTTI
2) Procurement and installation of Moodle LMS on the National Data Center (NDC) cloud
3) Recruitment of specialist staff
4) Initiating the communications and M&E strategies, and
5) Training instructors in the development of the micro-learning modules.

Reference should be made to related Gantt charts on the following pages.

2.1 Establishment of the eLearning Platform at VTTI Bogura

The VTTI at Bogura is the main training centre for TSC instructors. DTE is in the process of updating equipment in each of the 14 trade areas. Once this is done, developers of micro-learning modules[7] will be able to use this equipment to make 2D and 3D images and videos of the equipment for inclusion in the micro-learning modules.

The eLearning platform must comfortably host up to 30 module developers together with instructors and equipment including a high-powered desktop for video editing and/or 3D animation, a locally networked server with a replica LMS to provide a development environment, a green screen,[8] a video light kit, colour and black-and-white laser printers. If there is limited expertise in the use of a particular item of equipment within the TSC system, it may be necessary to bring in industry expertise. The development team will also require the support of administration staff including an office manager cum finance officer, an LMS administrator, and an administrative assistant who will be deputised from within the existing TSC staff. Provision must be made for an additional office for the Team Leader, and a Media and Communications specialist within the VTTI complex. There must also be a soundproof room where video and animation voice-overs can be recorded. This will require the renovation of at least two existing classrooms. Costings for the renovation and an equipment list are provided in Tables 1 and 2 below. Costings for the recruitment of a Team Leader and Media & Communications Specialist are provided in Table 3. Costings are valid as of March 2025.

[7] A module refers to a short course of learning in this case the aim is for 1-2 hours – it is made up of various micro-learning activities (videos, quizes etc.)

[8] A green screen is a solid, bright green background used in video production for a technique called chroma keying, allowing video creators to isolate the green colour and replace it with a different background during post-production.

Table 1: Renovation costs[9]

eLearning center at VTTI (soundproof room and office space)	Description	Units	BDT unit price	Qty	total BDT
soundproofing foam	complete soundproofing	48sm	3900	20	78000
sound proofing technicians and other improvements	labor and other improvement	lump sum	200000	1	200000
office/classroom furniture	furniture		300000	1	300000
lighting, wall outlets, cabling etc...	electrical upgrades	outlets	200000	1	200000
inverter type wall mounted air conditioner	1.5-ton wall mounted split	AC	73000	6	438000
					1,216,000

Table 2 Digital equipment costs

Digital Equipment	Description	units	BDT unit price	Qty	Total BDT
Video editing computers and development server	AIO form factor 27" FHD Touchscreen, Core 7-150U, NVIDIA GeForce MX570A, 64 GB RAM, 2 TB SSD, Wi-Fi 6E, Win 11 Pro, with Office Lifetime License & Designed Mouse	computer	189000	3	567000
Computer monitor	28 SS IPS Panel Size 3840 x 2160 (UHD) cable Accessories	monitor	68000	3	204000
keyboard/mouse	Wired keyboard/mouse	set	900	3	2700
Laptop computers	Processor: 13th Gen Core i3-1315U RAM & Storage: 8GB DDR4, 512GB M.2 NVMe PCIe 3.0 SSD Graphics: Intel UHD Graphics Display: 15.6-inch Full HD 2 Years Official Warranty	laptop	67000	33	2211000
RAM memory for laptops	upgrade laptop RAM to 16gb	RAM	1400	33	46200
Wifi router	AC1200 Wireless MU-MIMO Gigabit 802.11ac Wave2 WiFi–867 Mbps on the 5 GHz bandand400 Mbps on the 2.4 GHz band† 4 external antennas	wifi	3200	6	19200
Large screen smart TV	LCD/LED litPanel Size: 75 inch (189 cm) 3840 x 2160 (4K) Operating System: Google TV App Support: Google Play Store, Screen Mirroring, Voice Command: Google Assistant,	TV	130000	3	390000
3D scanner	Scan Mode- Structed Light Scan, Point Distance- 0.1 mm ~ 3 mm, Light Source- Infrared VCSEL structured light, Working Distance -Effective Working Distance: 160mm-1400mm Optimal	3dscanner	125000	4	500000

[9] Taxes, shipping, handling and installation costs are not included

Digital Equipment	Description	units	BDT unit price	Qty	Total BDT
	Working Distance: 400mm, Depth of Field- 160-1400mm, Maximum FOV- 434mm*379mm (under optimal work distance), Scan Speed- 980,000points/s, up to 14FPS, Align Modes- Feature Alignment, Hybrid Alignment, Texture Alignment, Global Markers, Texture Scan, Interface- USB2.0 or above, Outdoor Scanning, Output Formats- OBJ; STL; PLY; P3; 3MF, Scanner Size - 220mm*46mm*55mm, Body Weight- 500g				
Video camera	Camera sensor -Type 1/1.9 (6.3 x 5.5mm) CMOS sensor with native 8:7 aspect ratio, Video -5.3K at up to 60p, 4K at up to 120p, 8x slow-mo (2.7K at 240p), 'HDR' video mode, Vertical video support (9:16 ratio),10-bit video, and new GP-Log video option, 24.7MP still photos from video Photos - 27MP photos, including Raw + JPEG, Ultra-wide 177° field of view with optional new Max Lens Mod 2.0, image stabilization Wireless audio support for Apple AirPods and other Bluetooth headphones Waterproof up to 10m (33ft) Standard 1/4-20 mounting thread on the bottom Volta Battery Grip, Media Mod, Light Mod, Enduro Battery	camera	79500	6	477000
Micro SD card	microSD card with a V30 and Class A2 rating, 128gb size	sdcard	1100	12	13200
Professional Camera Tripod	Material: Magnesium Aluminum Alloy Net Weight: 4.46lbs(include ball head) Sections:4, Head Type: Ball Head Features: Foldable, Transverse center column, monopod Head Material: Die-casting metal, Locking type: Locking knob Locking material: Magnesium aluminum alloy Max Height: 75.6”, Min Height: 14.76”, Load Capacity: 8KG	tripod	13000	6	78000
Video light kit	GVM RGB LED Panel Video Light, Photography Lighting with APP Control, Video Lighting Kit for YouTube Studio, Gaming, Streaming Lighting Type: Continuous Output Lighting Color Temperature Version: RGB Version Brightness Adjustment Range:0 - 100% Lighting Type: Continuous Output Lighting Color Temperature Version: RGB Version	lighting	29000	6	174000
Microphone kit	Adjustable Height: 13"-20"/32cm-52cm, Boom Length: 10"/25cm Microphone Pop Filter: Protect your microphone from surplus spit caused by over eager performers. Spider Shock Mount: Designed to absorb vibrations from the floor and air, allowing a cleaner reproduction of sound.	microphone	26000	6	156000
Backdrop screens	Green Screen 5.6 x 9 feet Backdrop Background for Photography	screen	900	6	5400
Backdrop stands kit	Photography Photo Studio T-Shape Backdrop Background Stand Frame Support System Kit for Video Chroma Key Green Screen With Stand	stands	10000	6	60000
Inkjet printer	Printer Type - Single Function Color INK Printer Print Speed (Black) - 8ipm (ISO) (A4),3ipm (ISO) (A3), 22ppm (Draft) (A4) Print Speed (Color) - 8ipm (ISO) (A4),3ipm (ISO) (A3), 22ppm (Draft) (A4) Print Resolution - 5760 x 1440 dpi(pixel), Photo Printing - Yes Paper Size Minimum - A6, Paper Size Max. - A3	printer	100000	2	200000

Digital Equipment	Description	units	BDT unit price	Qty	Total BDT
	Connectivity - USB, WiFi, Networking - Wireless LAN IEEE802.11a/b/g/n, Wi-Fi Direct Mobile Device Printing – Yes, Ink Tank - Yes				
Multifunction laser printer	Laser jet printer A3 Print, Copy, Scan Functions Print and Copy Speed 22 ppm (Black)Automatic Duplex Printing Processor speed 600 MHz Print Resolution (1200x 1200) dpi Connectivity USB 2.0 Ethernet1 Year Official Branded Warranty	printer	87000	2	174000
Editing software	i.e. Filmora, Camtasia and a range of free solutions	software	2000000	1	2000000
					7277700

Table 3: Costing for externally recruited experts.

External experts		units	BDT unit price	Month	Total BDT
Team Leader	TVET and M&E Specialist	Month	500000	15	7,500,000
Media and Communications expert	Social Media Management	month	300000	6	1800,000
					9,300,000

GANTT CHART 1	PREP			Y1, Q1			Y1, Q2			Y1, Q3			Y1, Q4		
Conduct workshop to identify priority jobs and stakeholder perceptions of digital resource requirements															
Contract or deputate Team Leader to manage 3-year rollout. Also office manager/accountant and admin officer.															
Establish and equip an eLearning Centre at the VTTI															
Design eLearning Centre Platform															
Renovate soundproof room															
Renovate working area															
Procure equipment															
Create development environment, and install LMS with selected plug-ins															
Procure 100 GB Cloud VPS server from the National Data Center (NDC)															
Acquire domain name from BTRC															
Contract 4 IT specialists with a range of skills including instructional designer, graphic designer, animator, videographer, 3D specialist, and script writer.															
Contract Team Leader, Media and Communications specialist															
Contract Media & Comms Specialist															
Conduct KAP Survey															
Design QA framework and develop Application Profile															
Design and commence rollout of communications strategy and MEL framework															
Install LMS with selected plug-ins on VPS server at NDC and create user accounts															

2.2 Configuration of the LMS and Establishment of National Standards

Replica versions of the Moodle LMS will need to be installed on the development (testing) environment server at VTTI and the production environment (the VPS on the NDC government cloud). If possible, a gateway (simple software to port data from system to system) can be built to connect DTE's HRMIS, also hosted on the government cloud, with the LMS. This can be done using Moodle's freely available API (application programming interface). At the time of LMS development any API's and add-ons to provide the additional functionality will be included (a module user-rating option, provision for examination proctoring, and zoom) as well as setting up data security and privacy protocols.

