COLOMBO PLAN STAFF COLLEGE

NAVIGATING THE FUTURE OF TVET

Addressing Challenges and Fostering Positive Change

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Navigating the Future of TVET Addressing Challenges and Fostering Positive Change

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FOREWORD

Amidst the backdrop of an ever-evolving global landscape characterized by technological advancements, demographic shifts, and environmental imperatives, the impetus for the program on "Navigating the Future of TVET" emerges. Recognizing the transformative impact of the Fourth Industrial Revolution (4IR, or Industry 4.0) on industries, CPSC acknowledges the pressing need for a skilled workforce proficient in digital literacy, critical thinking, and adaptability. Moreover, the profound demographic shifts experienced by CPSC member countries, marked by a significant youth bulge, underscore the program's indispensability. This demographic reality underscores the need for tailored TVET programs that empower the younger generation and channel their potential toward productive and meaningful engagement within the workforce. Thus, the program envisions a collaborative framework between member countries, cultivating an inclusive and diverse TVET ecosystem that cultivates talent and harnesses the demographic dividend.

In summation, "Navigating the Future of TVET: Addressing Challenges and Fostering Positive Change" epitomizes CPSC's visionary pursuit to shape the trajectory of TVET within the Asia-Pacific region. By confronting evolving challenges and embracing emerging prospects, CPSC seeks to arm future generations with the skills, knowledge, quality assurance and values requisite to navigate an ever-fluctuating world.

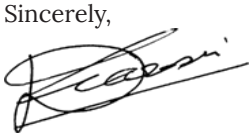
This book is a product of the efforts brought upon by the participating member country representatives of CPSC during the implementation of its Regional Program on Navigating the Future of TVET: Addressing Challenges and Fostering Positive Change held on December 4-7, 2023 in Manila, Philippines as well as the representing TVET institutions during the 4th Association of APACC Accreditees (AAA) Meeting held on December 5, 2023 in the same venue.

The compiled papers from this publication features the country paper presentations delivered by the participants during the conduct of the Regional Program and the AAA Meeting. The first chapter focuses on member government policies and initiatives to enhance the quality of TVET in Asia Pacific. It contains papers from Bangladesh, Bhutan, Fiji, India, Malaysia, Mongolia, Myanmar, Nepal, Sri Lanka and Thailand. The second chapter, on the other hand, discusses some of the best practices, initiatives, and programs adopted by selected APACC-accredited TVET institutions from Malaysia, Mongolia, and the Philippines. Both chapters offer key recommendations and ways forward for TVET enhancement across Asia Pacific.

This book lays the foundation for sustainable TVET implementation in the post-pandemic environment. Aimed as a platform to convene TVET scholars around the world, disseminate TVET information, and share discussions on the various practices, standards, and frameworks implemented by different countries, this compilation aspires to bring forth CPSC's mandate and advocacy to promote and sustain quality TVET in the region, and strengthen its role as a center of TVET information in the region through the development of timely and relevant academic scholarship.

To our readers, please feel free to browse the succeeding pages. I hope that the knowledge that you will gain from this book will be useful in your professional and personal development in the future.

Sincerely,



Prof. G.L.D. Wickramasinghe
Director General

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BEST PRACTICES IN ENHANCING QUALITY AND RELEVANCE OF TVET SYSTEMS IN ASIA PACIFIC

Best Practices in Enhancing Quality and Relevance of TVET System in Bangladesh

AHM Jahangir
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Introduction

Bangladesh has made significant strides in the implementation of Sustainable Development Goals (SDGs) related to Technical and Vocational Education and Training (TVET). With a focus on inclusive and sustainable economic growth, the Government of Bangladesh has undertaken comprehensive initiatives to enhance the quality and accessibility of TVET.

Bangladesh recognizes the pivotal role of TVET in fostering economic development, reducing unemployment, and achieving SDGs. SDG Goal 4 emphasizes the need for inclusive and equitable quality education, including TVET, to promote lifelong learning opportunities for all. In alignment with this, Bangladesh has taken significant steps to integrate TVET into its national development agenda.

Key Initiatives for Sustainable TVET in Bangladesh

National Education Policy (NEP) and National Skills Development Policy (NSDP)

The Government expressed its commitment to improve the TVET system through the implementation of the National Education policy-2010 and the National Skills Development Policy-2011. These policies envisaged the expansion, diversification, extension and development of technical and vocational education programs. The NSDP provides a comprehensive framework for TVET development, emphasizing industry collaboration, competency-based training, and the recognition of prior learning.

National Technical and Vocational Qualifications Framework (NTVQF)

Under the National Skills Development Policy, National Technical and Vocational Qualifications Framework (NTVQF) has been designed to improve the quality and consistency of nationally recognized qualifications. The NTVQF is an initiative of the TVET Reform Project, implemented by the Government of Bangladesh with the support of the ILO and funded by the European Union. The project is working towards reforming technical and vocational education and training in Bangladesh.

Skills for Employment Investment Program (SEIP)

Skills for Employment Investment Program (SEIP) under the Ministry of Finance (funded by ADB and the government), focuses on enhancing the employability of the youth through industry-driven training programs. It establishes partnerships between training providers and industries to develop demand-driven curricula and impart vocational training with globally recognized skills certifications where appropriate.

Female Stipend Program

Recognizing the gender gap in TVET participation, the Female Stipend Program offers financial incentives to women pursuing technical education. This initiative has significantly increased female enrollment in traditionally male-dominated fields.

Concerned Institutions for Sustainable TVET

Public TVET in Bangladesh is delivered by institutions belonging to 22 ministries. Directorate of Technical Education (DTE) under the Ministry of Education, Bureau of Manpower, Employment and Training (BMET) under the Ministry of Expatriates' Welfare and Overseas Employment, Department of Women Affairs under the Ministry of Women and Children Affairs and Department of Youth Development (DYD) under the Ministry of Youth and Sports deliver the major portion of skills training through Training Centers all over the country. The Bangladesh Technical Education Board (BTEB) regulates admission, curricula and testing, ensuring the quality assurance of the skill training system through accreditation of courses, TVET certification and registration of training providers. The programs include time-bound, institution-based, and graded training with formal certification. The courses are offered by Engineering Colleges, Polytechnic Institutes, Technical School and Colleges (TSCs), Technical Teachers' Training College (TTTC), Vocational Teachers' Training Institute (VTTI), Business Management Colleges and other technical and vocational institutes. In 2019, the government formed the National Skills Development Authority (NSDA) which is responsible for ensuring coordination and developing policies to build a skilled human resource and approving all skill development projects of the government.

A large number of private institutions deliver training courses commercially. Hundreds of large and small NGOs offer skills training through short courses. Industry bodies provide training as per the needs of relevant enterprises through on-the-job training. Employers prefer recruiting apprentices and helpers who develop skills through work practice rather than formal training. A few recruiting agencies for the overseas employment market are operating training institutes to cater to the needs of the Foreign Employers.

Project Support Towards Development of TVET

A number of investment projects are aligned with Bangladesh's country strategies to support skill development. Among these are the ILO-TVET Reform Project funded by European Union, Skill Development Project (SDP) by GoB, ADB and SDC, Skill and Training Enhancement Project (STEP) funded by the World Bank and Canada, Bangladesh Skill for Employment and Productivity (B-SEP) funded by Canada, Skills for Employment Investment Program (SEIP) funded by ADB and ProGRESS which is funded by The Ministry

of Education and the ILO Bangladesh which are remarkable. The objective of these projects is to put in place a demand-led, flexible and responsive TVET system that would deliver skills training to meet the needs of the labor market and to strengthen selected public and private training institutions to improve training quality, and the employability of trainees, including those from disadvantaged socio-economic backgrounds emphasizing and encouraging female participation in TVET.

Skill Training and Overseas Employment

As the local employment is limited in Bangladesh, and there is potential opportunity for the skilled workers in different countries, TVET can play a vital role in producing high quality workforce for the overseas labor market. About 51% of the total Bangladeshi workforce in various countries, particularly in the Middle Eastern countries and Malaysia, are unskilled or less-skilled workers. They have very little to no educational background and have not received any kind of training. There has been a noticeable mismatch in supply and demand of manpower resources across the countries and regions in different categories of occupations and skills. Demand for skilled manpower in different trades is increasing in the world employment market. The benefits can be derived only if a skilled labor force is available to face competitiveness in the world market. Bangladesh is seeking to enhance the skills of the labor force by providing them with the appropriate education and training to achieve further success in the global employment market through achieving the international accreditation of TVET.

Status of SDG Implementation in Line with TVET

Goal 4: Quality Education

One sub-goal under SDG-4 is about ensuring equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university. Bangladesh has made remarkable progress in increasing access to education at all levels. The enrolment rate in TVET increased from 1% in 2009 to 17.25% in 2022 and the government plans to increase the number of students to 30% by 2030 and 50% by 2040. The number of private sector institutions is increasing, especially in the ICT sector in response to the opening of opportunities for work abroad as skilled and semi-skilled workers in various trades. TVET is now incorporated into the national curriculum, providing students with a diverse range of skills and competencies. Government-sponsored initiatives, such as the National Technical and Vocational Qualifications Framework (NTVQF), aim to standardize TVET qualifications, ensuring quality and relevance.

Goal 8: Decent Work and Economic Growth

TVET plays a crucial role in achieving Goal 8 by providing individuals with skills aligned with market demands. The government's focus on entrepreneurship development through TVET programs contributes to job creation and economic growth. Initiatives like the Skills for Employment Investment Program (SEIP) foster collaboration between industries and training providers.

Goal 10: Reduced Inequalities

To address inequalities, Bangladesh has implemented targeted TVET programs, particularly in rural and marginalized areas. The Female Stipend Program encourages women to enroll in TVET courses, promoting gender equality. Enrolment of female students has increased from 10% in 2009 to 20% in 2020, and their current enrolment rate is 26.71%. However, challenges remain in reaching remote areas, necessitating innovative approaches to inclusivity.

Status of SDG Implementation in Line with TVET

Infrastructure and Resource Constraints

While strides have been made, challenges persist in terms of infrastructure and resource availability. Many TVET institutions lack modern equipment and qualified instructors, hindering the delivery of high-quality training.

Industry Collaboration

Ensuring the relevance of TVET programs requires strong collaboration with industries. While initiatives like SEIP have made progress, fostering sustained partnerships remains a challenge. Industries need stronger incentives to actively participate in curriculum development and training programs.

Inclusivity and Accessibility

Despite efforts to reduce inequalities, reaching marginalized populations in remote areas remains a challenge. Limited infrastructure, socio-cultural barriers, and insufficient awareness hinder the participation of certain groups in TVET programs.

Recommendations for Sustainable TVET Development

Strengthening Infrastructure and Resources

Prioritizing investments in modernizing infrastructure and providing adequate resources to TVET institutions is essential. This includes updating equipment, expanding facilities, and ensuring a sufficient number of qualified instructors.

Enhancing Industry Collaboration

Incentivizing industries to actively engage in TVET programs is crucial. Government incentives, tax breaks, and recognition for companies involved in skill development initiatives can encourage sustained collaboration.

Promoting Inclusivity

Developing targeted awareness campaigns and tailored programs for marginalized communities can enhance inclusivity. Mobile training units and online platforms can be utilized to reach remote areas where establishing physical infrastructure is challenging.

Conclusion

Bangladesh's commitment to SDG implementation related to TVET is evident in the progress made over the years. The government's strategic initiatives have laid a solid foundation for sustainable TVET development. Challenges persist, but with targeted interventions and collaborative efforts, Bangladesh can continue on its path towards inclusive and quality TVET, contributing to the achievement of broader sustainable development goals.

Enhancing Quality and Relevance of TVET System in Bhutan through the Skills Development Program (SDP)

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Introduction

The COVID-19 pandemic has taken a significant toll on the economy locally and globally. In addition to the threat to public health, the economic and social disruption threatens the long-term livelihoods and well-being of people. The pandemic has caused disruption on the economic growth with severe impact on all developmental activities. The impact is ultimately on the workforce as workers are being laid-off and fresh university graduates and out of school youths entering the labour market remain unemployed with no visible sign of economic recovery.

Though Bhutan's economy has been adversely impacted, Bhutanese are comparatively fortunate to have been shielded from some of the most devastating consequences with strong interventions and leadership from His Majesty the King and the Government.

As part of the overall economic contingency plan to respond to challenges posed by the pandemic and to enhance the country's economic resilience post-pandemic situation, the Royal Government of Bhutan has devised a range of plans and strategies. One among many strategies is the program of enhancing the resilience of the Bhutanese workforce through provision of high quality training attuned to the needs of the emerging economy.

Therefore, the Skills Development Plan (SDP) has been designed with the intent to mitigate the socio-economic impact caused by the pandemic and ensure an effective, inclusive and sustainable recovery. The plan seeks to address the shortage of skilled workforce in different economic sectors through provision of relevant and high-quality training aligned to the needs of the country.

The SDP targets individuals who are either jobseekers, or those affected by the current pandemic and economic downturn. The plan seeks to mitigate the impacts of the pandemic, by supporting individuals through acquisition of relevant skills so that they are in a position to participate in developmental activities during the post pandemic period.

Objectives

The objectives of SDP are to:

- Provide relevant and quality skills training geared towards enhancing skills and competencies of beneficiaries;
- Provide diverse and easy access to skills training, to promote economic activities and entrepreneurship in the immediate time frame through supply of skilled and competent workforce; and
- Address aspiration and potential of the target group to tap current and emerging economic opportunities.

Sector Classification

Agriculture	Business & Services	Computing & IT
Construction	Creative Art & Design	Electrical, Electronic & Mechanical
Manufacturing	Power and Renewable Energy	Tourism & Hospitality

Training Areas

A total of about 108 different training areas in the nine priority sectors are identified for implementation under the SDP. The skill areas are identified based on:

- Skill areas listed in the 12th FYP HRD Master plan, the National Workforce Plan, TVET Curriculum Framework-2019 and the draft 21st Century Economic Roadmap
- Current labour market needs based on local and global labour market dynamics
- Interest of jobseekers
- Prospect of self-employment opportunities
- Address aspiration and potential of the target group to tap current and emerging economic opportunities

The identified skill areas will provide individuals with competency for employment in different industries/firms or take up self-employment opportunities. During the course of the implementation, the MoLHR can periodically review the training areas to incorporate new training areas into the plan.

All courses under the SDP will be complemented by two weeks entrepreneurship learning to foster self-employment and entrepreneurship post-skilling.

Agriculture-9	Agro-based Food Processing and Production Dairy product development Farm machinery Technology (post-harvest) Floriculture Food packaging Mushroom Production Poultry Production Power Tiller repair and maintenance Vegetable Production
Business and Services-10	e-Waste Management Early Childhood Care and Development Gym trainer Hair and Beauty Therapy Home Care Nail Art Old age Care Retail and Online Business Solid Waste Management Sowarigpa and Wellness
Computing and IT-24	3D printing Animation 2D Animation 3D Block chain Developer Business Information System Development Cloud Computing Cyber and Network Security Data mining Digital Cable TV Technology Digital marketing Fibre Optic Technology Foundational Artificial Intelligence (AI) Game design and development Graphic & Digital Art Imaging Graphic Design and Multimedia Information Technology and Networking Internet of Things (IoT) IT Application Development Machine Learning and Data Science (Data Analytics) Mobile Application Development Online freelancing Security System Integration Software Development & Programming (python & JavaScript) Webpage development and design

Construction-4	False Ceiling Melamine polishing Structural Glazing Water Quality Technology
Creative Art and Design-15	Acting Calligraphy Choreography (traditional and contemporary) Cinematography Copywriting Film making and production Garden Design Interior Design Landscape Design and Management Lighting and sound technology Music and sound production Photography and Design Script and screenplay writing Sound Production and Recording VFX and special Effects
Electrical, Electronic and Mechanical-14	Auto Electrical Auto Mechanic heavy vehicle Auto Mechanic light vehicle Auto Painting Auto Panel Beating Drone Technology Electric Car repair and maintenance Electronic Repair and Maintenance (Mobile, watch, TV) Foundational Mechatronics Heating, Ventilation and Air Conditioning (HVAC) Heavy Vehicle Driving Home Appliance Repair and Maintenance Lift repair and maintenance Refrigeration and Air Conditioning (RAC)

Manufacturing-13	Applied Fashion and Technology Cane and bamboo art design and development Clay and mud product design and development Cosmetics product development Jewelry design and development Metal Art Design and Fabrication Product packaging Religious and cultural item tailoring Traditional Weaving Upholstery design and making Western Garment Tailoring Wood based product design and development Wooden furniture design and making
Power and Renewable Energy-5	Hydro-power instrumentation Power Cable Trenching and Laying Solar Power Technology Transformer Repair & Maintenance Transmission and Distribution
Tourism and Hospitality-14	Bakery and Confectionery Barista Bhutanese Food Production Chocolate and confectionary Culinary Arts Event Management Fast food Food & Beverage Services Front Office & Reservation Nature Guiding Trek Guiding French language Japanese language Mandarin Chinese Language

Conclusion: Post-Skills Training Support

Support will be provided to ensure employment/engagement and entrepreneurship activities on completion of skills training. Those interested in taking up additional training will also be supported to foster multiskilling.