Activities such as development of the QA standards for digital materials hosted on DTE servers and the development of a national application profile will need to be workshopped since they require consensus between decision-makers. To have national applicability, participation will extend beyond DTE to include senior officials of BTEB. Costings for LMS configuration and workshops are provided in Table 4. Once again, these costs are valid as of March 2025.

Table 4: LMS configuration and standard setting workshop costs

Activities		**units**	**BDT unit price**	**qty**	**Total BDT**
Multimedia trainers	intensive training at VTTI (must validate all modules developed by TSC instructors)	hrs	2,000	2240	4,480,000
Content Accreditation Framework	workshops	workshop	64,000	2	128,000
Application Profile Workshops	workshops	workshop	64,000	3	192,000
Management Costs	ceremonies, refreshments, materials, consumables, basic maintenance of equipment etc...(Annex H)	batch	1,000,000	7	7,000,000
Configure LMS	Initial setup	lump sum	128,000	1	128,000
Ongoing maintenance	IT firm contracted to provide ongoing maintenance	day	25,600	25	640,000
Hosting on Government Cloud	Hosting costs for the project duration	year	76,800	3	230,400
					12,798,400

2.3 Training of Instructors and Module Development

The DTE has recognized that core to growing digitization in the TSC system is to build qualified content developers. Thus, all training modules will be built internally through secondment of current TSC instructors from each of the 14 trade areas. As each group of TSC instructors are trained, they will serve as role models at their institutions to drive a broader agenda of digital integration in the TSC curriculum while using their contributions to the digital TVET learning modules.

Experienced instructors from each of the 14 trade areas participated in a workshop from 13-15 March 2025 to identify jobs (practical training sessions) that instructors have an

urgent need for support with. The criteria for job identification included 1) jobs that recent graduates need support with, 2) jobs that require the use of new equipment that even experienced instructors may not have used previously and 3) modules with a lesser priority. The workshop report and a full identification of jobs and micro-learning modules required can be found in Annex A and in the companion volume to this action plan: "SSC (Voc) Prioritised Module Development Plan". Table 5 summarises the number of modules identified for development in each trade area. Note that in some cases where it was thought that a single 1–2-hour module might not be sufficient to cover the skills required for the job, multiple modules might be stipulated.

Table 5: Micro-Learning Module requirements by Trade Area

Trade Area	Categories			
	1	2	3	
Apparel Manufacturing Basics	22	11	3	**Category 1:** Required to support newly graduated instructors **Category 2:** Required to support use of unfamiliar equipment **Category 3:** Other **TOTAL:** 575
Automobile and Auto Electric Basics	38	16	6	
Civil Construction and Safety	31	17	17	
Farm Machinery	27	20	20	
Fish Culture and Breeding	12	8	7	
Food Processing and Preservation	13	13	7	
General Electrical Works	16	12	16	
General Electronics (ENT)	10	8	11	
IT Support and IoT Basics	13	7	2	
Machine Operation Basics	15	11	4	
Plumbing and Pipe Fitting	23	6	2	
Poultry Rearing and Farming	13	12	12	
Refrigeration and Air Conditioning	56	2	0	
Welding and Fabrication	12	11	13	

The model proposed to develop the 575 modules is a staged approach involving repeated rounds of seven batches of intensive engagement staggered over a 3-year period (total 7 rounds including a pilot round) (refer Fig. 1).

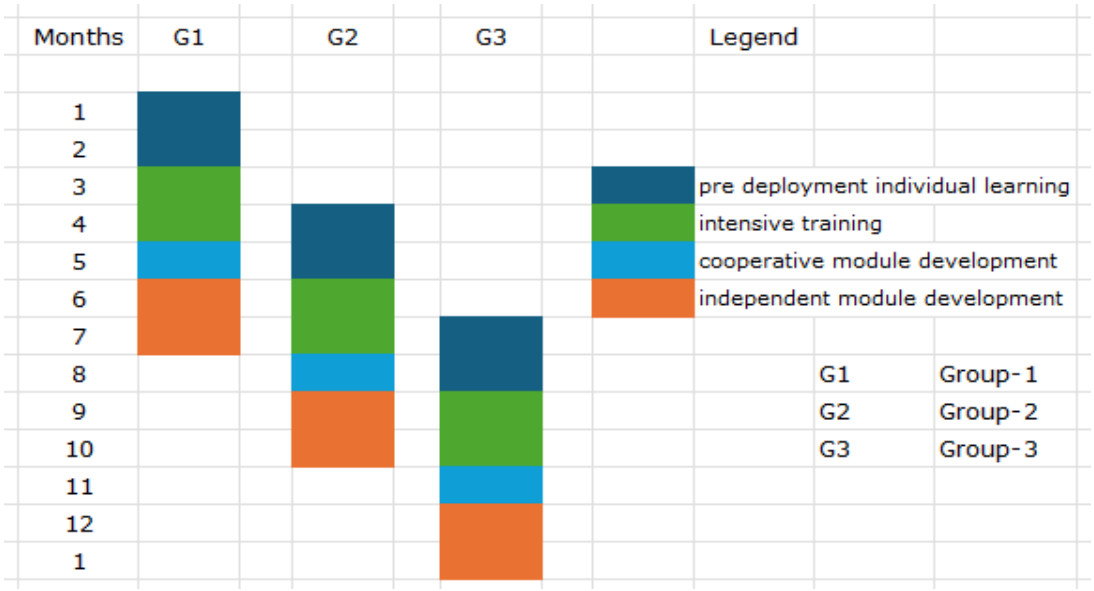


Figure 1: Staggered pattern of training and module development

During the initial (pilot) phase, 28 TSC instructors will be selected from the 14 trade areas. Thereafter the number of instructors will vary to meet requirements as some trade areas have indicated a need for developing a greater number of modules than other trade areas. The stages consist of the following:

1. **Pre-deployment individual learning** - Following a blended learning approach, instructor participation in the development of micro-learning modules starts with self-learning of some of the skills that they will need for the task. It is reasoned that experiencing learning from micro-learning modules first-hand will be an invaluable exercise in understanding what works and what should be avoided. Instructors will be directed to online education platorm which provides certification for successfully completed micro-courses. They will be challenged to complete 2-3 of these modules over a period of one to two months.
2. **Intensive training** – Instructors will go through a 2-month intensive training on site at the VTTI where they will be led by four IT technical trainers including an instructional design specialist, a graphic design expert, a video production expert and possibly an expert in the production of 3D images. These technical experts will be contracted for 6 months/year over three years. Costings for their deployment can be found in Table 4 above. The training will cover a range of eLearning tools and module production processes such as script-writing and instructional design with possible examples as follows:

1. Interactive quiz / materials maker (e.g. H5P, Genially)
2. Video production (e.g. Camtasia, PowerPoint 360)
3. Audio production (e.g. Audacity, Google Music LM)
4. Graphics (e.g. GIMP, Canva)
5. Animation design (e.g. Powtoon)
6. 3D Modelling (e.g. Unity)*
7. 3D Art (e.g. Maya, Blender) *
8. UI/UX designer (e.g. Adobe XD) *

* Time and instructor interest permitting.

3. **Cooperative module development** – During this period, instructorss will work intensively with the eLearning specialists for a further month on the production of the micro-learning modules that were identified as top priority for development. It is proposed that this be done remotely from their institutions, but the phasing model shown in Gantt Charts 2A and 2B below supports direct interaction at the VTTI should it be found that face-to-face interaction is preferred (subject to budget constraints). By the end of this period it is expected that each bach of instructors will contribute 28 total modules.
4. **Independent module development** – After this period of intense collaborative work, instructors will have a further two months to produce 2 more modules per each instructors. It is anticipated that each instructors will be able to produce three micro-learning modules over a seven-month period resulting in 84 modules being generated by 28 instructors. However, while the number of instructors per batch remains constant at 28, as the number of modules required per trade varies it is necessary to adjust the number of instructors per trade based on the demand. Over a period of three years the plan is to develop 575 modules. This is the number of modules identified by participants in the March 2025 workshop with 287 being listed as priority/category 1 and 154 being listed as priority/category 2. The staggered approach to module development is illustrated in Gantt Charts 2A and 2B below (table 8) with a completion date at the end of Year 3.

Table 6: total number of modules requested in each of the three priority categories described above

	1	**2**	**3**		**% total**
Refrigeration and Air Conditioning	56	2	0	58	10%
Automobile and Auto Electric Basics	38	16	6	60	11%
Civil Construction and Safety	31	17	17	65	11%
Farm Machinery	27	20	20	67	12%
Plumbing and Pipe Fitting	23	6	2	31	5%
Apparel Manufacturing Basics	22	11	3	36	6%
General Electrical Works	16	12	16	44	8%
Machine Operation Basics (MC)	15	11	4	30	5%
Poultry Rearing and Farming	13	12	12	37	6%
Food Processing and Preservation	13	13	7	33	6%
IT Support and IoT Basics	13	7	2	22	4%
Welding and Fabrication	12	11	13	36	6%
Fish Culture and Breeding	12	8	7	27	5%
General Electronics (ENT)	10	8	11	29	5%