Following measures will be adopted to ensure self-employment of individuals skilled under the program:

- Provision of basic entrepreneurship module as part of skills training delivery to encourage self-employment and entrepreneurship activities. DTE approved basic entrepreneurship curriculum to be provided to all training partners, and entrepreneurship TOT support will be provided to training partners.

- Facilitate access to credit facilities to establish small business either self or in group in coordination with the National CSI Development Bank, and other financial institutions in the country.
- Facilitate support and access to incubation facilities with Start-Up Centers under DCSI.
- Facilitate access to equipment support under Industry Development Grant Scheme (IDGS) in collaboration with DCSI.
- Provide a free sample of Detailed Project Report (DPR) available with MoLHR to interested individuals.
- Facilitate access to information on different acceleration and business support services available with different agencies.

Following measures will be adopted to ensure support to those interested to immediately pursue employment/engagement:

- Liaise with different employing agencies requiring skilled workforce.
- Facilitate and provide engagement support through the YELP Program of MoICE.

Following measures will be adopted to those interested to pursue additional skilling program through SDP:

- Assess the interest of individuals interested in taking up additional training.
- Facilitate and provide additional skilling support through SDP.

TVET Initiative for Sustainability in Fiji: The National TVET Policy

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Introduction

The absence of a National TVET Policy has been a longstanding issue in Fiji. Such a policy is required to transform Fiji's TVET system to improve its effectiveness, its ability to respond effectively to the rapid changes taking place in the labour market and society as a consequence of global disruptions (such as technological advancement, climate change and the recent COVID-19 pandemic), and its contribution to innovation and economic dynamism in Fiji.

To date, Fiji's TVET sector has operated without an overarching policy in place to guide stakeholders' actions towards agreed directions. While a TVET policy document was drafted in 2004 and updated in 2007, it was never officially endorsed. Having a National TVET Policy is crucial, both for engaging stakeholders in joint action and for promoting TVET to the public as it will have mechanisms for quality assurance, ensuring that training programs meet certain standards and produce graduates who are genuinely skilled and qualified.

In November 2020, a multi stakeholder TVET Policy Working Group was established to strengthen collaboration within Fiji's TVET sector. The Working Group is chaired by the Ministry of Education (MoE) and as of March 2023 comprises representatives from the Fiji Higher Education Commission, Fiji Commerce & Employers Federation, Tertiary Scholarships and Loans Services, Ministry of Employment, Productivity & Industrial Relations (including the National Employment Centre), the Ministry of Youth and Sports, Ministry of Women, Children and Poverty Alleviation, Ministry of Trade, Cooperatives and Small and Medium Enterprises, iTaukei Affairs Board, Fiji National University (including the National Training and Productivity Centre), University of the South Pacific TAFE, Australia Pacific Training Coalition (APTC), Tutu Rural Training Centre, Centre for Appropriate Technology and Development Nadave, Navuso Agricultural Technical Institute, Vivekananda Technical Centre, and Montfort Boys Town. The Working Group has been conducting regular meetings and deliberating on issues of mutual concern. It could therefore act as an advisory body to supervise work towards the development of a National TVET Policy.

The TEST Section of the Ministry of Education had submitted a Cabinet Paper for the Development of a National Technical and Vocational Education and Training Policy CP(23) 98 on 28/03/2023. As part of the cabinet decision, the Cabinet:

i. Noted the content of the Memorandum;
ii. Approved the development of a National Technical and Vocational Education and Training Policy; and
iii. Noted that the final National Technical and Vocational Education and Training Policy will be brought back to the Cabinet for its consideration.

Rationale

TVET aims to provide learners with the knowledge, skills, attitudes and values needed for work and for life, including lifelong learning skills and entrepreneurial skills for an alternative career pathway. Providing relevant and high-quality TVET programs can address skills gaps in the labour market, both locally and internationally, thereby contributing to higher employment levels and more rapid economic growth.

TVET can also contribute to inclusive and sustainable economic growth and competitiveness by upgrading the skills of individuals, organizations, enterprises and communities and thereby promoting productivity and innovation as well as facilitating pathways to decent employment.

The most commonly articulated goals of TVET are listed below:

- To facilitate economic development by providing citizens with the knowledge, skills, attitudes and values needed for productive employment in the modern sector of the economy;
- To provide Fijian youth with the skills needed for a wide range of job categories, including self-employment and wage employment;
- To teach relevant practical skills and promote a positive work ethic;
- To promote environmental sustainability and climate resilience and thereby improve the quality of life in Fiji;
- To alleviate poverty and unemployment and foster inclusion;
- To reduce disparities between rural and urban areas in Fiji; and
- To provide skills development and enhanced job opportunities for early school-leavers, the unemployed and those at risk of losing their jobs due to technological advancement.

A sound, evidence-based and widely endorsed National TVET Policy is needed to transform Fiji's TVET system to strengthen its effectiveness and improve coordination and collaboration among TVET stakeholders.

Preliminary Work Towards a National TVET Policy

Preliminary work has already been done to evaluate and develop evidence-based recommendations for strengthening Fiji's TVET system. For example, a rapid review of Fiji's TVET sector was commissioned in 2018 to better understand the current status of TVET in Fiji, including the main stakeholders and programmes being implemented. Based on evidence collected as part of the review, a roadmap for TVET sector reform was developed, consisting of eight key recommendations and corresponding priority actions for strengthening Fiji's TVET system.

In 2019, APTC in collaboration with MoE conducted an intensive consultation with a broad range of TVET stakeholders in Fiji, including government, training providers, industry representatives and disabled people's organisations, to examine how TVET change could take place as a means of systems strengthening. Stakeholders were asked to share their views and perspectives on the key drivers for change, as well as opportunities and strategies for achieving more effective TVET outcomes. One key driver of change identified by stakeholders was the need for national plans and policies to guide the further development and reform of the TVET sector.

One of the recommendations made by the authors of the 2018 TVET Rapid Review (Recommendation 2: Establish Fiji Skills Council to strengthen industry involvement) has already been partially implemented through the establishment of the Skills Council Fiji Committee (SCFC). SCFC's role is to oversee the implementation of the Skills Council Fiji (SCF), which include gaining the Cabinet's endorsement for its formation. A Cabinet paper has been developed for this purpose and will shortly be submitted to the Cabinet.

Policy options for reforming the Fiji Apprenticeship Scheme have also been explored to address underperformance of the scheme in recent years. While a business case was developed for presentation to Cabinet, which recommends that an independent employer-owned body be established to manage apprenticeships in Fiji and that employer contributions be used to fund wage and equipment costs, the SCFC later recommended withdrawing the Apprenticeships Fiji Cabinet paper and integrating it with the SCF Cabinet paper. Under this new scenario, SCF would directly control the Fiji Apprenticeship Scheme.

Budget Implications Relating to the Development of a National TVET Policy

MoE's Costed Operational Plan for 2021-22 had an allocated budget of $2,000.00 to cover the initial cost of consultations and meetings towards the formulation of a National TVET Policy and other related policies. However, due to budget constraints no allocations was provided in the MoE's Costed Operational Plan for 2022 -23.

In the MoE's Costed Operational Plan for 2023 -24 a budget of $50,000.00 has been allocated towards the development of the TVET Policy. The money is intended to be used for the continued work by the TVET Policy Working Group to have a National Roundtable consultation for stakeholder endorsement, finalize and submit to MOE for Cabinet submission and endorsement in November 2023. The funds will also be used for the initial phase of the implementation of the said Policy.

Stakeholders participating in the TVET Policy Working Group have expressed willingness to fund and/or facilitate activities leading to the development of a National TVET Policy. For instance, APTC has offered to cover the costs of an International and a National Consultant, who would work together to carry out all stages of work associated with developing the policy, including gaining endorsement from all relevant stakeholders and from Cabinet.

Policy Consultation

- The Office of the Solicitor-General has been consulted for their input
- The Chairperson of the TVET Working Group had discussed briefly about the Policy during the Education Summit in October as part of the Thematic Area 5: Technical and Vocational Education and Training, Non-formal and Life-long learning
- As part of the policy development process a National Roundtable consultation for stakeholder endorsement will be done
- The policy will be prepared following the guidelines of the MOE's Policy on Policies

Recommendations

i. Review the undertaking done by the TVET Working Group in developing the first draft of the National Technical and Vocational Education and Training (TVET) Policy in Fiji; and
ii. Endorse for the development of a National TVET Policy to continue through wider consultation and validation process with relevant stakeholders.

Surmounting Challenges: Crafting Solutions for Skill Development in India

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Introduction

India's demographic advantage lies in its large and youthful population. A significant percentage of the population is under 30 years old, providing a potential workforce for economic development and innovation. A young and growing population can contribute to increased productivity, innovation, and economic growth. This demographic dividend can be harnessed to drive various sectors of the economy. The large population, especially the middle-class segment, creates a substantial consumer market. This can attract investments and stimulate demand for goods and services, driving economic activities. India's demographic diversity and English proficiency make its workforce attractive for global companies outsourcing business processes, software development, and other services. Effective implementation, continuous adaptation to changing needs, and addressing challenges such as infrastructure gaps are crucial for maximizing the benefits of demography and skilling in India.

There are several strategies initiated by India in addressing the skilling of youths in India. Viksit Bharat Sankalp Yatra is being undertaken across the country with the aim to attain saturation of flagship schemes of the government through ensuring that the benefits of these schemes reach all targeted beneficiaries in a time bound manner. Similarly, the vision for the Amrit Kaal includes a technology-driven and knowledge-based economy, with strong public finances and a robust financial sector. The purpose of Amrit Kaal is to better the lives of citizens, lessen the developmental divide between villages and cities, and reduce government interference in public life. It also entails the development or acquisition of the latest technologies for the country.

Challenges in Skilling

Despite the efforts to promote skill development in India, several challenges persist, hindering the effective implementation of skilling initiatives. Some of the key challenges include:

1. **Quality of Training Infrastructure:** The quality of training infrastructure, including educational institutions and skill development centers, varies across regions. In many cases, there is a lack of modern facilities, qualified trainers, and updated curriculum, impacting the overall quality of skill training.

2. **Relevance to Industry Needs:** A significant challenge is ensuring that the skills imparted align with the current and future needs of industries. Rapid technological advancements often outpace the ability of skilling programs to adapt, leading to a potential mismatch between the skills acquired and the skills demanded by employers.

3. **Inclusive Access:** There is a need to ensure that skilling opportunities are accessible to all socio-economic groups, including those in rural areas and marginalized communities. Lack of inclusivity can exacerbate existing inequalities and hinder social and economic development.

4. **Awareness and Perception:** There is a lack of awareness among potential beneficiaries about the importance of skill development and the opportunities it can create. Additionally, there may be societal perceptions that prioritize traditional academic education over vocational or skill-based training.

5. **Scale and Reach:** India's large population poses a challenge in scaling up skilling initiatives to reach a significant portion of the workforce. Expanding the reach of these programs, especially in remote and underserved areas, is a logistical and resource-intensive task.

6. **Limited Industry Collaboration:** Collaboration between skilling institutions and industries is essential to ensure that training programs are relevant and meet industry standards. Limited engagement and collaboration between these entities can hinder the effectiveness of skilling initiatives.

7. **Quality of Trainers:** The effectiveness of skill development programs heavily depends on the quality of trainers. In some cases, there is a shortage of skilled and experienced trainers who can provide high-quality instruction and guidance.

8. **Financing and Sustainability:** Adequate funding is crucial for sustaining skilling initiatives. Many programs face financial constraints, affecting their ability to invest in infrastructure, technology, and ongoing curriculum updates. Finding sustainable funding models is a persistent challenge.

9. **Recognition of Informal Skills:** A significant portion of the workforce in India is engaged in the informal sector, where skills are often acquired through hands-on experience rather than formal training. Recognizing and validating these informal skills poses a challenge in the context of formal skilling programs.

Addressing these challenges requires a comprehensive and collaborative approach involving government bodies, educational institutions, industries, and the community. Regular assessments, feedback mechanisms, and a focus on continuous improvement are essential for building a robust and effective skilling ecosystem in India.

Strategies for Addressing the Hurdles in Skilling

Technical and Vocational Education and Training (TVET) in India is addressed through various policies, institutions, and initiatives aimed at promoting skill development and creating a workforce that meets the demands of a rapidly changing economy. Here are key aspects of how TVET is addressed in India:

1. National Skill Development Policy

- India has a National Skill Development Policy that focuses on creating a skilled workforce to meet the demands of various industries.
- The policy aims to train a large number of people across different sectors and improve the overall employability of the workforce.

2. Skill India Mission

- Launched in 2015, the Skill India Mission is a flagship program that aims to provide skill training to a significant portion of the Indian population.
- The mission focuses on various aspects of skill development, including industry-relevant training, entrepreneurship development, and recognition of prior learning

3. National Skill Development Corporation (NSDC)

- NSDC is a public-private partnership that plays a crucial role in implementing the Skill India Mission.
- It collaborates with private sector companies and training providers to create a scalable and high-quality vocational education ecosystem.

4. Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

- PMKVY is a flagship scheme under the Skill India Mission that provides financial rewards for the successful completion of approved skill training programs.
- It aims to enable a large number of Indian youth to take up industry-relevant skill training to help them secure a better livelihood.

5. Industrial Training Institutes (ITIs)

- ITIs are key institutions providing vocational training at the post-secondary level. They offer courses in various trades and are designed to equip students with the skills needed for specific industries.
- Efforts have been made to modernize and upgrade ITIs to meet contemporary industry standards.

6. Polytechnics and Engineering Colleges

- Polytechnics and engineering colleges offer diploma and degree programs in engineering and technology, contributing to the technical education landscape in the country.

7. National Vocational Education Qualification Framework (NVEQF)

- NVEQF provides a framework for organizing qualifications based on levels of knowledge, skills, and aptitude. It facilitates mobility between vocational and general education and ensures that vocational education is recognized and respected.

8. Public-Private Partnerships (PPPs)

- There is an increasing emphasis on public-private partnerships to bridge the gap between education and industry. Collaboration with industries ensures that training programs are aligned with current industry needs.

9. Curriculum Reforms

- Efforts are ongoing to update and modernize the curriculum of TVET programs to make them more relevant to the changing needs of industries.
- The focus is on incorporating emerging technologies and industry best practices into the training modules.

10. Digital Initiatives

- Integration of digital technologies and e-learning in TVET programs to enhance accessibility, quality, and reach of skill development initiatives.

While there have been significant strides, challenges such as infrastructure development, curriculum relevance, and the perception of vocational education still exist and require continuous attention for the effective promotion and development of TVET in India.

The Central Board of Secondary Education (CBSE) in India has indeed taken steps to integrate skill development into the school curriculum. The focus on skill-based education aims to prepare students for practical, real-world challenges and enhance their employability. CBSE has introduced skill education as a mandatory subject for students in secondary and senior secondary levels. This subject covers a range of vocational skills and practical knowledge, providing students with hands-on experience in various fields. CBSE schools often collaborate with industries to bridge the gap between education and industry requirements. Such partnerships can lead to internships, apprenticeships, and exposure to real-world work environments, enhancing students' understanding of practical skills.

Youth skilling in India has been a focal point for various government and private initiatives to empower young individuals with the necessary skills for employment and entrepreneurship. Launched by the government, Skill India is a flagship program aimed at providing training and skill development to a large number of Indian youth. It includes various sub-schemes and initiatives like Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and National Apprenticeship Promotion Scheme (NAPS). NSDC plays a pivotal role in coordinating and driving the skill development ecosystem in India. It partners with various organizations to implement skill development programs across sectors. Apprenticeship programs facilitate on-the-job training, allowing young individuals to gain practical experience while earning a stipend. NAPS is one such initiative promoting apprenticeships.

The use of technology in skilling programs is increasingly emphasized. This includes digital literacy, online courses, and the integration of technology-related skills to align individuals with the demands of the modern job market. Effective monitoring and evaluation mechanisms are put in place to assess the impact of skilling initiatives. Regular feedback

and assessments help in refining and improving the programs over time. Efforts are made to ensure inclusivity in skilling programs, addressing the needs of different demographics, including women, tribal communities, and other marginalized groups. While progress is being made, challenges such as infrastructure limitations, connectivity issues, and the unique socio-economic context of each district require tailored approaches. Ongoing collaboration between government bodies, local communities, NGOs, and the private sector is essential for sustainable and inclusive skilling at district level.

The Status of Industry-Academia Integration in Malaysian TVET Ecosystem and its Way Forward

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Introduction

Polytechnic Transformation Agenda focuses on several identified objectives, including:

- Elevating polytechnics as leading institutions in the field of technical and vocational education and training
- Strengthening the relevance and responsiveness of the study programs in polytechnics to the economic development of the country
- Leading in specific fields of focus and technology that can enable polytechnics to produce high-quality graduates who are entrepreneurial, highly employable, and competitive
- Building an international reputation and brand that can position polytechnic institutions among the best higher education institutions in the country
- Diversifying and expanding the program offerings to attract students to polytechnics

To achieve the stated objectives, the transformation agenda is implemented based on four cores:

- Empowering polytechnics to be a choice equivalent to universities
- Developing study programs and research in specialized fields that capitalize on the strengths of each polytechnic
- Empowering polytechnic citizens with high knowledge and skills
- Building an excellent image and work culture

36 polytechnics and 105 community colleges are designed to ensure that the transformation of the agenda's objectives can be achieved.

Issues on Industry-Academia Integration in TVET Malaysia

One of the primary challenges is the misalignment between the skills taught in educational institutions and the skills demanded by the industry. If the curriculum is not updated regularly to match industry needs, graduates may lack the skills required for the current job market.

Insufficient participation and engagement from industry stakeholders can also hinder effective integration and TVET programs require up-to-date infrastructure and technology to provide practical, hands-on training. Outdated facilities and equipment can lead to a gap between the skills learned in the classroom and the skills needed in the workplace.

There may also be a perception issue where TVET is not considered at par with academic education. Raising awareness about the importance of TVET and changing societal perceptions can encourage more students to pursue vocational education. Meanwhile, ensuring the quality of TVET programs is crucial for producing graduates with the right skills. Effective quality assurance mechanisms need to be in place to monitor and assess the relevance and effectiveness of TVET courses. Finally, with the increasing globalization of industries, it's essential for TVET programs to address not only local but also international skill requirements and standards.

Industry-led Curriculum Reformation

Malaysia has been actively working on Technical and Vocational Education and Training (TVET) reforms to align its curriculum with industry needs. The development of an industry-driven curriculum in TVET is crucial to ensure that graduates possess the skills and knowledge required by employers in relevant industries. Some of the key aspects regarding the industry-driven curriculum in TVET in Malaysia includes the following:

- Industry Collaboration
- Skills Mapping
- Advisory Committees
- Work-Based Learning
- Flexible Curriculum Design
- Certification and Accreditation
- Continuous Feedback Mechanism
- Technology Integration
- Soft Skills Development
- Global Competitiveness

Initiative of Fostering Industry-led Curriculum through Centre of Technology and Industry on Campus

Industry-Led Curricula are fostered through the role of Centre of Technology in education institutions in Malaysia especially in the Polytechnic system.

The objectives of the Centre of Technology are to develop more subject matter experts (SME's) to fulfill the needs of the New Malaysia Economy Model based on innovation and creativity. So the role of these COT's is to explore and become pioneers through the activity of research, innovation, knowledge and technology transfer as well as high impact collaboration with the industry according to the niche area of the COT.

Up till 2023, more than 200 industries collaborate with the COT in terms of sharing technology and knowledge as well as developing new technology that benefit the nation. Income generation for the Centre of Technology from 2019 to 2022 is RM8.4 million. Some of the success story involving COT includes:

Centre of Medical Engineering Technology (CMET)

The Biomedical Calibration Laboratory, the first to be accredited with MS ISO/IEC 17025 in Malaysia, has now transitioned to MS ISO/IEC 17025:2017. This accreditation was achieved through Re-certification and Transition Assessment audits. To date, CMET has successfully obtained accreditation for the scope of Patient Simulator, Infusion Pump Analyzer, Defibrillator Analyzer, Non-Invasive Blood Pressure Meter (NIBP) Analyzer, Electrical Safety Analyzer, Electrosurgical Analyzer, Syringe Pump, and Digital Pressure Meter.

The Biomedical Calibration Laboratory, CMET, received MS ISO/IEC 17025 certification from the Department of Standards Malaysia on April 7, 2014. It is a pioneering laboratory in Malaysia accredited to perform calibration activities for internationally recognized medical testing equipment. CMET successfully transitioned to the latest version, MS ISO/IEC 17025:2017, in October 2019.

THE FIRST WORLD CLASS BIOMEDICAL EQUIPMENT CALIBRATION LAB IN MALAYSIA

"Providing accurate and trustworthy calibration testing result recognised by its International Standards"

Shah Alam, 7 April 2014 – The **Department of Standards Malaysia (DSM) recognised the Biomedical Calibration Lab (BMCL) at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) for meeting international standards**, through MS ISO/IEC 17025:2005 accreditation. It is conferred by **Madam Fadilah Baharin, Director General of DSM to Tn Hj Kamaruzaman Ismail, Director of Politeknik Sultan Salahuddin Abdul Aziz Shah and witnessed by Dato' Seri Ir. Dr Zaini bin Ujang, Secretary General II, Ministry of Education Malaysia** in conjunction with the MoU Signing Ceremony between PSA and SIRIM held today. The lab accredited under Skim Akreditasi Makmal Malaysia (SAMM), is a competence laboratory that meets both technical and management requirements, that also operates in accordance with MS ISO 9001, Quality Management Systems.

"Congratulations to BMCL on becoming the ***first lab in the country accredited for the calibration of biomedical equipment*** and also to ***Politeknik Sultan Salahuddin Abdul Aziz Shah as the only polytechnic institution in Malaysia accredited with MS ISO/IEC 17025 by DSM***. As I understand it, this calibration service will be opened to the public, where it would not only provide benefits within our education system but also serves the industry", said **Fadilah at the ceremony.**

"Furthermore, this accreditation ***is an assurance to calibration report from the lab***, which is accurate, trustworthy and accepted by other countries e.g. Australia, China, Japan and US. This will also save resources in terms of time and money by reducing duplicative testing. Furthermore, it supports international trade by eliminating non-tariff trade barriers," added Fadilah.

Source: APLAC News Notes Issue No. 119

Figure 1: Certificate Accreditation for Biomedical Equipment Calibration Lab in Malaysia

CMET has now become a focal point as a benchmarking centre for local and international institutions and agencies. CMET is ready to share its experiences with all parties, be it educational institutions or healthcare companies.

Figure 2: Benchmarking centre for local and international institutions and agencies

Industry-led Curriculum Reformation

Centre of Technology as Industry-Technology Enabler

CENTRE OF TECHNOLOGY	POLYTECHNIC	TECHNOLOGY CHAMPION
Centre of Technology in Marine Engineering (CTME)	PUO	• Transas Engine Room Simulator Technology (TECHSIM ERS 5000)
Centre of Air-Conditioning & Refrigeration (CARe)	PUO	• Air-Conditioning and Mechanical Ventilation Technology
Centre for Medical Electronic Technology (CMET)	PSA	• Calibration Technology for Biomedical Analysers (MS ISO/ IEC 17025)
Creative Design Centre (CDeC)	PIS	• Creative Design and Production Technology
Polytechnic Centre of Technology in Automotive & Manufacturing (POLCAM)	PSAS	• Autonomous Vehicle (AV) Technology • Electric Vehicle (EV) Technology • Additive Manufacturing Technology

Centre of Food Science & Technology (CFoST)	POLISAS	• Food and Nutrition Analysis Technology
Centre of Town & Regional Planning (CToP)	POLIMAS	• Geographic Information System (GIS) and Modelling Technology
Centre of Architecture Technology (CArT)	PPD	• Building Information Modelling (BIM) and Heritage Study Technology
Mechatronics Robotic Technology Centre (MRTC)	PTSB	• Mechatronics and Robotics Technology
Centre of Tourism & Hospitality (CeTraH)	PMM	• Tourism and Hospitality Technology Services
Centre of Environmental Technology (CENTA)	PSIS	• Environmental and Sustainable Engineering Technology
Automotive Technology Centre (ATeC)	PSMZA	• Automotive & Hybrid Electric Vehicle (HEV) Technology • Electro-Mechanical Rotating Machine Technology • Alternative Fuel Production and Testing Technology

The Industry on Campus (IOC) initiative is a collaboration centred on students or trainees, bringing the real industrial environment into the Teaching and Learning (T&L) processes at TVET institutions. It involves utilizing a student-centric approach by integrating real industry learning, whether within the institution, in industries, or at leased premises.

The development of IOC at Community Colleges and Polytechnics METrO also serves as a catalyst for aligning job specifications and addressing the skills needed by the industry, aiming to reduce job mismatch in the country.

Industry Education Centre (IEC) Concept in Malaysia

Way Forward through Industry Education Centre (IEC) Concept in Polytechnic and Community Colleges in Malaysia

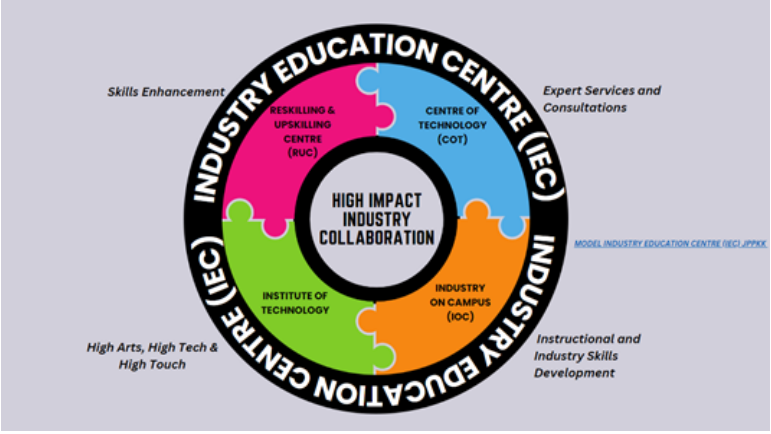
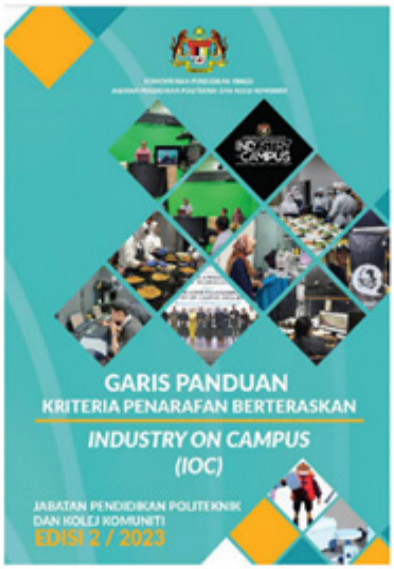


Figure 3: Industry Education Centre (IEC) Model



There is future planning on developing a guide book for the Reskilling and Upskilling Centre (RUC) in Malaysia. With that, stringent budget allocation is needed for providing high end facility in order for the IEC element can be successfully implemented and move forward in Malaysia.

There is future planning on developing a guide book for the Reskilling and Upskilling Centre (RUC) in Malaysia. With that, stringent budget allocation is needed for providing high end facility in order for the IEC element can be successfully implemented and move forward in Malaysia

Moreover, in ensuring better sustainable industry-institution relations, some of the key aspects need to be focused on which are:

- **Industry-Driven Curriculum Development:** Continuously involve industry representatives in the development and review of curricula to ensure that the skills taught are in line with current industry requirements.
- **Enhanced Partnerships:** Strengthen partnerships between TVET institutions and industries through initiatives such as apprenticeships, internships, and industry-sponsored projects.
- **Professional Development for Educators:** Provide opportunities for educators to stay updated on industry trends and practices through industry attachments, workshops, and training programs.
- **Flexibility and Adaptability:** Design TVET programs to be flexible and adaptable to changes in industry requirements.
- **Government Support:** Ensure ongoing government support and policies that incentivize collaboration between academia and industry.
- **Continuous Monitoring and Evaluation:** Implement mechanisms for continuous monitoring and evaluation of the effectiveness of industry-academia integration initiatives.

These factors need to be aligned together with the New Industrial Masterplan (NIMP) 2030 of Malaysia so that the workforce that will be produced by these TVET institutions will not go to waste and eventually give benefit for the development of the nation and Malaysia as a country.

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Pelan Pembangunan Pendidikan Malaysia 2015-2025 (Pendidikan Tinggi)

Best Practices in Enhancing Quality and Relevance of TVET System in Maldives

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Maldives National Skills Development Authority (MNSDA)

The HE & T Act, which was adopted in May 2021, established the Maldives National Skills Development Authority (MNSDA), which is vital to the creation of policies and the analysis of training needs. The MNSDA guarantees a uniform approach to skill development through programs like National Apprenticeships, Recognition of Prior Learning (RPL), Institute-Based Training (IBT), and the creation of National Competency Standards (NCS). The authority is committed to sustainability and plays a dynamic role in ensuring that the Maldivian workforce is ready for success in a fast-changing global environment.

National Trade Testing and Certification (NTTC)

The National Trade testing and Certification (NTTC) program is intended for individuals who have gained at least five years of experience in a skills trade. Experience from Employers or designated government agencies.