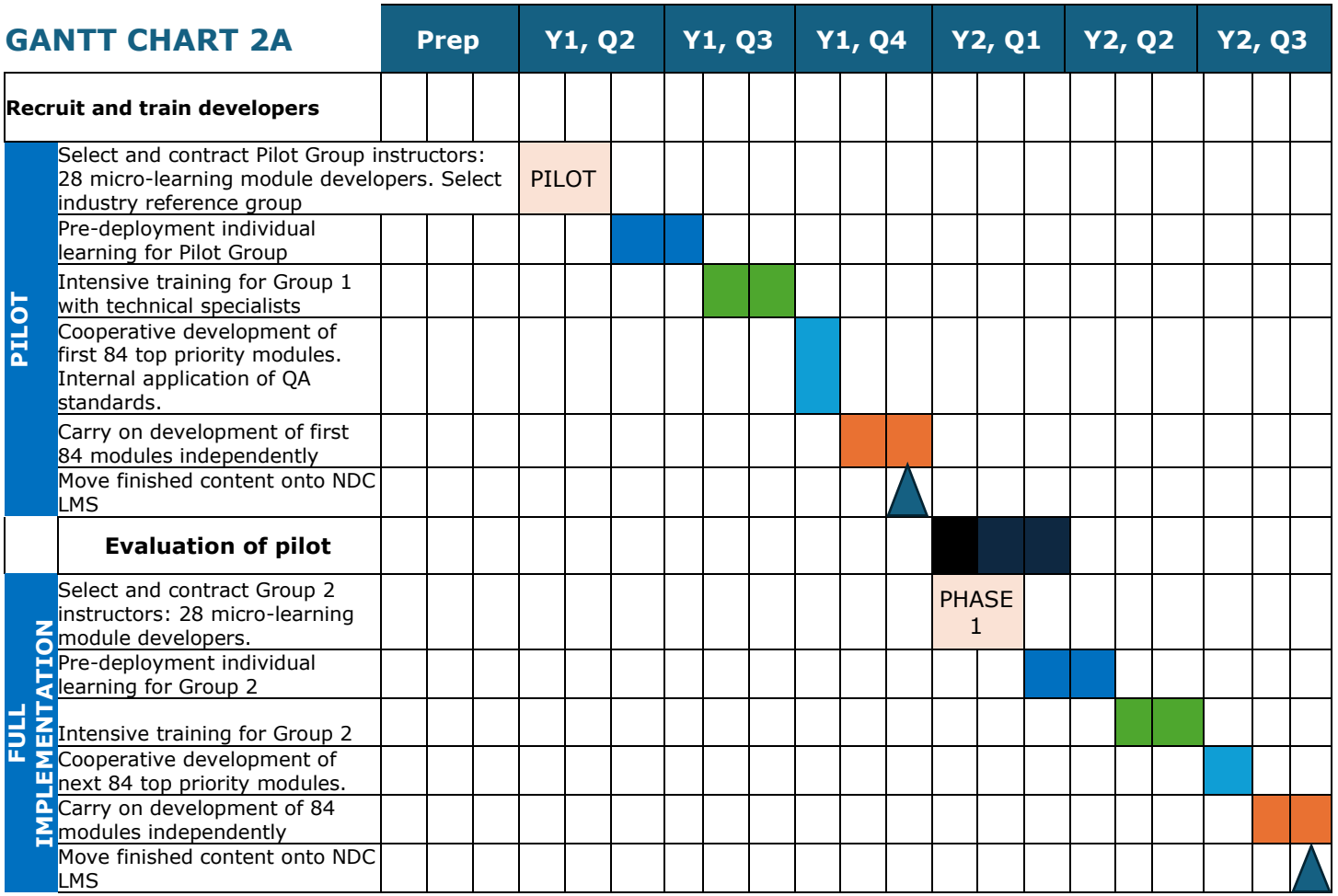
Table 8 below lists the number of modules to be developed in each phase and suggests the number of instructors to be recruited from each trade area. Costings for instructor training are included in Table 7 and ANNEX:H

Table 7: Instructor training attendance costs (ANNEX:H)

TSC instructors		Units	BDT unit price	Units	Total BDT
travel	round trip	RT	5000	196	980,000
Honorarium for VTTI	40 days at VTTI (1 modules to be submitted)	days	1000	7840	7,840,000
Honorarium for home Institute	60 days home institute work (3 modules to be submitted)	days	300	11,760	3,528,000
per diem	60 days	days	1000	11,760	11,760,000
					24,108,000

Inclusion in the module production teams will be a competitive process with group members being selected based on a position application and interview. Naturally, they will be recognized for their achievements by peers and managers. The names of module authors will be displayed on splash screens and the user rating add-on to Moodle will provide a facility for fellow instructors accessing the modules to rate their quality and usefulness. Instructors selected for inclusion will be asked to sign a contract which requires them to complete at three modules within the allocated time, contribute to communications postings, and support fellow instructors at their institution. The basis of this contract can be found in Annex F.

GANTT CHART 2A



GANTT CHART 2B

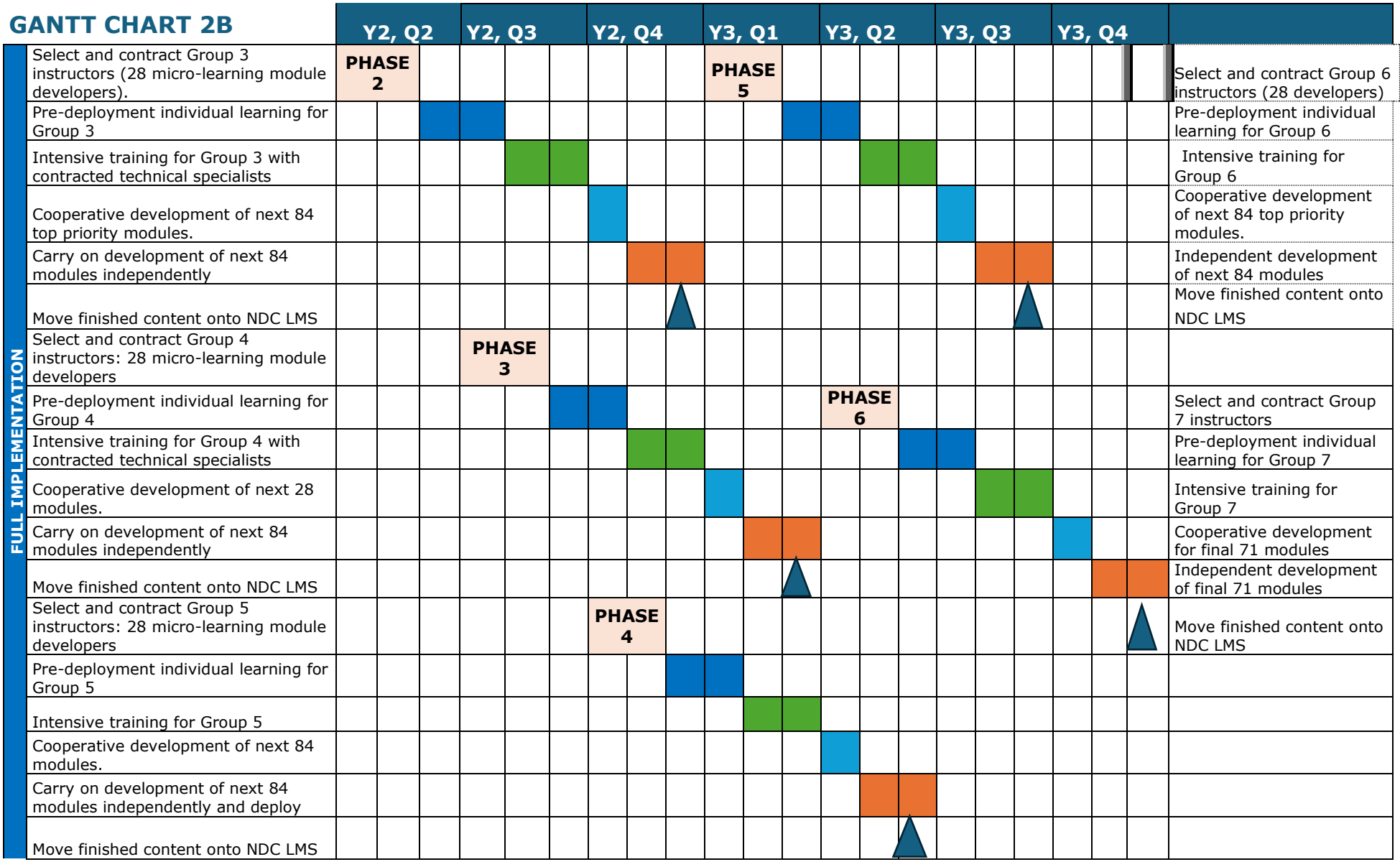


Table 8: Phased plan for module development

PHASE	TRADE AREA	No of Trainers	No. MDLE DEVELOPED	CUM # OF MODULES
PILOT (Y1, Q2 - Y1, Q4)	Refrigeration & Air Conditioning	3	9	9
	Automobile & Auto Electric Basics	3	9	18
	Civil Construction and Safety	2	6	24
	Farm Machinery	3	9	33
	Plumbing and Pipe Fitting	2	6	39
	Apparel Manufacturing Basics	2	6	45
	General Electric Works	4	12	57
	Machine Operation Basics (MC)	1	3	60
	Poultry Rearing and Farming	1	3	63
	Food Processing & Preservation	1	3	66
	IT Support and IoT Basics	2	6	72
	Welding and Fabrication	2	6	78
	Fish Culture and Breeding	1	3	81
	General Electronics (ENT)	1	3	84
TOTAL		**28**	**28**	**84**
PHASE 1 (Y2, Q1 - Y2, Q3)	Refrigeration & Air Conditioning	3	9	93
	Automobile & Auto Electric Basics	3	9	102
	Civil Construction and Safety	3	9	111
	Farm Machinery	4	12	123
	Plumbing and Pipe Fitting	1	3	126
	Apparel Manufacturing Basics	1	3	129
	General Electric Works	2	6	135
	Machine Operation Basics (MC)	1	3	138
	Poultry Rearing and Farming	1	3	141
	Food Processing & Preservation	2	6	147
	IT Support and IoT Basics	2	6	153
	Welding and Fabrication	2	6	159
	Fish Culture and Breeding	1	3	162
	General Electronics (ENT)	2	6	168
TOTAL		**28**	**28**	**168**
PHASE 2 (Y2, Q2 - Y2, Q4)	Refrigeration & Air Conditioning	3	9	177
	Automobile & Auto Electric Basics	3	9	186
	Civil Construction and Safety	3	9	195
	Farm Machinery	3	9	204
	Plumbing and Pipe Fitting	1	3	207