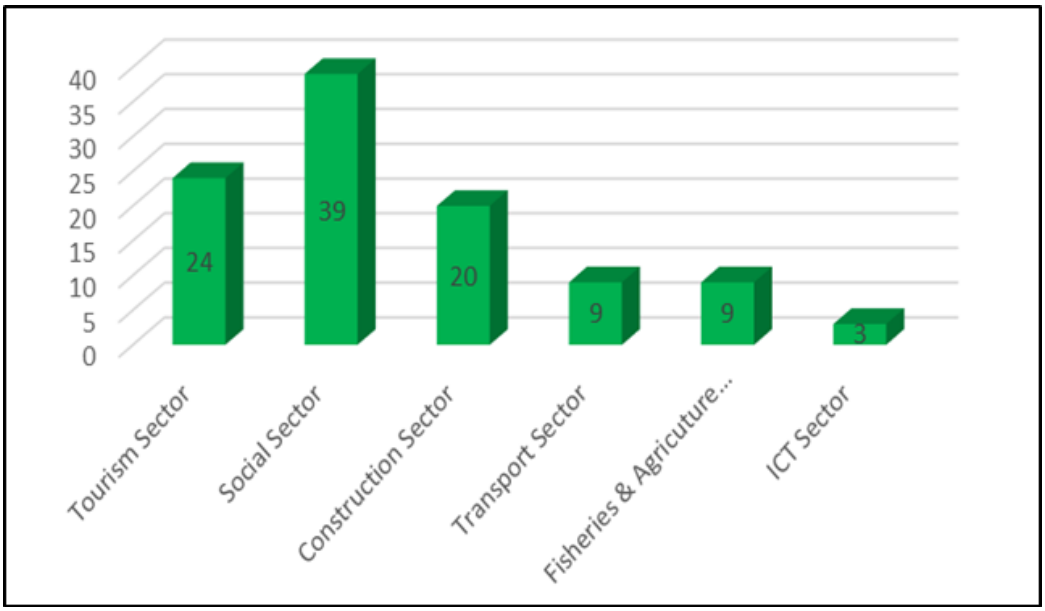
The objectives of the National Trade Testing program are to:

- Recognize prior learning
- Establish a fast-track certification system for experienced workers
- Create a certified workforce pool with National Qualifications
- Provide opportunities for job advancements and career growth in various trade domains

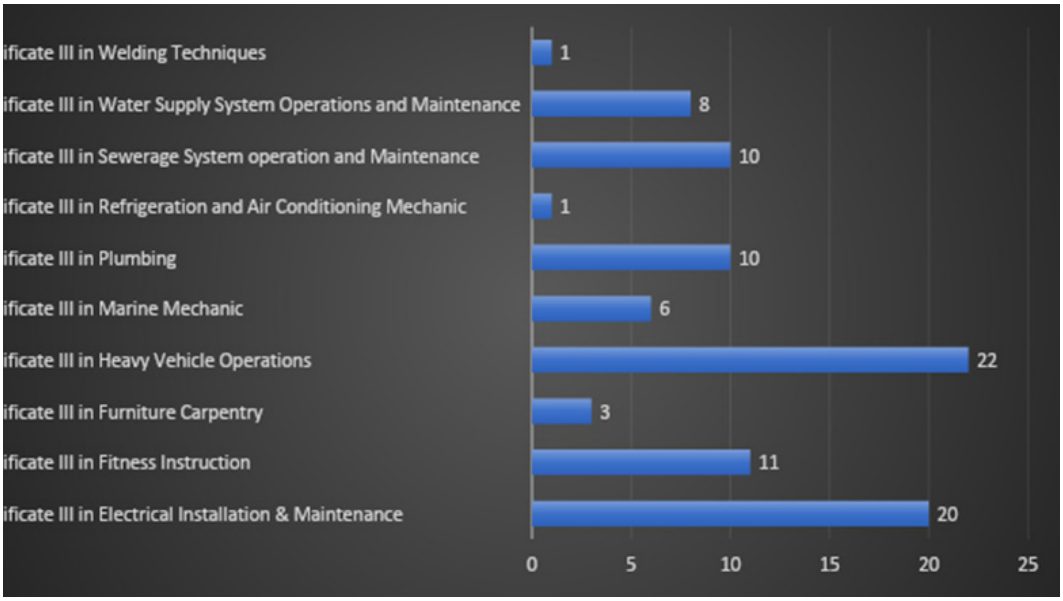
National Competency Standards

National Competency Standards (NCS) are benchmarks that specify the abilities, knowledge, and skills required for successful performance in a given industry or career within a nation. NCS were created collectively with feedback from professionals in the field and are used as a guide when creating training plans, evaluating candidates, and matching skill levels to job requirements. Performance standards, thorough explanations of knowledge and abilities, assessment protocols, and a focus on industry relevance are all included. To create a skilled and flexible workforce, NCS supports standardized skill development, ease workforce planning, and close the knowledge gap between academia and business.

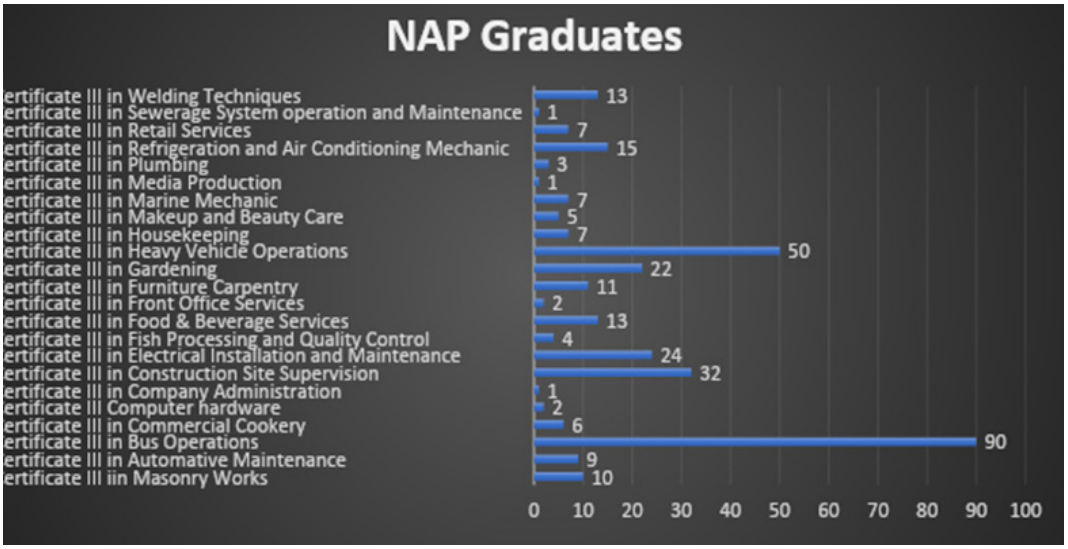
- Currently MNSDA has 104 National Competency Standards in 6 different sectors;
- Among these 104 standards we are currently revising 60 NCS to cater the requirements of the sectors;
- The National Competency Standard package when development consists of the curriculum, national standard, learning materials, assessment resource book and logbook; and
- Even though the current NCS are Certificate level 1, 2 ,3 and 4 , a new 60 standards are in the process of development with National Diploma level standards



Statistics of National Trade Testing and Certification (NTTC) & National Apprenticeship Program (NAP)



Graduates Vs Trade NTTC



Graduates Vs Trade NAP

Conclusion

Skills-related programs play a crucial role in the development and progress of the Maldives, addressing the nation's unique challenges and opportunities. In a country heavily reliant on tourism and marine resources, tailored skills programs can enhance the competitiveness of the workforce. These initiatives provide avenues for individuals to acquire specialized knowledge in areas such as hospitality, marine biology, and sustainable tourism practices, aligning with the specific needs of the Maldivian economy. Furthermore, skills-related programs contribute to reducing unemployment rates by preparing the workforce for diverse employment opportunities, fostering economic stability.

The success of Technical and Vocational Education and Training (TVET) in Maldives can be attributed to its responsiveness to industry demands and a focus on practical, hands-on learning. As TVET programs continue to evolve, the nation witnesses a positive impact on employment rates, economic growth, and the overall well-being of its citizens, solidifying the importance of skills development in the country. In conclusion, the success of TVET programs in Maldives underscores the significance of a skills-oriented approach in shaping a resilient and thriving society.

Implementation of Policies Aligning Vocational and Technical Education and Training with the Industry in Mongolia

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Introduction

Recognizing the imperative to scrutinize the influence of various factors on the alignment of education with the demands of the labor market, there is a compelling need to establish a Competency Center within the purview of vocational and technical education and training institutions. This initiative aligns with regional development concepts, operational policies, and the comprehensive planning and implementing strategies of Mongolia.

Impact of National Policy and Legal Environment

Educational Governance and Economic Growth

The analysis is grounded in national policies, legal documents, and international insights, recognizing a vital need to emphasize the governance, management, and leadership of educational institutions. This emphasis aims to enhance the contribution of education to economic growth and development.

> **Regional Development Principle of Mongolia (from June 14, 2001):**
>
> Highlighted in Section 4.7.4.a, there is an explicit endorsement for supporting the establishment of university and college branches, research, information, and training centers in regions. The objective is to establish a system of new education and science aligned with the regional development direction.

Action Program of the Government of Mongolia (2016-2020):

Section 2.3.7 underscores, in line with the regional development concept, the gradual transition of local universities to the form of campuses. Moreover, Section 6.2.2 envisions the revision of the regional development concept to create fundamental conditions for green production development, economic diversification, specialization, cooperative focus, and integration into regional economic frameworks.

Vision 2050 (Long-term Policy Document):

The long-term policy document, Vision 2050, aligns with the concept of regional development, emphasizing the importance of respecting national culture, localizing population, fostering green production with economic diversification, specialization, and cooperative focus. The goal is to develop competitive and relatively balanced regions integrated into regional economic networks, while preserving the natural ecosystem for future generations.

General Law on Education:

In Article 18.5, the requirement is outlined that educational institutions must possess a structure conducive to conducting training, research, experiments, and production aligned with their primary functions. Additionally, Section 9.9 of the Law on Vocational and Technical Education and Training underscores the flexibility of vocational and technical education institutions, permitting diversification in accordance with economic priorities, population concentration, and regional development policies.

Law on Vocational and Technical Education and Training:

Section 9.9 of this law allows for the diversification of vocational and technical education institutions based on economic priorities, population concentration, and regional development policies.

Section 9.12 provides institutions the authority to establish competence centers, interdisciplinary training camps, start-up companies, business incubator centers, and auxiliary businesses.

Resolution 306 of the Government of Mongolia (2023.08.23):

Article 9 of this resolution outlines comprehensive measures to be taken regarding state-owned higher education institutions, professional and technical education and training institutions. These measures are intended to diversify and develop vocational and technical education institutions, enhance management practices, and create a flexible hierarchical education system. The focus is on aligning these measures with local development trends, economic structures, and labor market demands.

New Revival Policy (Resolution 106 of the Mongolian Parliament, 2021):

According to Resolution 106, the New Revival Policy defines a specific policy for vocational and technical education and training institutions. This policy involves the decentralization of cities by diversifying some universities and colleges based on specializations and fields. It further includes the establishment of campuses in satellite cities and local areas. The policy supports development based on research and innovation through a model school with a Competency Center. This initiative implements knowledge management through training, research, and experimental production while disseminating best practices.

Impact of International Experiences and Project Implementation

Having conducted a thorough review of "regional development policies, projects, and programs" in Mongolia, there is a recognition of the significance of international experience and the implementation of various initiatives.

According to the 2023 first half-year report on Mongolia's socio-economic landscape, the economy experienced a growth of 4.7 percent in 2022, with an expected increase to 5.2 percent in 2023. This growth is attributed to mining and export expansion and the ongoing recovery of the service sector post-pandemic. Despite this growth, there is a notable underutilization of the workforce, highlighting a need for increased training and retraining of workers. The emphasis is on cultivating skills that align with industry requirements, employer needs, and emerging technologies.

Recognizing the skill gap as a critical issue, the approach to resolving it involves providing diverse training courses through specialized Competency Centers. This strategy aligns with the dynamic demands of the workforce and aims to bridge the gap between industry needs and available skills.

The UNESCO and the Institute of Education and Research of Mongolia's Basic Study on the education sector in 2019 emphasizes the sufficiency of Technical and Vocational Education and Training (TVET) institutes across Mongolia, with 1-5 vocational training institutes in each province. These institutes offer training in 10-20 professions, indicating adequate availability of TVET depending on the geographical location. The study recommends the establishment and operation of inter-school industrial practice centers within these existing schools. This approach aims to enhance vocational training accessibility and better align the education sector with the needs of industries and employers.

The Vocational Education and Training Project, implemented by the United States Millennium Challenge Account, aims to establish foundational conditions and a conducive learning environment for the training of skilled professionals capable of international competitiveness in key economic sectors. The project focuses on enhancing the content, program quality, and teaching methodologies within the vocational and technical fields. A pioneering initiative involved the creation of an exemplary "Model School" in the field of vocational education and training, introducing progressive practices for the first time. Gobi-Sumber Province Technical College was selected as a model school for mining, Technical and Technological College for the construction industry, and UB Nursing School for health. Activities included building repairs, equipment supply, multimedia facilities,

implementation of Competency-Based Education (CBI) programs, teacher training, and organizational management. Efforts were made to connect these model schools with counterparts in developed countries.

The action plan of the Asian Development Bank (ADB)'s "Employability Skills Promotion" project reflects a commitment to the main direction of "diversification and development of TVET." This involves diversifying into construction, road transport, and agriculture industries. Complete equipment was provided for respective polytechnic colleges (PC) and their competency centers. Noteworthy examples include Nalaikh Polytechnic College as the center of competence for road transport and a PC in Bayanchandman sum of the Tuv province for agriculture.

Since 2013, the German Association for International Cooperation (GIZ)'s Cooperative Technical and Vocational Education Project (CTVET) has strategically supported Vocational and Technical Education and Training. The focus has been on diversifying and improving the quality of TVET institutions. Various activities have been implemented within the project, resulting in significant achievements such as the establishment of seven Competency Centers. Hosted by institutions such as Construction Polytechnic College in Ulaanbaatar (specializing in construction, plumbing, and heating), Mongolian-Korean Polytechnic College (focusing on light industry mechanics and automotive mechatronics), Polytechnic College of Engineering and Technology (centered on construction carpentry), Mining and Energy Polytechnic College in Darkhan (specializing in mechatronics and electrical-electronics), Dornod Polytechnic College in Choibalsan (emphasizing industrial mechanics, heavy machine mechanics, labor safety, and hygiene), Zavkhan Polytechnic College in Uliastai (with a focus on construction carpentry and construction), and Umnugov Polytechnic in Dalanzadgad (specializing in welding and industrial mechanics), these Competency Centers actively develop internal and external quality assessment mechanisms.

During these project implementations, which played a pivotal role in enhancing the quality of the Vocational Education and Training (VET) sector, invaluable experiences were gained in establishing, fortifying, and empowering COMPETENCY CENTERS. Efforts are directed towards regularizing the functions of these centers, ensuring the sustainability of their operations, restructuring management organizations, enhancing the skills of teachers and staff, fostering an optimal learning environment, revising the curriculum, promoting collaboration among competence centers, coordinating activities, exchanging experiences, disseminating knowledge, and facilitating consultations. The goal is to establish frameworks for implementing activities that involve offering support to other schools through cooperative initiatives.

Good Practices of Establishing Competency Centers

Competency Centers are positioned to play a pivotal role in enhancing the quality of TVET. It is structured to operate in the following key directions, drawing from successful international experiences:

- Formulating and executing standard training programs for technical and vocational education across various fields in alignment with both national and international standards;

- Organizing activities related to training, research, and the production of products and services within specialized fields to foster practical knowledge and skills;
- Offering qualification and refresher training programs designed for teachers, engineers, and technicians to keep them abreast of the latest developments in their respective fields;
- Collaborating with relevant organizations to train evaluators and accreditation staff in specialized fields, ensuring a high standard of education assessment;
- Providing ongoing skill development for disseminating teachers through partnerships with related organizations in specialized fields;
- Creating skill levels and implementing evaluation and verification activities in collaboration with relevant stakeholders;
- Offering competency-based assessment and prior knowledge assessment services in cooperation with specialized assessment organizations;
- Developing and delivering services that integrate advanced technology and innovative approaches to enhance the learning experience;
- Preparing and organizing skill competitions at both national and international levels to showcase and recognize excellence in various fields;
- Providing consulting services to disseminate good practices throughout the country, sharing valuable insights and expertise;
- Contributing to the development of training standards, programs, textbooks, manuals, and engaging in research work. Additionally, organizing meetings and seminars in specialized fields; and
- Undertaking custom projects and contract work within the scope of mandated functions to address specific needs and requirements

TVET institutions are diversifying into specific professional fields, establishing Competency Centers capable of leading and partnering in various activities. The majority of funding for these initiatives is derived from the VET Fund of Mongolia.

The Competence Center is dedicated to implementing standard training programs in specialized fields, introducing innovative ideas and best practices, engaging in the production of relevant goods and services, conducting research to stay abreast with industry trends, qualifying consultants, teachers, engineers, and technicians, preparing individuals for national and international competitions, and assessing and certifying skill levels. This approach aims to strengthen the connection between education and industry, fostering collaboration with stakeholders and acting as a BRIDGE to ensure that graduates are well-prepared for the dynamic demands of the workforce.

Conclusion

With the approval of the Mongolia's Development Policy, there is now a well-organized foundation for the implementation of relevant policy documents. The coherence and continuity of long-term, medium-term, and short-term national, sectoral, inter-sectoral, and local development policy documents have been enhanced, establishing a legal framework that ensures the stability and unity of development policy. This has resulted in the formation of an integrated system for planning development policy.

The diversification and development of TVET institutions, along with the establishment of Competency Centers, present considerable challenges. However, addressing the issue of deconcentration, a prevalent concern in Mongolia, and meeting the human resource needs of local industries and enterprises by training skilled workers can significantly contribute to real progress.

The government and central state administrative organizations responsible for TVET have gained valuable experience through their involvement in internationally funded projects and programs. These experiences span various aspects, including policies and activities related to the diversification of TVET institutions, the establishment of Competency Centers, interdisciplinary practice bases, and the identification of priority professional directions.

Looking ahead, it is crucial to focus on disseminating this wealth of experience and creating a stable foundation for future initiatives in the field of TVET.

Best Practices in Enhancing Quality and Relevance of TVET System in Myanmar

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Overview of the TVET System in Myanmar

Myanmar is currently trying to raise its economy and standards of society through upgrading its different sectors such as education, industry, agriculture, culture and so on. Here, looking at other developed countries, state leaders realize that Technical and Vocational Education and Training (TVET) is the most fundamental and fastest avenue for fulfilling competent and experienced technicians, skilled human resources and educated workforce to every sector which play a vital role in a country's economic development. In addition, it is believed that TVET is one of the feasible solutions to reduce youth unemployment. Thus, Technical and Vocational Education and Training (TVET) becomes one of the focal sectors in education.

TVET in Myanmar

The government provides formal TVET at upper-secondary and post secondary levels as part of the national education system. TVET is offered as a two-year programme while post-secondary TVET is offered by specialised training institutes under the MOST and other line Ministries. There are 209 government TVET providers. The Ministry of Science and Technology manages 104 TVET schools: 4 Government Technological Colleges (GTC), 28 Government Technical Institutes (GTI), 36 Government Technical High Schools (GTHS), 30 Basic Technical, Agricultural and Livestock High Schools, 5 Vocational Training Institutes (VTI) and one TVET Teacher Training College (TTTC) in Naypyitaw Council area and in all regions and states, the Ministry of Border Affairs 53 TVET providers, the Ministry of Agriculture, Livestock and Irrigation (MOALI) 45 providers and the Ministry of Social Welfare, Relief and Resettlement (MOSWRR) 21 providers etc. There are a large number of private providers of non-government TVET programmes being implemented across the country, while various types of informal training are offered by private sector companies and NGOs. This pattern of diversified government provision of TVET, while not uncommon throughout Asia, provides challenges in terms of coordination, oversight and quality assurance of the national TVET system. In the Technical and Vocational Education and Training sector, there are four different types and such as the following:

i. Basic level technical and vocational education that can be attended by those who have completed primary school;

ii. Middle level technical and vocational education that can be attended by those who have completed middle school (lower secondary);
iii. Diploma level technical and vocational education that can be attended by those who have completed high school (upper secondary); and
iv. Non-formal education and vocational education for improving ability regardless of educational level, gender, or age, offered in schools opened by government or private organizations that meet the criteria

TVET in Myanmar

TVET's curriculum and teaching materials in Myanmar need to be updated with teachers, students and the skills required in the workplace. A link between knowledge and skills is also needed. Bridging the gap between theoretical knowledge and practical skills is essential.

Curriculum reform is crucial in TVET, ensuring programs equip students to meet market demands, modern labor needs, and contribute to the nation's economic growth. Curriculum reform is essential in the context of vocational and technical education and training (TVET) in Myanmar to ensure that programs adequately equip students to satisfy market demands, modern labor needs, and contribute to the nation's economic development.

Importance of Quality and Relevance in TVET

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Sustainable TVET Initiatives in Myanmar

There are a large number of private providers of non-government TVET programmes being implemented across the country, while various types of informal training are offered by private sector companies and NGOs. This pattern of diversified government provision of TVET, while not uncommon throughout Asia, provides challenges in terms of coordination, oversight and quality assurance of the national TVET system.

Public-Private Partnerships

Successful collaborations between TVET institutions and industry partners, for example, curriculum development and updates in cooperation with industries, study visits and internship training programs for students, training of teachers from schools and training of employees from industries at TVET institutes.

Infrastructure Development

The establishment and enhancement of modern TVET facilities and resources in 104 TVET institutes.

Curriculum Reform

Great efforts to align TVET curriculum with industry demands and technological advancements, especially in GTHS curriculum reform aligned with local industry needs, and GTI Curriculum Reform and B.Tech Curriculum Development in line with Accreditation Guidelines with Myanmar Engineering Council and relevant Accords of International Engineering Alliance.

International Cooperation

Successful partnerships with international development partners in promoting the TVET sector, including training of TVET leaders and teachers, integrating IR 4.0 technologies into the TVET teaching and learning, etc. The Department of TVET is collaborating and cooperating with Governments and Developed Partners for TVET Development at all levels. The main collaborated projects are as follows:

i. Collaborated with Singapore Government: Singapore-Myanmar Vocational Training Institute;
ii. Collaborated with Japan Government: Japan-Myanmar Aung San Vocational Training Institute;
iii. Collaborated with Korea Government: Korea-Myanmar TVET Teachers Training Institute;
iv. Collaborated with Sea-Lion and its Global Partners: School of Industrial and Training Education;
v. Collaborated with Germany GIZ for Technical Assistant for TVET Personnel;
vi. Collaborated with Swisscontact, ADB, ADRA, ACTED and OVEC for Competence-Based Short Courses according to regional needs; and
vii. Collaborated with CPSC, UNESCO-UNEVOC, SEAMEO VOCTECH for professional development and skills development

Best Practices in Enhancing the Quality of TVET

In Myanmar, the TVET sector is appropriately structured to deliver services at a level and standard that meets the needs of a modern economy and society. Technical and Vocational Education and Training is a solution for the skills gap. The Law on Technical and Vocational Education and Training (TVET) regulates overall objectives of the technical and vocational education and training system which is to train human resources for some specific sectors. Teachers or Instructors should be well-trained and capable of the jobs in their respective field taking responsibility with their career and being creative, providing high quality TVET teaching and learning services and creating jobs or moving up to higher education.

Although Professional Development (PD) is provided by DTVET to develop education policies to continue improving education and training in the TVET sector, the teachers

in Technical Institutes and High Schools need to develop their capacity for competent knowledge and pedagogy to compromise the quality of education and skills development. That's why DTVET is charged with implementing teacher professional development as well as monitoring and evaluation of the professional development of educators to improve learner achievement.

For the teachers' skills Development, DTVET organizes further training courses to improve practical skills for TVET teachers with the aim to make the teachers meet the skill standards. Besides, DTVET also provides vocational pedagogy programmes for TVET teachers, further pedagogy and didactics training programmes on topics of developing integrated teaching plan, competency based training and training on new technologies for TVET teachers. Pre-service training programmes are conducted in TVET Teacher Training College-TTTC (Baelin) while time-based curricular as well as in-service training programmes are structured in modules.

Best Practices in Enhancing the Relevance of TVET

The Department of TVET is now implementing the curriculum reforms for the GTHS 3-years certificate program based on industrial needs and the new KG+12 system, for AGTI 3-years Diploma Programs according to criteria and standards of Dublin Accord and 2020 Engineering Technician Programme Accreditation Manual enacted by the Engineering Education Accreditation Committee (EEAC) of the Myanmar Engineering Council. The B.Tech Program (new program of DTVET) aims to produce technologists according to the set criteria and standards of the Sydney Accord and the 2020 Engineering Technologist Programme Accreditation Manual enacted by EEAC.

Key Challenges of the TVET Sector in Myanmar

The TVET system requires multiple pathways for youth as there were few interdisciplinary courses to enable access to formal and short courses. There were also limited competency-based training opportunities in many skill areas, especially for youth living in rural and remote areas. It is necessary to make sure that available TVET courses should be aligned with local needs. A proper quality assurance system needs to be designed to develop performance criteria and to intensively improve the curricula intensively. Efforts to accredit the courses offered by the private sector are weak. Therefore, employers had less reliability in TVET graduates.

In addition, to strengthen TVET management and coordination, a more cohesive policy framework that covers the entire TVET sector is needed. There is limited cooperation between TVET institutes and the private sector. Capacities of TVET teachers and managers were weak and needed improvement.

The Way Forward for Promoting Sustainable TVET Advancement

To address these challenges and attain the objectives set for quality TVET education in Myanmar, the Five -Year TVET Plan, Strategy, and Component (2022-2023 to 2026-2027) of DTVET outlines seven pillars and 25 strategies for the development of the TVET sector. Notably, Pillar 2 focuses on teaching and learning, with a management strategy aimed at establishing industrial cooperation and public-private partnerships (PPPs) to enhance the accessibility and quality of TVET services. However, effective management

of industrial cooperation, public relations, and partnerships poses a challenge to TVET leadership and management.

The implementation of industrial cooperation and partnerships for sustainable development, TVET institutions have an industrial coordination team to ensure industrial linkage strategies and objectives are set, implemented and evaluated.

Conclusion

In conclusion, quality and relevance are crucial factors in ensuring effective and impactful vocational education and training. Quality and relevant training can empower every learner with new skills and opportunities to succeed in their future careers. Strengthening partnerships between governments, educational institutions, industries, and communities is playing a key role in promoting a sustainable TVET system in Myanmar.

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Unique Issues and Challenges in Promoting or Developing TVET in Nepal

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Introduction

Nepal, a federal democratic nation characterized by geographical, multicultural, and socio-economic diversity, boasts a population of 29.1 million according to the 2021 census. This populace comprises 125 distinct caste and ethnic groups, collectively speaking 123 different languages (CBS, 2021). Positioned between India and China, Nepal spans an area of 147,181 sq. km. The country showcases remarkable geophysical and climatic variations, ranging from plains at 60 meters above sea level to the towering Mt. Everest, the world's highest peak at 8,849 meters. The climate transitions from tropical in the south to extremely temperate in the north, featuring numerous majestic snow-covered peaks. Unfortunately, Nepal has struggled to harness this multi-dimensional diversity as a catalyst for national development. Instead, these diversities have given rise to disparate access to services and opportunities, contributing to inequalities based on geographical location, caste/ethnicity, and gender.

Income disparity in Nepal is notably high, with an annual per capita income of US$1,381. The projected economic growth rate for the current fiscal year stands at 5.84 percent, a decrease from the previous three years' average growth rate of 7.3 percent (MoF, 2022). Multidimensional poverty affects approximately 17.4 percent of the population (NPC, 2021).

According to the Nepal Labor Force Survey 2017/18, the employment-to-population ratio is 34.2 percent, while the labor force participation rate is 38.5 percent. Nevertheless, the overall employment rate is reported at 88.6 percent (CBS, 2019).

Despite the high employment rate, the labor underutilization rate remains high at 39.3 percent. Main development challenges in Nepal include poverty, unemployment, and the low levels of education and skills among the workforce. The majority of the unskilled workforce faces difficulties in securing productive employment both within the country and overseas due, among other reasons, to a lack of necessary skills.

In response to this situation, the Government of Nepal initiated various technical and vocational education and training (TVET) programs since the 1960s. However, the graduates produced were not as skilled as expected by labor markets, leading to employers

hesitating to hire such TVET graduates. Consequently, the Council for Technical Education and Vocational Training (CTEVT) was established as the apex institution to facilitate the growth of Nepal's Technical and Vocational Education and Training (TVET) sector.

CTEVT aims to generate technical human resources at all levels in accordance with labor market demands. It achieves this by coordinating with various TVET-providing agencies in the nation and certifying the skills acquired by individuals, both informally and formally. Since its inception, CTEVT has offered short-term vocational training programs ranging from 160 to 1696 hours, including 24-month apprenticeship programs, 18-month pre-diploma programs, and three-year diploma programs. Additionally, GON has developed the National Qualification Framework (NQF) and National Vocational Qualification Framework (NVQF), which have been approved by the government of Nepal for implementation (CTEVT, 2022).

The Government of Nepal envisions achieving rapid, sustainable, and employment-oriented economic growth in line with its 15th Five-Year Plan. A key aspect of sustainable development is the transfer, acquisition, creation, and adaptation of information, knowledge, skills, and values. The Sustainable Development Goals (SDGs) emphasize the need for access to high-quality training and reasonably priced technical, vocational, and tertiary education, including university education. By 2030, the SDGs aspire to equip more young people and adults with the necessary skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship (NEF, 2022). CTEVT is dedicated to achieving these 2030 goals, aligning with the national objectives.

Present Situation of TVET

The current status of TVET in Nepal reveals a total of 1,106 institutes offering CTEVT courses. These include 65 constituent polytechnics, 429 affiliated private institutes, 636 community schools providing TVET programs, and 52 partnering institutes. Furthermore, CTEVT has developed curricula for 274 short-term training, 49 diploma, 33 pre-diploma, and 9 professional courses in engineering, agriculture, health, hospitality, and other sectors (CTEVT, 2023).

Recognizing the pivotal role of basic human competencies—attitude, skills, and knowledge—in strengthening a country's economy and development, Nepal has long sought to enhance the skills of its population for a resilient and growing economy. However, despite these initiatives, the expected results have not been fully realized. The country faces a growing youth population that has received formal education but lacks the practical skills demanded by the job market.

The present status of skills and employment levels in Nepal is unsatisfactory, with a notable mismatch between skills and jobs. Inadequate skill attainment among young people, particularly those in low-income nations like Nepal, contributes to this discrepancy. According to the National Labour Force Survey 2017/18, 47% of Nepal's working-age population falls within the 15 to 34-year age group. However, the unemployment rates within the 15 to 24-year and 25 to 34-year age groups are 21.4% and 12.7%, respectively (CBS, 2019).

The Nepal Labour Migration Report indicates that 59% of new migrant workers took up unskilled jobs in destination countries during the fiscal year 2018/19. However, analyzing the mode of obtaining labor approval for Nepalese migrant workers, the report reveals a distribution of 53.7% low-skilled, 38.7% skilled, 7.4% semi-skilled, and 0.1% professional workers (MoLESS, 2020). Consequently, Nepal has become a significant exporter of low and unskilled workers, leading to low earnings due to a lack of appropriate skills. Despite foreign remittances becoming a crucial income source for both the national and household economies, many Nepali migrant workers find themselves engaged in 3D (dirty, dangerous, and difficult) jobs in highly unfavorable work environments, resulting in serious health and safety issues. These stories underscore the high social and economic costs associated with foreign work migration.

The skills and jobs mismatch in Nepal does not imply a lack of appropriate institutions offering skills and knowledge for the young population. However, while some young people do not typically choose technical schools, those who do attend often struggle to meet the demands of the market.

Despite the government of Nepal allocating budgets and programs for the promotion of TVET annually, the budget for TVET in the current fiscal year represents only 4.17 percent of the total education sector budget. Nonetheless, the government intends to advance the "Education with Skill Program" to encourage employment and production through skilled and educated labor.

TVET Issues and Strategies

The Ministry of Education, Science, and Technology (MoEST) has introduced the National TVET Strategic Plan (10 years) with a vision that envisions CTEVT as the National Quality Assurance Authority (NQAA). Recognizing the significance of TVET and its impact on the national economy, the Government of Nepal has emphasized increasing access to TVET at all 753 local levels. It has prioritized and committed to achieving 70 percent access to technical education and vocational training by 2030.

The four major components of TVET are equity and access, Quality and Relevance, Coherence and Transferability, Governance and Management, along with an emphasis on the linkage between industry and institutes. Despite the absence of the TVET act as per the federal context, CTEVT has taken steps to decentralize TVET into provinces and local levels, expanding its offices at the provincial level since the promulgation of the constitution in 2015 AD.

CTEVT has encouraged employers to take ownership of TVET by actively involving them in the curriculum value chain. The importance of employers is further underscored by their leading role in sector skill committees, with over 90% employer involvement (NSTB, 2023).

The limited attraction of youths to TVET is attributed to social stigma, considering it as a secondary form of education, and a lack of clarity in the career path within the TVET stream. The ongoing implementation of the National Vocational Qualification Framework/System (NVQF/S) is expected to pave the way for a clearer career ladder for TVET graduates.

Ensuring the quality and relevance of TVET is a priority for CTEVT. In addition to government initiatives, CTEVT has focused on quality assurance of TVET programs through its Strategic Plan 2020-2024. Implementation of the National Vocational Qualification System (NVQS) in the country is a key strategy to enhance the mobility of TVET graduates. Various major activities have been initiated to uphold and implement these issues, aligning with the goal of ensuring the mobility and effectiveness of TVET graduates.