	Apparel Manufacturing Basics	2	6	213
	General Electric Works	2	6	219
	Machine Operation Basics (MC)	2	6	225
	Poultry Rearing and Farming	1	3	228
	Food Processing & Preservation	2	6	234
	IT Support and IoT Basics	1	3	237
	Welding and Fabrication	2	6	243
	Fish Culture and Breeding	1	3	246
	General Electronics (ENT)	2	6	252
TOTAL		**28**	**84**	**252**
PHASE 3 (Y2, Q3 - Y3, Q1)	Refrigeration & Air Conditioning	3	9	261
	Automobile & Auto Electric Basics	3	9	270
	Civil Construction and Safety	4	12	282
	Farm Machinery	3	9	291
	Plumbing and Pipe Fitting	2	6	297
	Apparel Manufacturing Basics	2	6	303
	General Electric Works	2	6	309
	Machine Operation Basics (MC)	1	3	312
	Poultry Rearing and Farming	2	6	318
	Food Processing & Preservation	1	3	321
	IT Support and IoT Basics	2	6	327
	Welding and Fabrication	1	3	330
	Fish Culture and Breeding	1	3	333
	General Electronics (ENT)	1	3	336
TOTAL		**28**	**84**	**336**
PHASE 4 (Y2, Q4 - Y3, Q2)	Refrigeration & Air Conditioning	3	9	345
	Automobile & Auto Electric Basics	3	9	354
	Civil Construction and Safety	3	9	363
	Farm Machinery	4	12	375
	Plumbing and Pipe Fitting	1	3	378
	Apparel Manufacturing Basics	1	3	381
	General Electric Works	2	6	387
	Machine Operation Basics (MC)	1	3	390
	Poultry Rearing and Farming	2	6	396
	Food Processing & Preservation	2	6	402
	IT Support and IoT Basics	1	3	405
	Welding and Fabrication	2	6	411
	Fish Culture and Breeding	1	3	414

	General Electronics (ENT)	2	6	420
TOTAL		**28**	**84**	**420**
PHASE 5 (Y3, Q1 - Y3, Q3)	Refrigeration & Air Conditioning	3	9	429
	Automobile & Auto Electric Basics	3	9	438
	Civil Construction and Safety	3	10	448
	Farm Machinery	3	9	457
	Plumbing and Pipe Fitting	1	3	460
	Apparel Manufacturing Basics	2	6	466
	General Electric Works	2	6	472
	Machine Operation Basics (MC)	2	6	478
	Poultry Rearing and Farming	1	3	481
	Food Processing & Preservation	2	6	487
	IT Support and IoT Basics	1	3	490
	Welding and Fabrication	2	6	496
	Fish Culture and Breeding	1	3	499
	General Electronics (ENT)	2	5	504
TOTAL		**28**	**84**	**504**
PHASE 6 (Y3, Q2 - Y3, Q4)	Refrigeration & Air Conditioning	2	4	508
	Automobile & Auto Electric Basics	2	6	514
	Civil Construction and Safety	2	5	519
	Farm Machinery	2	6	525
	Plumbing and Pipe Fitting	3	7	532
	Apparel Manufacturing Basics	3	6	538
	General Electric Works	3	8	546
	Machine Operation Basics (MC)	2	6	552
	Poultry Rearing and Farming	3	7	559
	Food Processing & Preservation	1	3	562
	IT Support and IoT Basics	2	4	566
	Welding and Fabrication	2	6	572
	Fish Culture and Breeding	1	3	575
	General Electronics (ENT)	0	0	575
TOTAL		**28**	**71**	**575**

*Note – each phase of the project consists of maximum 28 instructors per phase/batch whereby they are contracted to produce 3 modules each for a total of 84 modules per phase and 575 modules overall. In phase 6 28 instructors producing 71 modules are needed to accomplish 575 total modules requested.

2.4 Communication and Monitoring & Evaluation

Gantt Chart 2A, indicates a 3-month period of evaluation immediately following the pilot phase of module development. This will allow for adjustments to be made based on lesson learned from LMS statistics and user and developer feedback. Reference should be made to Annex E for a full description of the approach to Monitoring and Evaluation.

The first micro-learning modules will go live on the LMS in Q4 of the first year. To launch this content, it is proposed to hold an event showcasing the initiative, DTE's blended learning vision, and the modules produced by instructors participating in the pilot phase of development. The participation of high-profile attendees will generate compelling communications materials related to the event. This can be expected to motivate instructors within the TSC system to explore the available learning resources providing necessary data for the evaluation of the pilot.

The basic communications and M&E plan is depicted in Figure 2. This plan is kept intentionally high level to allow the Media & Communications Expert and M&E expert to provide more detailed inputs once recruited.

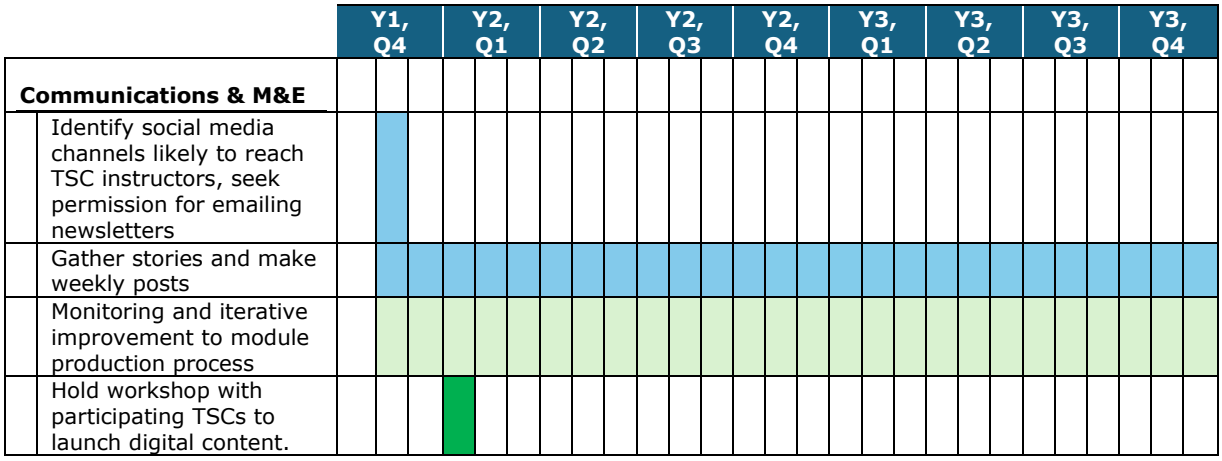


Figure 2: High level Communications and M&E Plan

3.0 System Integration and Sustainability

Adoption of the Action Plan will not only meet the immediate needs of the DTE and its instructors but will build capacity within the TSC ecosystem to continually support instructors to keep pace with curricula and industry changes. DTE will lead the way on the establishment of national quality and metadata standards for online materials which will guide private sector providers and development partner initiatives. This is essential to ensure that learners following TechVoc training in Bangladesh can expect to be supported with high quality digital materials.

Once quality standards for digital content have been agreed upon, sharing and localisation of resources currently being developed across projects and agencies will become easier. Content creators and instructors wishing to adapt and reuse content should be able to do so through an open access model that ensures creative and educational content interchange (borrow, adapt, exchange). Hence, all content developed within the three years covered by the action plan will be licensed under

Creative Commons licensing which has the potential to enable localisation of content while assuring appropriate accountability and recognition for products developed.

The TVET Development Action Plan 2025-2030 addresses pedagogy and skills training for TVET instructors. Once high-quality digital learning resources are available, this can be expediently achieved using a blended learning approach similar to that already adopted to training instructors for CBT&A Level 4 & 5 certification.

It is anticipated that first steps will be taken towards establishment of the eLearning platform at VTTI Bogura within the 2025 calendar year. Two classrooms at the VTTI be renovated to provide a digital material production and training area sufficient to house 30 instructors and their trainers and equipment with an adjacent soundproof room for audio recording. In the subsequent years, the focus will be on the production of the anticipated number of micro-learning modules meeting quality standards.

ANNEX A: Outputs of Curriculum Workshop

A workshop was held with 26 TSC instructors from each of the 14 trade areas on 13-15 March 2025. The main objective of the workshop was to analyze jobs (practical tasks) from all trade areas and to determine how many modules would be required in digital format to support instructors to conduct the job/practice sessions with their students. Priority lists were generated based on three categories:

A. Level 1, being modules that will assist new instructors to address their need to learn how to do selected practical tasks.
B. Level 2, equipment at the TSC that has been left untouched as instructors do not currently have experience in its use.
C. Level 3, all other practical tasks that may need digital modules to help prepare TSC instructors.

The details of the modules to be produced with reference to the related job in the curricula of each of the 14 trade areas is included in the companion volume to this action plan: 'SSC (Voc) Prioritised Module Development Plan.docx'

ANNEX B: Rationale for LMS Selection

While it has been established that the best way forward to develop thousands of new instructors in the TechVoc system is through some level of digital and online learning[10], it is important to point out exactly what are the most minimal features necessary. In general, those features would include three basic functions #1 the ability to create a digitally delivered training program (following proper instructional design), #2 learner rostering – which refers to the ability to enrol and manage learners and #3 user metrics – the ability to generate data about the learning program (completion rates, learner performance, progress reports, assessment and user feedback to mention a few).

While those key features can be considered essential, there is much more to developing a robust learning tool that can serve the needs of a dynamic education system. Through in-depth analysis[11] of a range of potential commercially and freely available LMS solutions, in addition to the option of creating an LMS from scratch, it has been decided to adopt Moodle which is the world most prolifically used LMS. The following is a list of key features that are well developed in Moodle.