- Operationalizing Human Resource Development (HRD) through the implementation of Human Resource (HR) Plan;
- Enhancing the quality of TVET institutions and programs through the implementation of Quality Assurance Systems (QAS);
- Accelerating the implementation of the National Vocational Qualification Framework/System (NVQF/S) in accordance with the developed roadmap;
- Preparation of a Guiding Manual for better understanding of the National Qualification Framework (NQF) and National Vocational Qualification Framework (NVQF) system;
- Continuing the accreditation and strengthening of Skill Assessment Centers;
- Development of a Credit and Credit Transfer System Manual;
- Implementation of Recognition of Prior Learning (RPL) in provinces;
- Functioning of five Sector Skill Committees (SSC) in Construction, Hospitality, Automobile, IT, and Agriculture sectors;
- Development of National Competency Standards (NCS) for Unit Certification and NVQF levels 1-5 Competency Assessment and Certification;
- Initiation of the TVET Teacher Licensing process;
- Ongoing development and revision of Competency-based Curricula;
- Implementation and planned scaling up of Dual-VET (Vocational Education and Training) Apprenticeship and On-the-Job Training (OJT) programs; and
- Initiation of institutional capacity strengthening for the assessment/examination system

TVET Challenges

Currently, the discourse on the mismatch between workforce demand and supply in both domestic and foreign employment markets is a pressing issue. On the flip side, resources and TVET providers are fragmented, placing more emphasis on quantity over quality. Such practices are widening the gap between workforce demand and supply. Additionally, more than twelve ministries are involved in delivering TVET programs, yet there is a lack of uniformity in curriculum and training delivery modalities. The absence of an effective Labor Market Information System (LMIS) is another challenge in ensuring that TVET is demand-driven.

Although CTEVT offers a wide range of TVET programs, enrollment in these programs falls short of expectations. The intake in pre-diploma and diploma courses is decreasing compared to the enrollment capacity. Despite a demand for technical human resources in the market, trainees are less inclined to enroll in these courses, which could equip them with the necessary skills for jobs. In this context, improving the quality of widely expanded TVET institutions is a significant challenge. Similarly, the unavailability of the federal TVET Act is impeding the effective implementation of the NVQF/S in the country.

Recommendations

The ongoing challenge for TVET institutions is to keep pace with changing market needs, evolving technology, and the requirements of the current human resource landscape. A robust and well-thought-out TVET system is crucial for boosting productivity and creating employment opportunities. To attract young people and ensure that the courses and certifications offered are both valid and well-recognized by businesses and industries, TVET apex institutions like CTEVT need to focus on rebranding their qualifications.

Moreover, as CTEVT collaborates with private sector associations and federations such as the Federation of Nepalese Chambers of Commerce and Industries (FNCCI), the Confederation of Nepali Industries (CNI), and the Nepalese Chamber of Commerce (NCC) in various aspects, coordination among these bodies is essential. This coordination can leverage partnerships, collectively aiding individuals and the economy in identifying evident demand and supply gaps within the labor market and devising collaborative solutions. Strengthening Sector Skill Committees (SSC) is crucial for narrowing down this demand and supply gap. Capacity enhancement of SSC members is highly required, and international institutions like CPSC can contribute significantly in this regard.

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Recognition of Formal, Informal, and Non-Formal Lifelong Learning Pathways through National Vocational Qualification Framework (NVQF) in Sri Lanka

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Introduction

The Technical and Vocational Education and Training (TVET) system in Sri Lanka evolved from ancient times where skills were taught by the elder generation to the younger generation to ensure regular supply of skilled artisans to the society. Sri Lanka had a very high standard of skills in construction, crafts, architecture and hydraulic technology from its ancient time. Formal TVET, had begun in 1893 with the establishment of the first Technical College at Colombo to train skilled workers needed for the development of physical infrastructure such as the laying of railway lines and the construction of roads etc. under the colonial administration. After its independence, government attention was given to the development of skills in order to achieve the development objectives of the country. Accordingly, action was taken to establish a network of technical colleges and other vocational training institutes. In the 1990s, the Tertiary and Vocational Education Commission (TVEC), was established to regulate technical and vocational education in Sri Lanka. Under the TVET reform process National Vocational Qualification Framework (NVQF) was established as Sri Lanka's first qualification framework unifying a scattered and complicated system of qualifications in 2004.

The NVQ Framework

The National Vocational Qualifications Framework makes provisions for a nationally consistent Technical and Vocational Education and Training system in Sri Lanka. The National Vocational Qualifications of Sri Lanka are based on National Competency Standards identified by the industry stakeholders. The Competency Standards include relevant technical and employability competencies. The NVQF consists of seven levels from 1 to 7, starting from certificate, diploma to degree levels which has shown in Figure 1. These levels are well defined in terms of job process complexity, workplace responsibility and learning demand. The NVQF is developed to assist trainees to join and leave the system at different stages with qualifications at different levels. Vertical upward mobility through the system is straightforward. NVQF facilitates lateral entry pathways to promote within

the system at certain levels for those who have work experience in an apprpropriate field. NVQF mainstream other traditional courses through mapping or converting to NVQs with the support of national competency standards (NCS) and competency-based curriculums, which did not exist before 2004 in Sri Lanka. Currently, approximately 500 qualification packages ranging from NVQ 1 to 7 have been developed in Sri Lanka and shared such resources with many South Asian countries, which have benchmarked the Sri Lankan NVQF.

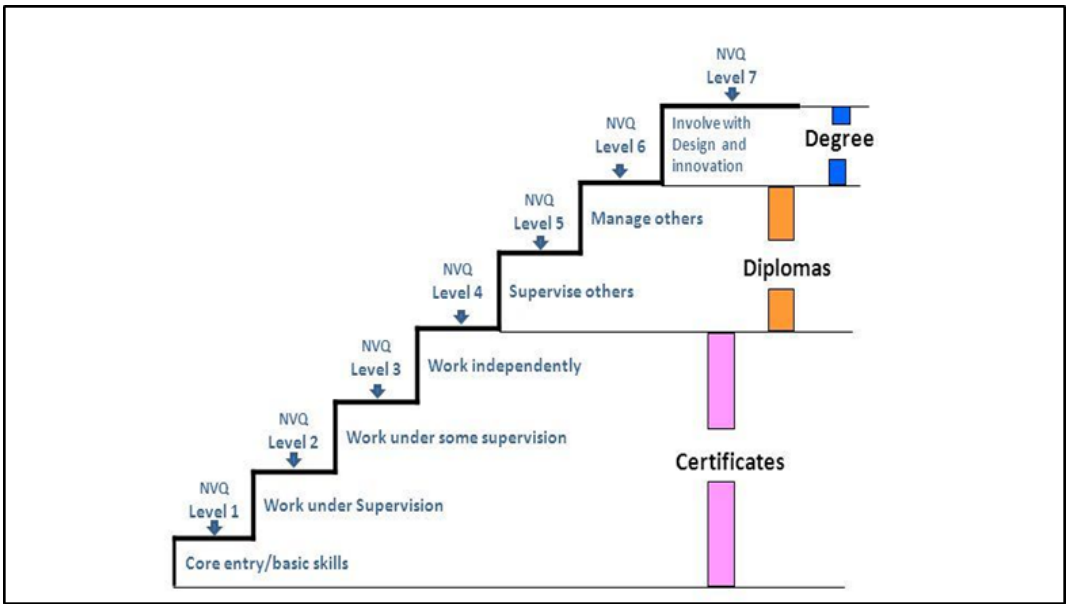

Figure 1: National Vocational Qualification Levels

When considering the TVET delivery network, there are about 1,200 registered institutes, 6,000 registered courses and among them 3,000 accredited courses as of early 2020. About 50% of the centers are from the private sector and the public sector owns more than 600 centers with a TVET system mainly administered by the Ministry of Education, Skills Development and Vocational Training section. All these centers and courses have been quality assured by the apex body, the Tertiary and Vocational Education Commission (TVEC) established in 1990. At the end of 2022, there were more than 600,000 NVQ certificate holders having quality assured qualifications representing NVQF level, which are recognized locally and benchmarked internationally, backed by a robust and coherent quality assurance system.

There are different pathways to achieve National Vocational Qualifications (NVQ) to train, assess and certify new entrants to TVET sector as well as employed persons without any qualification or certification. These pathways facilitate formal, informal and non-formal learning pathways as described in the next few sections.

Competency Based Training (CBT)

Competency Based Training (CBT) is the formal way of TVET delivery and it is a learning model where students must demonstrate the required level of knowledge and skill (competency) on a task prior to advancing to the next task. In Sri Lanka there are about 1200 TVEC registered TVET delivery institutions comprising of large delivery networks such as Vocational Training Authority (VTA), National Apprenticeship and Industrial Training Authority (NAITA), Department of Technical Education and Training (DTET) and Ceylon German Technical Training Institute (CGTTI) etc . These courses are quality assured by TVEC with the compulsory registration, course accreditation, Quality Management Systems (QMS) and routine and random audits. There are about 150,000 – 250,000 students recruited into these institutions and deliver about 3,000 NVQ courses and 3,000 non-NVQ courses in a year. Those who complete training at institutions followed by On the Job Training (OJT) will be issued with NVQ by TVEC where all student information can be verified online using QR code or web site (www.nvq.gov.lk).

Enterprise Based Training (EBT)

Enterprise based training is another way of TVET delivery and it is a learning model through the apprenticeship based training within the industry. After providing basic knowledge students are trained within the industry subject to supervision by the training instructors of NAITA. After the stipulated time for training in the industry assessments are conducted to determine whether or not a candidate can apply skills, knowledge and attitudes identified in national competency standards to the level of performance that is specified in the standards. An online database of EBT centers has been established by TVEC with the support of NAITA and other institutions which conduct enterprise-based training. This database is linked with the automated assessment scheduling system of TVEC.

Recognition of Prior Learning (RPL)

Recognition of Prior Learning (RPL) mode is used to recognize informal learning and award National Vocational Qualifications (NVQs) in the respective occupations. These qualifications are offered after conducting competency based assessment as per the competencies specified in National Competency Standards (NCS). Persons acquired competencies through working as employees in the formal sector and self-employed persons in the formal sector with business registration certificate can apply for NVQ certificate. At the same time self-employed persons without business registration in the informal sector can also apply for NVQ certificates through RPL mode. A three and half-year working experience is required for NVQ Level 3 and four years working experience is required for NVQ Level 4. The NVQF provides RPL only up to NVQ level 4. (TVEC Circular NVQ 02/2021). For NVQ Level 4 the RPL assessments should be done by a panel of assessors consisting of two assessors. The assessments should be conducted as per the criteria, guidelines and methodology specified by the TVEC.

Mature Candidate Route

This is an alternative path to obtain NVQ Level 5 equivalent qualification through their maturity/experience in the relevant sectors and also in the relevant sub sectors with job opportunities available in the job market. Such personnel can be assessed and certified with an NVQ Level 5 equivalent qualification to perform supervisory functions restricted to the relevant sector or sub sector. This scheme of qualification is only valid for employability purposes. The NVQ Level 5 specifies middle level technical employment. Craftsmen with long years of experience who perform supervisory functions in middle level employment could be assessed and certified for the award of NVQ Level 5 qualification which may be useful in their career and employment opportunities. There are four routes to recognize informal learning considering minimum experience as 10 years. (TVEC Circular NVQ 02/2022).

1. A minimum of 10 years' experience including minimum of 3 years supervisory experience in the relevant industry and having NVQ Level 4 certificate in relevant field
2. A minimum of 10 years' experience including minimum of 3 years supervisory experience in the relevant industry and having a Diploma certificate (with a duration of more than 6 months) or any other higher qualification accepted by the TVEC in the relevant field
3. A minimum of 12 years' experience including minimum of 3 years supervisory experience in the relevant industry and having a certificate (with a duration of more than 6 months) accepted by the TVEC in the relevant field
4. A minimum of 15 years' experience including minimum of 3 years supervisory experience in the relevant industry

Flexible Learning Model (FLM)

The objective of the flexible learning model is to open up opportunities for employees to improve their existing skill levels through upskilling or reskilling with dynamics in the global technology in line with the government development plans, the 4th Industrial Revolution (4IR) and labour demand in the market, which promote to build technology based skills among the workforce in the private sector in Sri Lanka.

The employees, who are employed in the private sector organizations, can be trained for upskilling and reskilling under the Flexible Learning modality within accredited training centers. Each and every module in an accredited course could be offered independently as a short term part time modular course. After completion of such small courses, the training center could request TVEC to conduct national assessment by two independent NVQ assessors for requested units and issue a unit certificate under NVQ framework. This qualification is treated as a micro-credential and added to the central NVQ holder database where anyone could verify online. These micro-credentials will support lifelong learning opportunities where a person can keep on earning unit certificates and go for full qualification later as there is no time limitation.

Mapping of Non-Formal Learning or Traditional Courses to Formal Qualifications

Various non-NVQ certificates which have no-recognition with National Vocational Qualifications are mapped to relevant NVQs through a rigorous process by the TVEC. These courses may include traditional courses which existed before establishing the NVQ system, qualifications issued by foreign qualification bodies and apprenticeship certificates obtained through non-formal learning. These courses are evaluated by an expert panel against the relevant NCS and considering evidence such as detailed curriculum, direct and indirect learning hours, practical work performed and quality aspects of learning. After the successful evaluation, respective NVQ level and criteria are published in TVEC web site and candidates could produce the mapped certificates and NVQ equivalent status could be obtained by individuals (TVEC Circular NVQ 05/2021).

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Mat-Chan Business Model: Case Study of a Business Incubator in a TVET Institute in Thailand

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Business Incubators in Thailand's TVET

The direction of developing Thailand's economy is currently focusing more on the local sectors. Aiming at generating income and raising the standard of living of Thai people, small businesses or professional groups are encouraged to gather in order to produce local goods and deliver services using resources that each area possesses. Therefore, it is important to lay the foundation of education, especially an entrepreneurial mindset for the youth, including developing the necessary basic skills and different and diverse aptitudes of the workforce. As well as driving them to have innovative technology and creativity for the value-added business, together with building strong connections and networks among communities.

Since learners as entrepreneurs have diverse needs, challenges, and potential, the Thai government is committed to providing assistance and subsidizing them to commence their small businesses at an early stage. The target group is the younger generation in starting a business. The Thai government has developed and applied the curriculum called the Entrepreneurial mindset. It starts with inspiring and nurturing the entrepreneurial spirit of students. Through learning and experimenting with basic business operations, such as writing a business plan, fundamental accounting knowledge.

The Ministry of Education has therefore established policies and emphasis on education to develop vocational skills and increase competitiveness. And the Vocational Education Commission encourages learners to have creative thinking according to their professional fields, moving forward to commercial, and marketing, and creating a network for opportunities of more widely opened career paths.

Thus, the business incubators of TVET aim at developing entrepreneurial skills for students. The favorable outcome is that young entrepreneurs can monetize while studying. And after graduation, they can potentially become new entrepreneurs. The business incubators in Thailand are located in 77 provinces all embedded in almost all vocational colleges. Their role is to provide entrepreneurial curricula and programs so students can receive professional certification, and establish a counseling center (Start-Up Center) that will promote and develop career entrepreneurs from among vocational students and the general public. The Center is linked with the Office of the Promotion of Non-Formal and Informal Education.

Overall Activities

Under the guidance of a mentor teacher, groups of vocational students learn the curriculum offered by the Vocational Entrepreneurship Incubator Center both online and offline. They also practice business skills and cultivate entrepreneurship. The work schedule has been followed, including the entrepreneurial training exercises that encourage entrepreneurship and allow students the ability to start their own businesses.

Mat-Chan Brand: A Case Study

“Mat-Chan” is the jewelry brand created by students from gemology, marketing, and accounting majors at Chanthaburi Technical College, through the help of the business incubator. Chan comes from the province known as Chanthaburi, and Mat is from Mattress. Inspired by “Chanthaboon mats,” the jewelry is regarded as one of the province’s most distinctive handicrafts. It is specially made so that the threads are very strong and multipurpose. The handmade mat is exquisite and unique because the reed strands are small and round as silk.

Mat-Chan sees the value of materials that can be further developed in the form of earrings. Therefore, Chanthaboon reed mat material has been modernly designed with brass and embellished with artificial diamonds, and gemstones, to enhance the outstanding features and richness of the Mat-Chan earrings. The value of recreating the earrings from local material helps preserve the local wisdom of the Chanthaburi people.

Products

1. Simple Earrings
Simply designed.
Materials used: Brass metal and Chanthaboon mattress
Price 199 Baht

2. Medium Earrings
Simply designed with synthetic diamonds (CZ).
Materials used: Brass metal and Chanthaboon mattress and lab diamonds (CZ)
Price 599 Baht

3. High-end Earrings
Simply designed with added luxurious details.
Materials used: Lab diamonds (CZ), silver, Chanthaboon mattress, gemstones
Price 1,599 Baht

Competitions and Awards

1. Participated in the creative vocational project competition Transform dreams into business 2021 (RRR Award 2021)

2. Won the Smart Start Idea by GSB Startup activity competition under the Micropreneur entrepreneur structure (GSB Micropreneur Academy) 2022, by the Government Savings Bank.

3. Received a royal award. On the occasion of National Youth Day in Arts, culture, communication, and profession. (National Outstanding Children and Youth Group)

4. Educational promotion program for employment (Good Practice)


สำนักงานศึกษาธิการภาค ๙
สำนักงานปลัดกระทรวงศึกษาธิการ
ขอมอบโล่ประกาศเกียรติคุณเพื่อแสดงว่า
วิทยาลัยเทคนิคจันทบุรี
ได้รับรางวัลชนะเลิศระดับภาค
เป็นสถานศึกษามีวิธีปฏิบัติที่ดี (Good Practice)
โครงการส่งเสริมการจัดการศึกษาเพื่อการมีงานทำ
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ศึกษาธิการภาค ๙

CHAPTER II

BEST PRACTICES OF APACC-ACCREDITED INSTITUTIONS TOWARDS A QUALITY-ASSURED TVET

Overview of the Philippine TVET: Responding to the Changing Needs of the Labor Market

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Introduction and Present Situation of TVET and Institution

The Technical Education and Skills Development Authority (TESDA) actively pursues a two-pronged strategy for technical and vocational education and training (TVET) in the Philippines. One is to support global competitiveness and workforce readiness. The other is to contribute to social equity and poverty reduction in delivering services to Filipinos through times of robust growth and even during crises. Anchored in the National Technical Education and Skills Development Plan 2018–2022 and aligned with the Philippine Development Plan 2017–2022, both prongs of the strategy firmly define the roles of TESDA and TVET in nation-building and economic development.

Aside from its main objective of providing tech-vocational training to Filipinos, TESDA also serves another purpose – accreditation of institutions offering technical-vocational courses. To ensure quality education and training is delivered by these institutions, TESDA sets the standards and evaluates the institutions. This way, Filipinos can be assured that they will receive quality education and training from TESDA-accredited schools or institutions.

TVET nowadays is gaining recognition in various international and national priorities for education and development agenda. TVET is considered a source of skills, knowledge, and technology needed to drive productivity in the knowledge-based and transition societies of the 21st century.' There are varying beliefs in TVET's potential contribution in addressing multiple development issues, such as the transition to Fourth Industrial Revolution (4IR), labor mobility and social equity. However, the negative perception towards TVET as a second best or a last resort alternative leading to less prestigious career paths, lower prospects for higher earnings or further education still persists.

Also, despite the growth of TVET in the country due to the reforms in the education sector since the Congressional Commission on Education in 1991, its implementation has been surrounded by pressing concerns such as limited resources, its less favorable impact on employment generation (ADB, 2021) and inclusion of marginalized sectors and increase women's participation which are greatly affected by the economic crisis.

The establishment of the TESDA Women's Center (TWC) in 1998 in sync with TESDA's affirmative action policy of ensuring that women are trained in industrial courses traditionally dominated by men. As of FY 2022 TWC has already trained 14,769 with graduates of 12,141, of which 80% are female and 20% are male.

TWC has contributed a lot in expanding the capabilities of women, not only in developing their skills but also in enhancing the women's expertise and potentials to be productive that will help uplift the lives of Filipino families, communities and the nation as well.

TWC was recognized as a 2008 Silver Awardee by the Asia Pacific Accreditation and Certification Commission (APACC) and Gold in 2018, re-accredited on its 5th cycle last October 3-6, 2023.

In 2019, TWC was selected as one of the three (3) pilot institutions of the United Nations Educational, Scientific and Cultural Organization – International Centre for Technical and Vocational Education and Training (UNESCO-UNEVOC) International Centre Skills for Innovation Hubs (i-hubs) project in the Asia-Pacific, landing among the total ten (10) pilot i-hubs centers around the world.

TWC as GAD Secretariat to the TESDA Gender and Development (GAD) Focal Point System (GFPS) assisted the Agency to attain the 2014 GADtimpala Award as one of the Outstanding Gender-Responsive Government Agencies and 2019 GADtimpala Award for the TESDA - Coca Cola Philippines STAR Program.

Currently, TWC is one of the three pilot institutions of TESDA to undergo the ISO 21001:2018 which focuses on Educational Management System of Education Organizations.

Highlights and Best Practices

Best Practices Adopted by the TESDA Women's Center in Ensuring TVET Graduates' Mobility

Quality Standards: TWC regularly conducts industry consultations and forums to gather relevant information on the skills needed by the industry and to address job and skills mismatch. The Center recognizes the role of the industry in improving the quality of program offerings and curriculum development and through these forums, it aims to foster innovation, collaboration and progress through insightful discussions and exchange of groundbreaking ideas, collectively shaping the future of TVET graduates. Relevant to this, TWC have conducted the Green TVET Forum on November 24, 2022 through the initiative of the Center Advisory Council to meet the key industry partners, government and non-government organizations that exercises Green Practices, Green Jobs and Renewable Energy. The forum serves as the platform to gather relevant inputs from the participants during the round table discussion specifically on the in-demand skills related to green jobs for both women and men TVET, benchmarked green practices of the industry and what can be adopted by TESDA, information on green construction, recycling issues and dispose of materials and deepen appreciation to nature and to the continuous campaign for a green environment.

TWC also forged partnerships with different industry sectors for the past few years specifically on the Tourism Sector, Construction and ICT Sectors to address the need for the emerging skills in those sectors.

Qualifications Framework: To adhere with TESDA's goal to improve the national and regional qualification frameworks to increase portability of qualifications and develop progression pathways for learner and labor mobility and ensure clear pathway for TVET towards lifelong learning and higher education, TWC developed its curriculum for Diploma Program in Electrical Engineering Technology and Hospitality Tourism Management. The Diploma in EET is now in the process for program registration. TWC was also able to register programs under the ICT sector specifically on emerging skills such as Virtual Assistant Services Level II, relative to this, Competency Based Curriculum on Micro credential Courses were developed such as Cloud Accounting with QuickBooks Online Level 3.

Likewise, the training programs under the Tourism Sector, which includes Bartending NC II, Barista NC II, Cookery NC II, Food and Beverage Services NC II and Housekeeping NC II are aligned with the Competency Standards under the ASEAN Competency Standards for Tourism Professionals.

Best Practices Adopted by the Institution

A. Teaching and Learning

- Competency Based Curriculum of all training programs contextualized with 21st Century Skills and adopted the Blended Learning Delivery as early as 2020

B. Research and Development

- Conduct of different types of research including technology research, policy, and action research. Results of the research studies and impact were also recorded through implementation reports

C. Human Resources

- TWC Human Resource Development Plan (2021-2025) was developed, a guiding plan to institutionalize the four (4) core human resource management systems and processes in (1) Recruitment, Selection and Placement; (2) Learning and Development (3) Performance Management, and (4) Rewards and Recognition. The plan is based from the Program for Institutionalization for Meritocracy and Excellence in Human Resource Management (PRIME-HRM) of the TESDA Central Office duly approved by the Civil Service Commission

D. Networking and Linkages

- Total of 29 partners from different sectors (Tourism, Construction, ICT, Business, Higher Education Institutions, Government and Non-Government Organizations). Partnership includes donation of training supplies, materials and equipment, refurbishment of training workshops, development, review,

enhancement and validation of Competency Based Curriculum, and employment opportunities for graduates

- Conducted community outreach programs in different areas in partnership with LGUs and Non-Government Organizations

E. Support to Students

- Regular conduct of Co and Extracurricular Activities (Industry Visit, Skills Competition, Trade Fairs/Exhibits), Lifelong Learning Programs, and Gender and Development Advocacy Programs

- Provision of Student Services Program such as Guidance and Counseling Services, Sports Development Program, Socio-cultural Development Program, Scholarship Programs (Free Training and Assessment with daily allowance and starter tool kits), OJT/Job Placement Programs, Learning Resource Center, Canteen and Catering Services, Innovation Center, Dormitory, Health Services and Day Care Center Services

Challenges and Recommendations

Challenges

- Enterprise-based training (EBT) is not promoted enough, and the issues surrounding it are yet to be resolved. As emphasized during the EDCOM discussions, the EBTs such as Apprenticeship and Dual Training System (DTS), are the most responsive to the needs of industries. While there are laws on apprenticeships, training and internships, the lack of progress in increasing participation in EBT suggests that the right solutions are not being proposed. How to incentivize firms to participate in such training and how it should be financed are some questions that need to be addressed.

- Emphasis is put on the equity objective to the neglect of efficiency objective of TVET. Much focus is given to community-based training. While this should be commended since the primary targets of such programs are the vulnerable groups, there is a need also to pay attention to training in cutting-edge technologies. This training is essential to increasing productivity and addressing the skill needs of the vulnerable but also to respond to the country's economic needs for a highly skilled workforce and higher-value production activities.

- Obtaining employable skills and securing protection from changing labor market needs have encouraged college students and graduates to participate in TVET. To keep up with the rapidly changing demands of the labor market, it appears that college graduates and college students sought to enroll in TVET to gain employable skills. This development implies that a college diploma might no longer be a sufficient advantage in employment and that college-educated workers are fully aware of the importance of acquiring new skills.

Recommendations

- Promote responsiveness of TVET to industry needs. First, EBT should be promoted given its demand-driven nature, making it the preferred mode of delivery among industries and a solution to the job-skill mismatch in the labor market (Orbeta and Paqueo 2022). At present, EBT is not attractive enough for the private sector, even if this mode of delivery responds to their skills requirements. The low proportion of enrollment and graduates in EBT means that it must be rigorously promoted, and the issues surrounding it must be addressed. It is important to examine the EBT and its respective issues, starting with how EBT programs should be financed to increase incentives for the training providers. For example, ADB (2021) recommends that TESDA's efforts in expanding EBT be intensified by (1) enhancing the training modality of EBT to be aligned with Industry 4.0, (2) conducting a thorough review of the Dual Training System Act of 1994 (DTS Law) and the Apprenticeship Bill, and (3) exploring means to incentivize private sector's participation to increase the number of EBT graduates.

- Second, 21st-century (or transversal) skills should be integrated into the TVET curriculum. The World Economic Forum (2020) argues that transversal skills are essential for individuals and organizations to thrive in the current and future economy. These skills are becoming more important than traditional technical skills in many industries (Manyika et al. 2017). Also, Mahmud and Wong (2022) stressed the importance of 21st-century skills for better employability, wherein among the most important skills for employability are communication, critical thinking, and interpersonal skills.

- Third, TESDA needs to develop its capacity for regulating and testing training modalities to entice private sector participation in TVET programs (Orbeta and Paqueo 2022). It needs to enhance its regulatory functions, which have become complex over time due to rapid technological developments that have substantial impacts on the labor market (Orbeta and Paqueo 2022). Organizational reforms in TESDA must also be put in place, including establishing a public financial management system and further strengthening its quality assurance system (ADB 2021).

- Fourth, a labor market information system for TVET must be developed to collect timely and relevant data that could help TESDA identify current in-demand skills and anticipate future skills needs. The present Labor Force Survey does not fully capture the extent of TVET as it only includes those who took their training in technical and vocational institutions and does not cover those from enterprise- and community-based training (Orbeta and Paqueo 2022).

- Fifth, it is important to monitor the training progress of TVET learners. This will help in identifying skills that are stackable for employment. Monitoring will help understand how learners perceive their employability through their enrollment and participation in different TVET training programs.

- The twin objectives of TVET on equity and efficiency must be balanced without sacrificing the other. Cutting-edge technology skills, as well as digital skills, should be consistently promoted. Forging a partnership with the private sector could be a good initiative to promote said skills, especially in the case of EBT, wherein skills acquired from this training are needed by the private sector. Additionally, it is important to closely monitor the implementation of community-based training, given its significant representation, to ensure training quality (Orbeta and Paqueo 2022).

- Develop capacity for flexible delivery of TVET while recognizing the differing capacities of potential TVET clients. Learning and training, including access to TVET, should not be impeded by emergencies or crises experienced during the COVID-19 pandemic. Hence, alternative modes of delivery, such as flexible learning modalities, must be developed (e.g., TESDA Online Program) to mitigate the disruptions to learning and training. Further, harnessing digital technologies to develop new approaches in the assessment and certification of TVET trainees should be considered (KRIVET 2020). Alternative delivery methods require building the capacity of teachers and trainers in developing content appropriate for these platforms. Due consideration should also be given to the capacities of intended clients. For instance, Orbeta et al. (2021) found that limited financial resources, information, and access to the internet for online learning prevent the youth from participating in TVET. Therefore, flexible delivery of TVET will only be successful if both the effective delivery in alternative platforms and the equitable access to learning resources are met.

- Promote the enrollment of females and disadvantaged groups in courses leading to high-productivity employment. TVET enrollment remains highly segregated, with females clustering in programs leading to lower- productivity work.

- Expanding access and promoting TVET enrollment, by addressing the TVET image problem, can be achieved through information provision, using innovative approaches. For instance, organizing visits of high school teachers to vocational training colleges to familiarize them with the facilities and learning environments, and help them promote TVET as not only viable but desirable options among their students.

- Increasing awareness among education sector stakeholders and the wider population of pathways and transitions from secondary education to TVET, and from TVET to higher education and to the labor market with career guidance at all levels, should also go a long way in promoting access to TVET for target groups.

Conclusion

Enrollment and graduates of TVET had been rising over the years, but this was hampered by the COVID-10 pandemic. Community-based training is popularly sought, while participation in enterprise-based training remains low. The value of TVET for upskilling and retooling, not just employment, is increasingly recognized by TVET clients.

Issues and concerns surround the regulation and implementation of TVET. There is greater focus on equity than obtaining TVET's goal of producing graduates equipped with skills responsive to the rapidly changing demand of the labor market.

The policy objectives of TVET can be achieved by (1) promoting its responsiveness to industry needs, (2) balancing its equity and efficiency objectives without sacrificing the other, and (3) developing training providers' capacity for flexible delivery while recognizing the different capacities of TVET clients.