#	Feature	Short description
1.	Course creation	Moodle Content Authoring Tool: A tool that allows users to create, manage, and share interactive course content without needing programming skills
2.	User Management	Access control with roles based on administrator, instructors and student allowing levels of editing capability
3.	Assessment	Tailored online performance tracking through quizzes, surveys/polls, assignments and gradebooks. Add-ons are also available to allow remote examination proctoring.
4.	Analytics	Individual or team performance tracking to help follow and assess impact including offline learning tracking to ensure activities outside the LMS are recorded.
5.	Security	A range of features to protect users and their data including 2-factor authentication, data backups, encryption, recovery protocols and single sign on. Support for high level security protocols and privacy settings.
6.	Learning pathways	Provision of methods to provide personalized learning pathways linked to standards
7.	Accessibility	Multiple ways to access digital courses through web browser and mobile applications. Additional features tailored to those with disabilities including screen reader functionality, text descriptions for images, closed captioning, and contrast controls.
8.	Professional/social interaction	Supporting a range of methods for learners and instructors to interact through discussion, chat, live sessions (including integration with a range of commonly used video conferencing platforms).
9.	Integration and data migration tools	Enhanced functionality through external database enrolment and authentication, use of API (application programming interface) -to facilitate data exchange between applications.
10.	Gamification	Moodle integrates badges, activity completions, H5P and a range of plugins to enhance the user experience increasing engagement and leading to improved learning outcomes
11.	Functionality	There are over 2000 plugins that can be added to the standard Moodle package to bridge the gap between the standard installation and the users' needed features
12.	Extensive support network	With over 213 million users the Moodle **Community of practitioners** is among the largest of any software. Moodle is developed and maintained by Moodle Pty LTD and released as open-source software, it is financially supported by over 104

[10] Online learning supplemented with site-based learning (called flexible or blended learning)
[11] Based on a set of criteria including cost, community support, customizability, upgradability, scalability, data security, partner networking, online assessment tools, and integration with other services.

		partnerships worldwide and has an immense base of certified integrators available in most countries around the world.

ANNEX C: Creating the National Application Profile

As more digital content becomes available to those in the vocational sector, organising this content to improve ease of access will become an issue. Tagging content with **metadata**[12] such as certificate level, topic/job, language, type of resource, description, author, and year of publication allows those searching for help in a particular area to quickly identify suitable content. The use of metadata supports advanced search facilities. An example is that used for locating digital content related to general education on the Australian 'Scootle' repository (Fig. 1). However, in order to achieve this level of functionality, every department, development partner, and private sector company producing digital content for the TechVoc sector must be aware of the metadata tags that can be used and agree to incorporate them at the stage of development. A national standard is required. DTE will take the lead on developing this national standard through a series of workshops.

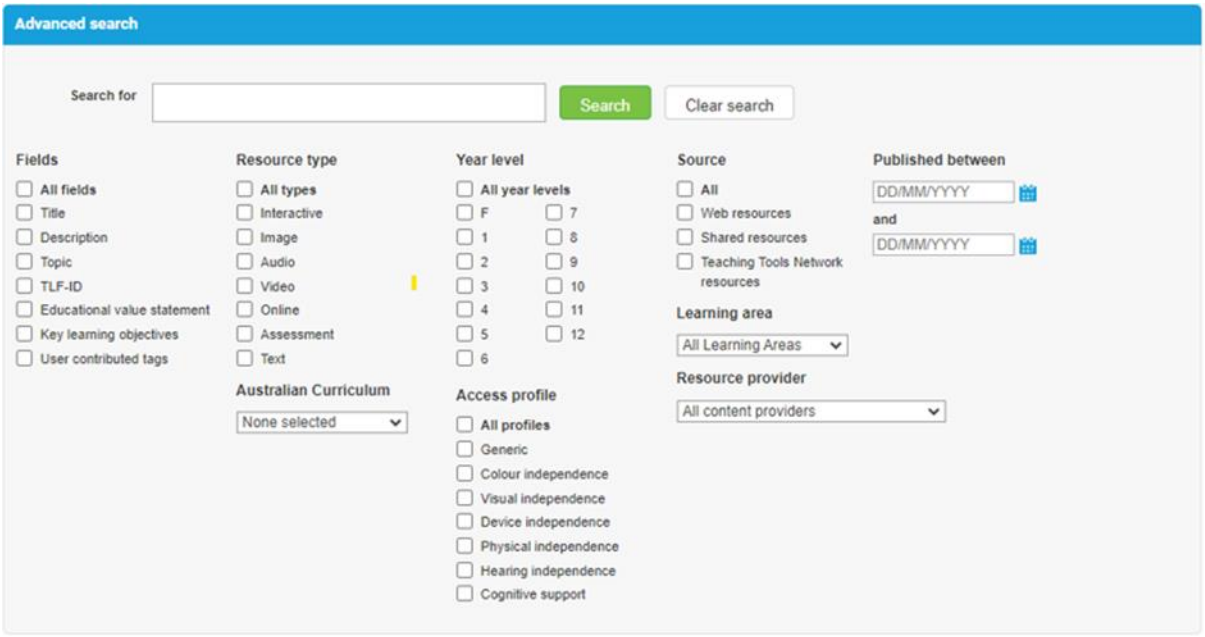


Figure 1: Advanced search facility on the Scootle digital content repository for general education in Australia (https://www.scootle.edu.au/ec/p/home.

Commonly used metadata schema include:

1. The IEEE Standard for Learning Object Metadata (IEEE LOM).
2. The Dublin Core Metadata Element Set (DCMES)
3. The EdNA Metadata Standard (EDNA)

[12] Metadata is data that describes online content in a consistent way using standard terms so that search facilities can be developed that enable a user to quickly locate the digital content they require.

These metadata schema are quite complex and not all elements are useful in any particular context. However, it is possible to draw metadata elements from one or more existing schema, combined and optimized for a particular educational sector in a particular country. This combination of elements is known as a Metadata Application Profile. A Metadata Application Profile has to be permanently maintained online on behalf of the sector in the country that has produced it. In this way, anyone producing new digital content can easily adopt the standard to describe their content so that it can be used across digital content repositories or LMSs. An example is the Australia & New Zealand Metadata Application Profile for general education (ANZ-LOM)[13]. The ANZ-LOM is maintained by Education Services Australia.

DTE will work in partnership with BTEB, DTE, NSDA and development partners on a simplified Application Profile to be maintained on the government cloud.

[13] https://scot.curriculum.edu.au/standards.asp

ANNEX D: Quality Assurance Framework

As a government body, DTE recognises its responsibility to ensure that instructors and students across all TechVoc institutions under its supervision access only quality assured digital resources.

Other countries facing issues where digital content available to learners is of variable quality, has variable levels of accessibility, and where it can be difficult to locate appropriate content, have generated digital content accreditation frameworks. These frameworks take various approaches to assessing quality including:

1. Systems where users of the resource rate its quality and usefulness providing guidelines for others (similar to TripAdvisor or consumer product advisory services). These range from simple 5-star systems to those providing detailed guidelines for user raters to follow.

2. Opensource evaluation systems based on tested rubrics to be used by individuals or expert panels which are set up for the purpose of accrediting digital content.

The Bangladesh Teacher's Portal for general education currently maintained by the Aspire to Innovate (a2i) project is an example of the former. Teachers are free to rate and comment on resources uploaded to the portal by their colleagues. India's National Repository of Open Education Resources has a similar facility. The Commonwealth Educational Media Centre for Asia (CEMCA), New Delhi, set up by the Commonwealth of Learning (COL) to promote the appropriate use of ICTs to serve the education and training needs of Commonwealth Member States of Asia promotes the T.I.P.S. framework which is a guided system for user evaluation of digital resources.

ACHIEVE is a US-based non-profit organisation that has worked with OER Commons[14] to design a framework that guides users to rate digital resources on a scale of 0 to 3 against the following criteria:

1. Degree of alignment to standards
2. Quality of explanation of the subject matter
3. Utility of materials designed to support teaching
4. Quality of assessment
5. Quality of technological interactivity
6. Quality of instructional and practice exercises
7. Opportunities for deeper learning
8. Assurance of accessibility

Similarly, the Learning Object Review Instrument (LORI) was devised by Kansas University in the US to provide users with guidance on rating digital resources against the following criteria:

1. Content Quality
2. Learning Goal Alignment

[14] OER Commons is an NGO that maintains a library of Open Education Resources freely available to educators.

3. Feedback and Adaptation
4. Motivation
5. Presentation Design
6. Interaction Usability
7. Accessibility
8. Standards Compliance

LORI can be used by individuals or a review panel. For review panels, a guideline for collaborative evaluation is provided.

The Multimedia Educational Resource for Learning and Online Teaching Peer Review framework (MERLOT) designed by the Le@rning Federation is intended to be applied by an accreditation panel and includes the facility to provide feedback to developers if there is a recommendation for the resource to be improved.

The Digital Content Accreditation Framework (DiCAF) adopted by the Sri Lankan Ministry of Education (MoE) and the Sri Lankan National Institute of Education (NIE) for accreditation of digital learning resources for general education.[15] A copy of the DiCAF is provided in companion module 'Sri Lanka Digital Content Accreditation Framework.pdf'. A summary of criteria from DiCAF that are relevant to the proposed repository of micro-learning modules is provided in the breakout box below.

CRITERION 1: CONTENT

Learning Objectives: Are learning objectives clearly stated and consistent with the curriculum?

Content: Does the content support achievement of the learning objectives? Is the content sufficiently detailed to enable an instructor with minimal experience to carry out the practical activity (job) but structured so that an experienced instructor is able to navigate directly to material of interest. Are links to foundation/supplementary materials /glossaries/tool illustrations provided to meet the needs of instructors with different backgrounds? Are the resources provided optimal for achievement of the learning objective (e.g. uses video/simulation to support mastery of equipment operation).

Accuracy: Is the content free of errors and/or outdated material? Does it support instructors to follow current best practice in industry?

Copyright: Does the content comply with copyright restrictions as per the Bangladesh Copyright Act 2023. There are a number of tools that can assist the developer to avoid copyright infringements including Google Reverse Image Search or the online Plagiarism Checker by Grammarly. Developers of learning resources are advised to avoid copyright issues by using the 'Usage Rights' tool on Google Image Search to find images with license information, and to source soundtracks through services such as Upbeat or the YouTube Audio Library which maintain a catalogue of copyright-free

[15] The secretary to the MoE, Mr. M.N. Ranasinghe, has granted permission for this framework to be used by DTE as a basis for formulating its own quality accreditation guidelines. Where it is used, credit should be given to the MoE and NIE.

music.

CRITERION 2: INSTRUCTION

Assessment: Does the content include assessment exercises that effectively gauge mastery of the topic and provide designers with analytics data to support its improvement?

CRITERION 3: DESIGN

Motivation: Is the design of the module attractive without unnecessary distractions, interactive and likely to motivate instructors? Is video and audio quality sufficient to support ease of learning. Are videos less than six minutes long or do they employ segmentation of interactive questions to reduce cognitive load (the amount of new information that can be absorbed at one time).

User-friendly design: Is the module interface intuitive? Is the purpose of buttons and hyperlinks clear and do they function as intended without excessive navigation delays? Is contextualized help available where needed.

CRITERION 4: ACCESSIBILITY

Open Licensing: Is the resource open source and capable of being edited to suit local context?

Equitable Access: Is the content responsive,[16] providing consistent user experience across different screen sizes and device capabilities? Does the video provide variable playback speeds and volume controls to suit the needs of different users? Can videos and animations be streamed across commonly available bandwidths or downloaded to commonly available phone storage capacities. Publishing the video/audio file using the H.264 (AVC) codec will achieve better compression rates resulting in smaller file sizes which require less bandwidth and CPU processing power for playback and have a lower impact on battery life. It is also possible to publish content in multiple resolutions and bitrates (SD, HD or 4K) to provide access for users on older or less capable devices or with slower Internet connections.

Accessibility: Does the content conform to Universal Design for Learning (UDL) principles to accommodate users with hearing or visual impairments? This will become more important once content is shared with students but, given that around 8% of Bangladeshi men are colour blind,[17] appropriate colour templates need to be adopted as a priority. Other accessibility measures that may be considered include the provision of audio descriptions of visual elements in video as an optional playback feature and the use of captions or subtitles for the hearing impaired.

CRITERION 5: TECHNOLOGY

Metadata: Has the resource been published with sufficient metadata to enable it to be found easily and quickly using an Advanced Search engine? Standardization of

[16] Responsive digital content adjusts to suit the screen size of devices and their resolution.
[17] Hossain MI, Nahar L, Dad MS, Islam MF, Uddin MM. Prevalence of colour blindness among the first year medical & dental students of Mymensingh Medical College, Bangladesh. Mymensingh Med J. 2013 Oct;22(4):661-4.

metadata requires the adoption/generation of an Application Profile (refer Annex F).

Reliability: Does the content function without technical glitches?

In Sri Lanka, accreditation committees comprising a subject matter expert, an instructional design specialist, a technical specialist skilled in the use of eLearning tools and hardware, a subject teacher working at grade level, and a special education expert apply a 4-point rating system (0-3) to new content proposed to be made available to teachers, students and parents. DTE will set up similar bodies to quality assure new content being produced for its LMS. In the short term, these accreditation committees will include industry representatives (possibly through the ISCs) and instructors from the content area. As instructors become more accustomed to the use of digital resources to aid in their own learning and that of their students, it may be appropriate to introduce user ratings.

ANNEX E: M&E Framework

The Action Plan for development of micro-learning modules commences with a pilot phase from which data will be collected to inform any improvements that need to be made in the full implementation. A period of five months is allowed for this initial evaluation (refer Gantt Charts 2A and 2B).

The **Research Questions** that the proposed pilot or first phase of the staggered rollout seeks to address are:

1. Do instructors feel that the micro-learning modules made available to them through this initiative helped them to master the skills required to conduct jobs in their trade area with their students? If not, what could be done to improve/supplement these resources?
2. Did the provision of the micro-learning modules together with the communications strategy result in instructors conducting more practical activities (jobs) with their students? If yes, what were the most common approaches used – instructor demonstration, individual student workshop activity, workshop activity for student groups? Was digital content used to supplement the instructional process and how?
3. Has the opportunity for more time in the workshop make students more likely to seek dual certification?
4. Is the eLearning centre at the VTTI producing content at the required level of quality to be accredited by expert committees using the DTE Quality Assurance Standard?
5. Is the eLearning centre producing content at a rate that supports ongoing curriculum updates and equipment procurement?

The **Theory of Change** (TOC) for the intervention assumes a positive response to each of the research questions and is represented in Fig. 1.

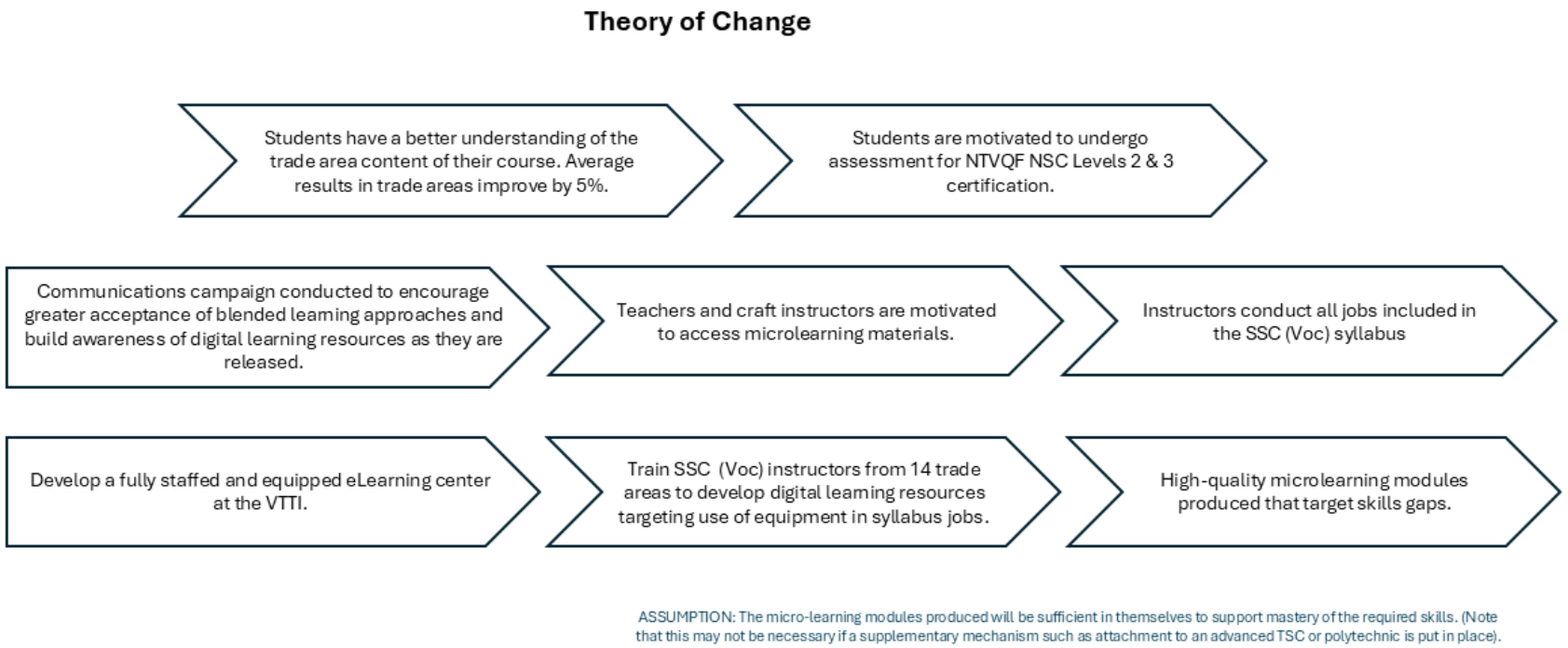


Figure 3: eLearning in Vocational Education Theory of Change

As a **first step**, a Knowledge, Attitude and Practices (KAP) survey will be conducted before any modules are developed to discover the attitudes of instructors to the use of digital resources and their common practice in covering the jobs included in the SSC (Voc) syllabus with a focus on those jobs identified as priorities for support (Refer Gantt Chart 1). KAP surveys are commonly used to identify what people know, believe, and do about a topic, and to reveal potential barriers to behaviour change. This helps to understand why instructors adopt the micro-learning modules or why they don't. Based on this level of understanding, the communications strategy to be rolled out as part of the action plan can preempt negative perceptions and try to change them before they have a negative impact on the work being done.

Information to be sought through the KAP survey includes:

- Respondent details: Name; Age; Gender; TSC currently employed at; years of experience teaching in TSCs/Polytechnics.
- Whether the respondent already has a CBT&A certificate level 4 or 5.
- Digital devices owned by the respondent and the professional activities these devices are used for?
- Jobs currently conducted with students and approach used.
- Reasons for not conducting particular jobs (if applicable).
- Support available for conducting jobs with students – is a session conducted by the instructor working with the craft instructor or by one person. Reasons for this.
- Self-learning engaged in by the respondent over the previous academic year (if any) with a focus on self-learning related to the jobs identified as priorities for module support.
- Previous training conducted by DTE relevant to these jobs.
- Respondent opinion of the adequacy of this training.
- Learning resources already identified by respondents relevant to these jobs (if any). Type of learning resource (e.g. digital, paper-based, support from colleague or industry representative).
- Respondent personal learning preference (written material, talk or training session by expert, digital content (video, animation, simulation).
- Opinion on student preferred learning modality (textbook, video, animation, simulation, hands-on)?

The monitoring and evaluation approach for the pilot will be largely qualitative except for website analytics and will include:

1. KIIs with the trainers for the micro-learning module development team to be validated through observation of the modules being produced by members of the group.
2. Analytics for postings on Facebook (impressions,[18] reach,[19] engagement,[20] post reactions,[21] and demographics of those who interact with the post) by the communications team. Analytics for postings on LinkedIn including reactions,

[18] The total number of times the post was viewed
[19] The number of unique people who viewed the post
[20] The number of interactions with the post including likes, comments and shares
[21] Detailed data about how people interacted with the post including type of reaction and how users access the concerned page.

comments and reposts. Analytics for newsletters circulated through email including open rate, click-through rate, bounce rate, delivery rate, unsubscribe rate, and read rate.

3. Analytics from the LMS once microlearning modules are moved onto the production LMS including the number of times a resource is accessed, microlearning completion rates, time to complete, and quiz scores.

At the end of the pilot phase, a review will be conducted to assess progress, get detailed feedback on the perceived quality and usefulness of the micro-learning modules made available, and allow for adjustments to be made in planning subsequent phases. A key tool to be used in this evaluation will be Focus Group Discussions (FGDs) with instructors and students at the TSCs.

Based on empirical research by Wutich et al[22]. (2024), theme saturation can generally be reached through four focus group discussions (FGD) while meaning saturation requires around eight focus groups. Theme saturation describes the situation where sufficient interviews / FGDs have been conducted such that nothing new is discovered through any additional interviews / FGDs. Meaning saturation describes the situation where conducting further interviews / FGDs does not add to the understanding already gained of the context under investigation. Since the purpose of the pilot is to discover whether the provision of appropriate digital resources can support and encourage instructors to conduct jobs for which they currently lack expertise, the evaluation will aim for meaning saturation.

Since the intervention targets the fourteen trade areas included in the SSC (Voc) syllabus, it is recommended that three TSCs conducting training in each trade area participate in the evaluation. The sample should include newly established TSC and established TSCs. As each TSC conducts courses in multiple trade areas, selection of TSCs to maximise overlap will ensure that the number of participating TSC should be manageable for troubleshooting, communications, and evaluations. At the level of trainer, FGDs will involve 6-8 instructors and/or craft instructors with at least two FGDs conducted per trade area.

To capture differences resulting from anticipated influencing factors, it is recommended that FGDs aim to include:

- Newly recruited instructors.
- Experienced instructors at TSCs without an NSC in CBT&A
- Experienced instructors at TSCs with an NSC in CBT&A
- Instructors with a positive attitude to EdTech and those who have reservations about it (as identified by the KAP survey)
- Instructors conducting targeted jobs and those who indicated that they are unable to conduct those jobs.

Focus groups should address the research questions described above.

[22] Wutich, A., Beresford, M., Bernard, H.R. (2024), Sample Sizes for 10 types of Qualitative Data Analysis: An Integrative Review, Empirical Guidance and Next Steps, International Journal of Qualitative Methods, V. 23: 1-14.

ANNEX F: Terms of Reference for Participating Instructors

Terms of Reference (TOR) for Engaging Instructors from TSC for Content Development of SSC Vocational Courses

The primary objectives of this engagement are:

A. To identify and recruit skilled instructors from TSC (technical school and colleges) with the capability to develop high-quality e-learning content.

B. To train selected instructors in advanced digital content creation techniques to enhance vocational education.

C. To develop and implement structured e-learning modules that effectively translate practical work into digital formats.

D. To build the capacity of TSCs by ensuring knowledge transfer through trained instructors mentoring their peers.

E. To establish a sustainable model for continuous e-learning content development within TSCs.

Scope of Work

The engaged instructors will be responsible for the following tasks:

1. Identifying the key practical components of their respective vocational courses that require digitization.
2. Creating instructional content, including videos, infographics, and interactive modules.
3. Undergoing advanced training at VTTI for two months to enhance e-learning content development skills.
4. Developing one complete e-learning module within one month at VTTI under expert supervision.
5. Returning to their respective TSCs and creating two or three additional modules within the following two months.
6. Training fellow instructors at their TSCs over the next six months to ensure knowledge transfer and sustainability of digital education initiatives.
7. Ensuring that all developed content aligns with vocational education standards and enhances practical learning outcomes.

Selection Criteria & Practical Work Identification

To ensure the effective creation of e-learning content, selected instructors from TSC must meet the following criteria before their engagement in the project:

- Possess basic skills in digital content creation, including familiarity with tools such as Camtasia, Canva, Genial.ly, OBS Studio, and Photoshop.

- Have a clear understanding of their vocational subject's practical components and how they can be translated into e-learning modules.
- Be experienced in structuring lessons and identifying key areas of practical work that need digitization.
- Demonstrate a willingness to participate in advanced training and mentor fellow instructors in their respective TSCs.

Advanced Training & Module Development at VTTI

Following selection, the instructors will undergo an intensive two-month advanced training at VTTI under the guidance of professional e-learning experts. This training will focus on:

- Enhancing their proficiency in digital content creation.
- Mastering advanced video editing, interactive course design, and multimedia content development.
- Developing one complete e-learning module within one month under expert supervision.

After completing their training at VTTI, instructors will return to their respective TSCs and, within the next two months, create two or three additional e-learning modules, ensuring a comprehensive approach to digitizing practical vocational work.

Knowledge Transfer & Instructors Training at Respective TSCs

In the final phase, the trained instructors will act as mentors to other instructors at their respective TSCs. Over the next six months, they will:

- Train fellow instructors in e-learning content development, ensuring knowledge transfer and sustainability of digital education initiatives.
- Supervise the creation of additional modules by newly trained instructors.
- Ensure consistent quality and standardization of e-learning materials.

This structured approach will ensure that all SSC vocational courses are systematically digitized, enhancing accessibility and effectiveness in vocational training.

ANNEX G: Costings

Digital Equipment	Description	**Units**	**BDT unit price**	**Qty**	**Total BDT**	
Video editing computers and development server	AIO form factor 27" FHD Touchscreen, Core 7-150U, NVIDIA GeForce MX570A, 64 GB RAM, 2 TB SSD, Wi-Fi 6E, Win 11 Pro, with Office Lifetime License & Designed Mouse	Computer	189000	3	567000	
Computer monitor	28 SS IPS Panel Size 3840 x 2160 (UHD) cable Accessories	Monitor	68000	3	204000	
Keyboard/mouse	wired keyboard/mouse	Set	900	3	2700	
Laptop computers	F Processor: 13th Gen Core i3-1315U RAM & Storage: 8GB DDR4, 512GB M.2 NVMe PCIe 3.0 SSD Graphics: Intel UHD Graphics Display: 15.6-inch Full HD 2 Years Official Warranty	Laptop	67000	33	2211000	
RAM memory for laptops	upgrade laptop RAM to 16gb	Ram	1400	33	46200	
Wifi router	AC1200 Wireless MU-MIMO Gigabit 802.11ac Wave2 WiFi–867 Mbps on the 5 GHz bandand400 Mbps on the 2.4 GHz band† 4 external antennas	Wifi	3200	6	19200	
Large screen smart TV	LCD/LED lit Panel Size: 75 inch (189 cm) 3840 x 2160 (4K) Operating System: Google TV App Support: Google Play Store, Screen Mirroring, Voice Command: Google Assistant,	TV	130000	3	390000	
3D scanner	Scan Mode- Structed Light Scan, Point Distance- 0.1 mm ~ 3 mm, Light Source- Infrared VCSEL structured light, Working Distance - Effective Working Distance: 160mm-1400mm Optimal Working Distance: 400mm, Depth of Field- 160-1400mm, Maximum FOV- 434mm*379mm (under optimal work distance), Scan Speed- 980,000points/s, up to 14FPS, Align Modes- Feature Alignment, Hybrid Alignment, Texture Alignment, Global Markers, Texture Scan, Interface- USB2.0 or above, Outdoor Scanning, Output Formats- OBJ; STL; PLY; P3; 3MF, Scanner Size - 220mm*46mm*55mm, Body Weight- 500g	3d scanner	125000	4	500000	

Video camera	Camera sensor -Type 1/1.9 (6.3 x 5.5mm) CMOS sensor with native 8:7 aspect ratio, Video -5.3K at up to 60p, 4K at up to 120p, 8x slow-mo (2.7K at 240p), 'HDR' video mode, Vertical video support (9:16 ratio),10-bit video, and new GP-Log video option, 24.7MP still photos from video Photos - 27MP photos, including Raw + JPEG, Ultra-wide 177° field of view with optional new Max Lens Mod 2.0, image stabilization Wireless audio support for Apple AirPods and other Bluetooth headphones Waterproof up to 10m (33ft) Standard 1/4-20 mounting thread on the bottom Volta Battery Grip, Media Mod, Light Mod, Enduro Battery	Camera	79500	6	477000	
Micro SD card	MicroSD card with a V30 and Class A2 rating, 128gb size	Sdcard	1100	12	13200	
Professional Camera Tripod	Material: Magnesium Aluminum Alloy Net Weight: 4.46lbs(include ball head) Sections:4, Head Type: Ball Head Features: Foldable, Transverse center column, monopod Head Material: Die-casting metal, Locking type: Locking knob Locking material: Magnesium aluminum alloy Max Height: 75.6”, Min Height: 14.76”, Load Capacity: 8KG	Tripod	13000	6	78000	
Video light kit	GVM RGB LED Panel Video Light, Photography Lighting with APP Control, Video Lighting Kit for YouTube Studio, Gaming, Streaming Lighting Type: Continuous Output Lighting Color Temperature Version: RGB Version Brightness Adjustment Range:0 - 100% Lighting Type: Continuous Output Lighting Color Temperature Version: RGB Version	Lighting	29000	6	174000	
Microphone kit	Adjustable Height: 13"-20"/32cm-52cm, Boom Length: 10"/25cm Microphone Pop Filter: Protect your microphone from surplus spit caused by over eager performers. Spider Shock Mount: Designed to absorb vibrations from the floor and air, allowing a cleaner reproduction of sound.	Microphone	26000	6	156000	
Backdrop screens	Green Screen 5.6 x 9 feet Backdrop Background For Photography	Screen	900	6	5400	

Backdrop stands kit	Photography Photo Studio T-Shape Backdrop Background Stand Frame Support System Kit For Video Chroma Key Green Screen With Stand	Stands	10000	6	60000	
Inkjet printer	Printer Type - Single Function Color INK Printer Print Speed (Black) - 8ipm(ISO) (A4),3ipm(ISO) (A3), 22ppm(Draft) (A4) Print Speed (Color) - 8ipm(ISO) (A4),3ipm(ISO) (A3), 22ppm(Draft) (A4) Print Resolution - 5760 x 1440 dpi(pixel), Photo Printing - Yes Paper Size Minimum - A6, Paper Size Max. - A3 Connectivity - USB, WiFi, Networking - Wireless LAN IEEE802.11a/b/g/n, Wi-Fi Direct Mobile Device Printing – Yes, Ink Tank - Yes	Printer	100000	2	200000	
Multifunction laser printer	Laser jet printer A3 Print, Copy, Scan Functions Print and Copy Speed 22 ppm (Black)Automatic Duplex Printing Processor speed 600 MHz Print Resolution (1200x 1200) dpi Connectivity USB 2.0 Ethernet1 Year Official Branded Warranty	Printer	87000	2	174000	
Editing software	i.e. Filmora, Camtasia and a range of free solutions with e-content development software etc.	Software	2000000	1	2000000	
					7,277,700	
eLearning center at VTTI (sound proof room and office space)	Description	**units**	**BDT unit price**	**qty**	**total BDT**	
Soundproofing foam	Complete soundproofing	48sm	3900	20	78000	
Sound proofing labor and other improvements	Labor and other improvement	lump sum	200000	1	200000	
Office / classroom furniture	Furniture		300000	1	300000	
Lighting, wall outlets, cabling etc...	Electrical upgrades	outlets	200000	1	200000	
Inverter type wall mounted air conditioner	1.5 ton wall mounted split	AC	73000	6	438000	
					1,216,000	

Activities		**Units**	**BDT unit price**	**Qty**	**Total BDT**	
Multimedia trainers	Intensive training at VTTI (must validate all modules developed by TSC instructors)	hrs	2,000	2240	4,480,000	
Content Accreditation Framework	Workshops	workshop	64000	2	128,000	
Application Profile Workshops	Workshops	workshop	64000	3	192,000	
Management costs	Ceremonies, refreshments, materials, consumables, basic maintenance of equipment etc...	batch	1000000	7	7,000,000	
Configure LMS	Initial setup	lump sum	128,000	1	128,000	
Ongoing maintenance	Ongoing maintenance	day	25600	25	640,000	
Hosting on Government Cloud	Hosting costs for the pilot duration	year	76800	3	230,400	
					12,798,400	

TSC instructors (28 per batch 7 batches over 3 years)		**Units**	**BDT unit price**	**Units**	**Total BDT**	
Travel	Round trip	RT	5000	196	980,000	
Honorarium	40 days at VTTI (1 module to be submitted)	days	1000	7840	7,840,000	
Honorarium	60 days home institute work (2-3 modules to be submitted)	days	300	11760	3,528,000	
Per diem	60 days	days	1000	11760	11,760,000	
					24,108,000	

External experts		**Units**	**BDT unit price**	**Mnt**	**Total BDT**	
Team Leader	TVET and M&E Specialist	month	500000	15	7,500,000	
Media and Communications expert	Social Media Management	month	300000	6	1,800,000	
					9,300,000	
		GRAND TOTAL			BDT 54,700,100.00	
		10% cont			5470010	
		Including contingency			**BDT 60,170,110.00**	

Notes						
	Accuracy of Estimates: Some figures (e.g., consultant fees, hosting costs) are based on industry averages and might need confirmation.					
	Additional Costs: Consider adding a contingency budget (e.g., 10% of the total) for unforeseen expenses.					
	Customization: Verify specific requirements for equipment and activities to ensure alignment with program goals.					
	taxes, shipping, handling and installation are not included					
Notes	VAT Tax are not included with the above budget					

The costings below represent indicative distribution across the 3 years of the proposed project. These tables will help to better assess the levels of funding needed based on a yearly projected cost which can be appropriated in government funding models.

Digital Equipment	**total BDT**	**yr 1**	**yr 2**	**yr 3**	**yr 1**	**yr 2**	**yr 3**
Video editing computer	567000	100%			567000	0	0
computer monitor	204000	100%			204000	0	0
keyboard/mouse	2700	100%			2700	0	0
Laptop computers	2211000	100%			2211000	0	0
RAM memory for laptops	46200	100%			46200	0	0
Wifi router	19200	100%			19200	0	0
Large screen smart TV	390000	100%			390000	0	0
3D scanner	500000	100%			500000	0	0
Video camera	477000	100%			477000	0	0
Micro SD card	13200	100%			13200		
Professional Camera Tripod	78000	100%			78000	0	0
video light kit	174000	100%			174000	0	0
Microphone kit	156000	100%			156000	0	0
backdrop screens	5400	100%			5400	0	0
backdrop stands kit	60000	100%			60000	0	0
inkjet printer	200000	100%			200000	0	0
multifunction laser printer	174000	100%			174000	0	0
Editing software	2000000	100%			2000000	0	0
	7277700				**7277700**		

eLearning center at VTTI (sound proof room and office space)	**total BDT**						
soundproofing foam	78000	100%			78000	0	0
sound proofing labor and other improvements	200000	100%			200000	0	0
office/classroom furniture	300000	100%			300000	0	0
lighting, wall outlets, cabling etc...	200000	100%			200000	0	0
inverter type wall mounted air conditioner	438000	100%			438000	0	0
	1216000				**1216000**		

Activities	**Total BDT**						
Multimedia trainers	4,480,000	29%	43%	29%	1280000	1920000	1280000
Content Accreditation Framework	128,000	75%	25%		96000	32000	0
Application Profile Workshops	192,000	75%	25%		144000	48000	0
management costs	7,000,000	29%	43%	29%	2,000,000	3,000,000	2,000,000
Configure LMS	128,000	29%	43%	29%	36,571	54,857	36,571

Ongoing maintenance	640,000	29%	43%	29%	182,857	274,286	182,857
Hosting on Government Cloud	230,400	29%	43%	29%	65,829	98,743	65,829
	12,798,400				**3,805,257**	**5,427,886**	**3,565,257**

TSC instructors (84 per year)	**Total BDT**						
travel	980,000	29%	43%	29%	280,000	420,000	280,000
honorarium at VTTI	7,840,000	29%	43%	29%	2,240,000	3,360,000	2,240,000
honorarium at home Institute	3,528,000	29%	43%	29%	1,008,000	1,512,000	1,008,000
per diem	11,760,000	29%	43%	29%	3,360,000	5,040,000	3,360,000
	24,108,000				**6,888,000**	**10,332,000**	**6,888,000**

External experts	**Total BDT**						
Team Leader	7,500,000	29%	43%	29%	2,142,857	3,214,286	2142857.143
Media and Communications expert	1,800,000	29%	43%	29%	514,286	771,429	514285.7143
	9,300,000						
					2657143	**3985714**	**2657142.9**

BDT totals	*54700100*				*21844100*	*19745600*	*13110400*
10% contingency	5470010						
Grand total	**60170110**						

ANNEX H: Per-Batch and Cumulative Training Cost (7 Batches)

The Vocational Teachers Training Institute (VTTI) in Bogura, under the Directorate of Technical Education (DTE), serves as the central hub for training TSC instructors. Each instructor will participate in a 2-month intensive on-site program focused on developing digital modules for the eLearning Management System (LMS). The training will be conducted in seven batches, with 28 instructors in each batch. Every batch will produce 84 modules across 14 SSC vocational trades except for the final batch which will produce 71 modules. The sessions will be facilitated by four IT technical experts, specializing in instructional design, graphic design, animation, video production, and potentially 3D content development. The training program will be organized by VTTI, with Technical School & College Instructors nominated by DTE. Each batch will include an opening and closing ceremony to ensure proper orientation and formal recognition of completion. The financial details are outlined in the Table below (Annex H), with a per-batch cost of BDT 4,440,000 and a total of BDT 31,080,000 for all batches. Items listed under Serial Nos. 3–10 are categorized as management costs, fixed at BDT 1,000,000 per batch. Additional costs are detailed in Serial Nos. 1, 2, 11, and 12.

		Cost per Batch for 2-Month Training Program					
Serial No	**Description**	**Unit**	**BDT unit price**	**Hours**	**Days**	**No of Instructors**	**Total Taka**
1	Honorarium for TSC Instructors	Day	1000		40	28	1120000
2	Multimedia trainer Honorarium	Hour	2000	8	40	1	640000
3	Course Coordinator Honorarium	Day	600		40	1	24000
4	Support Staff Honorarium	Day	300		40	3	36000
5	Guests & Organiser Honorarium	Batch	2500			5	12500
6	Participants refreshment	Day	130		40	28	145600
7	Lunch	Day	500		40	28	560000
8	Training Materials for Instructors	Person	1500			28	42000
9	Banner (Opening & Closing)	Course	4000				4000
10	Miscellaneous						35900
11	Round Trip for TSC Instructors		5000			28	140000
12	Per diem for TSC Instructors		1000		60	28	1680000
	Total for One Batch						BDT 4,440,000
	Total 7 Batch Training cost						**BDT 31,080,000.00**

Note: Items listed in Serial Nos. 3–10 are categorized as management costs. The total management cost per batch will be BDT 1,000,000.00. Guest honorarium may vary depending on their designation. Miscellaneous expenses may include communication, stationery, photocopying, paper, and similar items