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Catalyzing Excellence: Don Bosco TVET as a Benchmark and Premier Provider of Technical Education in the Philippines

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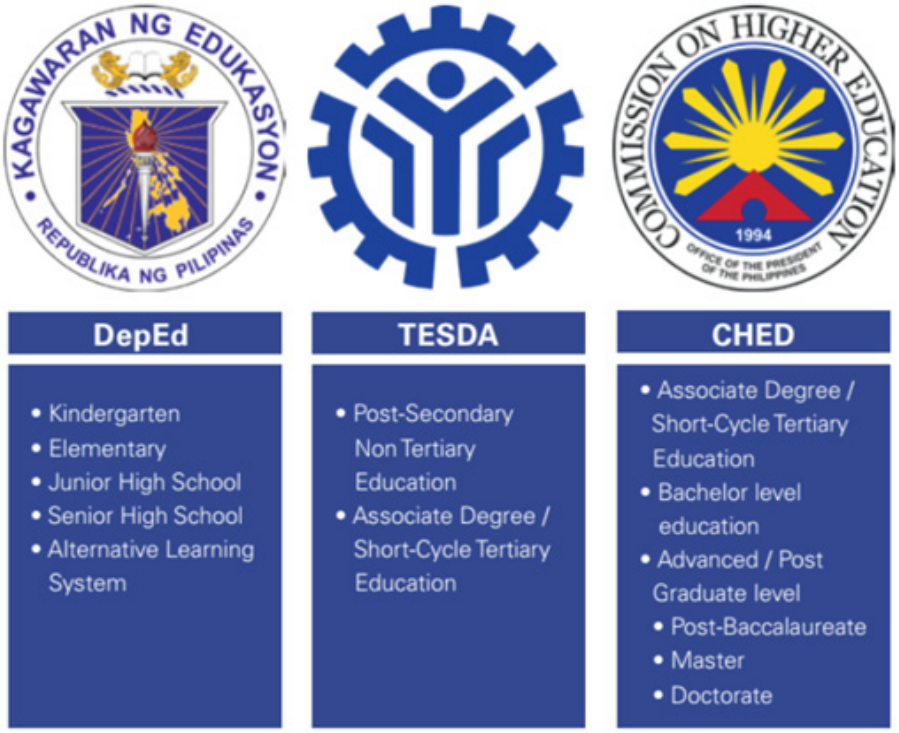
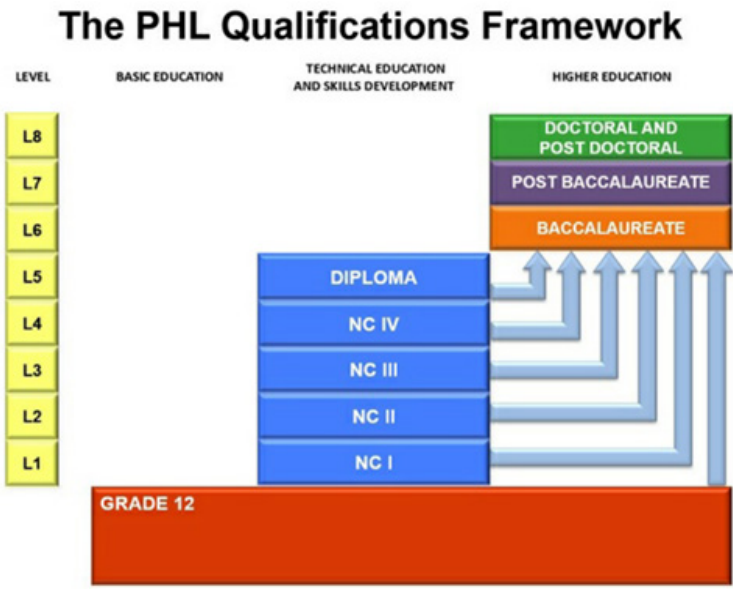
Introduction

In the Philippines, the institutional framework of TVET is diverse, encompassing numerous government agencies, educational institutions, and industry entities. The Technical Education and Skills Development Authority (TESDA) is the principal coordinating agency in charge of developing policies, implementing programs, and assuring TVET delivery quality. Collaborations with industry partners, such as Public-Private Partnerships (PPPs), have become critical to connecting TVET curricula with changing job market needs (Wu et al., 2019).



Philippine Education Government Agencies for Education
Source: https://tinyurl.com/yc253b2n

In 2017, the Philippine Qualifications Framework (PQF) Act was passed. The PQF defines educational qualification levels and establishes qualification result requirements. This national system ensures the comparability of qualification development, recognition, and certification based on standards of knowledge, skills, and values gained in various ways and techniques by the country's learners and workers. (UNEVOC brazil, 2018).



Philippine Qualification Framework
Source: https://pqf.gov.ph/Home/Details/7

In the Philippines, there are four forms of TVET: school-based TVET, center-based TVET, community-based TVET, and enterprise-based TVET. TVET institutions can be divided into two types based on their funding sources: public TVET institutions and commercial TVET institutions. TVET programs are grouped into three types based on their length of education: short-term (less than three months), mid-term (3-9 months), and long-term (1-3 years). By July 2015, TESDA had certified 4,609 TVET institutions (including school-based and center-based TVET institutions), offering 20,329 TVET programs (Wu et al., 2019).

School-based TVET	TESDA Schools Private Technical/ Vocational Schools Institutions of Higher Education
Center-based TVET	TESDA Regional Training Centers TESDA Provincial Training Centers Other Government Agencies
Community-based TVET	Community Training and Employment Centers Non-Government Organizations Local Government Units Government Agency Projects
Enterprise-based TVET	Apprenticeship Workplace-based Training Programs Dual Training Programs

In 2022, there will be 1,260,244 enrollees and 1,231,284 graduates, with a completion rate of 97.70%. The overall number of enrollees and graduates has increased by 1.62% and 6.40%, respectively, compared to the 2021 output. The completion rate increased by 4.7%. NCR has the highest proportion of enrollment (9.68%), followed by Region III (9.20%), and BARMM has the lowest part of overall enrollment (1.58%) for the year. Similarly, NCR has the highest proportion of graduates (9.40%), whereas BARMM has the lowest proportion (1.61%). (UNEVOC, 2019). In terms of meeting regional targets for the number of graduates, all regions have exceeded their targets by more than 100%. Agriculture, Forestry, and Fishery (18.55%), Tourism [Hotel and Restaurant] (15.67%), and Automotive and Land Transportation (9.77%) are the top three performing industries in terms of graduate share, whereas Pyrotechnics and Furniture and Fixtures received the lowest training output (Tâm et al., 2022).

Don Bosco Technical Institute of Makati or simply "Don Bosco Makati." is a private Catholic educational institution owned and operated by the Salesians of Don Bosco (SDB). Its campus is located at Chino Roces Avenue Makati, Metro Manila, Philippines. In January 1954, the cornerstone of Don Bosco Makati was laid down. TVET (Technical-Vocational Education and Training) Center is a home and school for the poor and out of school youth where they learn various technical skills of their choice to gain decent employment. The center is managed and run by the Priest and Brothers of the Salesians of Don Bosco. The course can be done in one year. The first eight months of training are spent in the center to build the trainees' theoretical foundation (30%) and their hands-on training experience (70%). On the ninth month, all trainees are assigned for a 4-month On-the-job training in selected companies to advance their technical skills and firm up their attitude as a means of preparing them for the exciting world of work. This orientation scheme initiates the graduates to an industrial setting that demands hard work, quality performance and proper work values. Today, about 800 to 900 underprivileged youth are being trained in the various courses and are employed in Don Bosco's partner industries, both locally and abroad. The mission of the Don Bosco educational institutions goes on as they endeavor to form good Christians and upright citizens of the Philippines and a globally competitive and adaptive workforce.

TVET serves a critical role in developing a trained and competent workforce, which is critical for driving economic development and industrial progress. The Don Bosco Technical Institute of Makati TVET Center stands out as a paragon of excellence in the Philippines among institutions that have consistently excelled in this domain. Don Bosco TVET Center, known for its commitment to offering practical and industry-relevant education, offers a wide range of programs geared to suit the changing needs of the job market. Specialized 12-month programs, each intended to foster expertise in certain technological disciplines, are at the forefront of its educational offerings. This study focuses on four main programs at Don Bosco TVET Center: Automobile Mechanic, Fitter Machinist, Electromechanical Technology, and Refrigeration and Air Conditioning. These programs exemplify the institute's commitment to providing students with practical skills, theoretical knowledge, and a comprehensive grasp of their respective subjects.

By examining the curriculum design, practical training methodologies, and the impact of these programs on the careers of graduates, this study aims to provide valuable insights into how Don Bosco TVET Center's 12-month courses serve as a benchmark for technical education in the country. Through this exploration, we endeavor to contribute to the broader discourse on the role of specialized vocational training institutions in addressing

the skills gap and fostering a workforce ready for the challenges of the contemporary industrial landscape. The Automobile Mechanic Course digs into automotive systems, preparing students to handle the complexities of modern cars. The Fitter Machinist Course sharpens precision engineering abilities by emphasizing the importance of accuracy and attention to detail in machining and welding procedures. Meanwhile, the Electromechanical Technology Course combines electrical and mechanical principles to promote a comprehensive grasp of electromechanical systems. Finally, the Refrigeration and Air Conditioning Course addresses the growing demand for qualified experts in climate control technology, ensuring graduates are knowledgeable about the design, installation, and maintenance of these critical systems.

Highlights and Best Practices

Vision Statement: Don Bosco Makati TVET Center aspires to be a benchmark and premier provider of Technical-Vocational education, grounded in the pedagogical teachings of St. John Bosco. The vision encapsulates the commitment to excellence, setting a standard for Technical-Vocational education while upholding the values and principles inspired by the teachings of St. John Bosco. By positioning itself as a benchmark institution, Don Bosco Makati TVET Center aims to be a model for others to emulate, contributing to the advancement of technical and vocational education.

Mission Statement: Don Bosco Makati TVET Center is dedicated to forming students within the Salesian educational system. The mission is to cultivate in students the qualities of good Christians and upright citizens, emphasizing the holistic development of individuals beyond their technical skills. This commitment to character development aligns with the Salesian tradition, fostering a sense of ethical responsibility and social awareness. The mission extends to the development and training of students to be highly qualified and globally competitive. Don Bosco Makati TVET Center recognizes the importance of preparing students for the challenges of a globalized workforce. This involves providing not only technical skills but also instilling a mindset of continuous learning, adaptability,

and innovation to ensure graduates are well-positioned for success in the international job market. A core component of the mission is the commitment to social responsibility by providing quality technical education to the poor and underprivileged youth. Don Bosco Makati TVET Center aims to bridge socio-economic gaps by offering educational opportunities that empower disadvantaged youth for gainful employment. This reflects a dedication to inclusivity and addressing the needs of marginalized communities through education and skills development.

The vision and mission statements of Don Bosco Makati TVET Center underscore its commitment to excellence, holistic education, global competitiveness, and social responsibility. By integrating the Salesian educational system into its mission, the institution aims to produce graduates who not only excel in their technical fields but also embody the values of good citizenship and ethical conduct.

Vision-Mission of Don Bosco Makati-TVET Center
Source: www.donboscomakati.edu.ph

The Don Bosco Makati TVET Center is a distinguished institution known for its unwavering commitment to providing high-quality technical-vocational education. In line with its mission to be a benchmark and premier provider, the TVET Center actively engages in accreditation and certification processes to ensure adherence to established standards and to continuously enhance the quality of its programs.

Accreditations and Certifications

Don Bosco Makati TVET Center is a TESDA Registered Programs and Assessment Center. Its programs are aligned with TESDA's standards. The center's TESDA Registered programs and assessment center status attest to the institution's compliance with national technical-vocational education benchmarks. This accreditation assures that students obtain education that meets industry standards and allows them to enter the job with ease.

Philippine Council for NGO Certification (PCNC): The TVET Center's recognition by the Philippine Council for NGO Certification (PCNC) demonstrates its dedication to ethical

and transparent operations. PCNC certification validates the institution's adherence to governance norms, ensuring that it functions as a responsible and accountable non-governmental organization.

Asia Pacific Accreditation and Certification Commission Award (Silver): The TVET Center's receipt of the Asia Pacific Accreditation and Certification Commission Award (Silver) demonstrates its regional recognition for technical-vocational education quality. This distinguished award recognizes the institution's dedication to global competitiveness, innovation, and program delivery that meets international standards.

The Don Bosco Makati TVET Center is now in the process of attaining *ISO 45001:2018* certification, which focuses on occupational health and safety management systems. This certification validates the TVET Center's commitment to providing a secure and healthy learning and working environment. The ISO 45001:2018 accreditation will serve as further evidence of the institution's dedication to the well-being of its students and employees.

Future Project: 3-Year Diploma Program in 2024: The Center is planning to launch a 3-year Diploma program in 2024. This program exemplifies the institution's ongoing efforts to provide comprehensive and in-depth technical-vocational education that is in line with changing industry expectations. The launch of this program shows the TVET Center's forward-thinking educational approach and dedication to creating highly competent graduates.

Accreditation and Certification of Don Bosco Makati-TVET Center
Source: www.donboscomakati.edu.ph

Strong Industry Partnership and Linkages

The TVET Center is a shining example of excellence in technical and vocational education, owing to its best practices and strategic approaches to building strong industry links and partnerships. It continues to prepare students for successful and influential careers in a variety of industries through creative scholarship initiatives, supervised industrial learning programs, and dynamic curriculum design and development. The Center's commitment to remaining at the forefront of industry trends guarantees that its graduates are well-equipped to tackle the difficulties of the modern workforce as the global landscape of work continues to shift.

Conclusion

Finally, the Don Bosco Makati TVET Center unquestionably serves as a model and outstanding provider of technical education in the Philippines. The institution's dedication to excellence is reflected in its diverse approach, which includes quality management, strong industry relationships, and holistic student formation. The success of Don Bosco Makati TVET Center is based on quality management. The institution maintains strict standards in curriculum design, faculty selection, and program implementation to ensure that students obtain the best education possible. The center maintains an outstanding culture that pervades its academic programs by constantly analyzing and refining its operations. It differentiates itself as a forward-thinking institution through the intentional cultivation of strong industry partnerships. The emphasis on supervised industry learning not only improves students' technical competencies, but also ensures that their education is directly connected with workforce needs. The ability of the center to form significant relationships with industry leaders creates a symbiotic relationship in which graduates are not only accomplished professionals but also valuable contributors to their respective disciplines. A strong emphasis on comprehensive student development in addition to technical proficiency is likewise offered. The institution values character development, ethical principles, and a strong sense of social duty. By incorporating these components into its educational framework, the center develops graduates who are not only technically competent but also well-rounded people ready to contribute positively to society. Its status as a model and best supplier of technical education in the Philippines is well-deserved. The institution's combination of quality administration, strong industry relationships, and holistic student development places it at the forefront of technical education, creating a model for others to follow. The center's heritage as a beacon of excellence remains unwavering as it evolves and adapts to the ever-changing world of education and industry.

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Trends, Challenges, and Innovations of Jacobo Z. Gonzales Memorial School of Arts and Trades for a Quality-Assured TVET within the Post-Pandemic Environment

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Introduction

In line with the assurance of quality TVET in the midst of the pandemic, there is a need to change some old strategies and delivery to provide relevant TVET in the country and to address problems on effective teaching and learning process as well as issues on unemployment with the growing number of TVET clients, there is a need to adapt a Flexible Learning Delivery within the existing three training modalities. Such modalities are: (1) Institution-Based Program; (2) Community-Based Program and (3) Enterprise-Based Training Program.

Institution-Based Program

Institution-Based Programs refers to TESDA-registered programs delivered in the institution or through the different flexible learning modalities by the following: TESDA Technology Institutions (TTIs), Private Technical Vocational Institutions (TVIs), Higher Education Institutions (HEIs), Public TVIs such as State Universities and Colleges (SUCs), Local Colleges and Universities (LUCs) and Training centers established by the Local Government Unit (LGU). - Memorandum No. 345 s. 2020.

Community-Based Program

Community-based Training for Enterprise development Program is primarily addressed to the poor and marginal groups, those who cannot access, or are not accessible by formal training provisions. They have low skills, limited management abilities, and have few economic options. They have no access to capital – most of them are unqualified for formal credit programs. The program goes further than just mere skills training provision. It is purposely designed to catalyze the creation of livelihood enterprises that shall be implemented by the trainees, immediately after the training. Likewise, it is designed to assist partner agencies such as LGUs, NGOs, people organizations and other agencies

with a mission to help the poor get into productive undertakings to help themselves and their communities.

Enterprise-Based Program

Refers to TVET programs delivered in the enterprise which may be in-plant or stand alone, or may be linked with a training provider. These programs are offered to industry groups or to enterprise employees and individuals.

Challenges and Strategies

Before the pandemic, vocational schools use all these three training modalities through face to face or in person training, but during and after the pandemic the schools need to capacitate its trainers in the conduct of Flexible Learning Delivery wherein all programs are required to be registered in Flexible Learning Delivery or via online.

FLEXIBILITY is defined as offering choices in the educational environment, as well as customizing a given course to meet the needs of individual learners. Therefore, providing the possibility of making learning choices to learners is crucial. These learning choices can cover class times, course content, instructional approach, learning resources and location, technology use, the requirements for entry/completion dates, and communication medium. - Collis, Moonen, & Vingerhoets, 1997; Goode, Willis, & Harris.

Flexible Learning is the provision of a range of learning modes or methods giving learners a greater choice of when, where and how they learn. - NCVER 2013, as cited in TESDA Circular No. 062, s. 2020

Other Challenges (Provision of Good Facilities and Equipment for Training)

Maintaining and providing new facilities and equipment is a perennial challenge in the training delivery. There is a need to think of more alternative strategies on how to address these challenges in lieu of expensive maintenance of facilities and equipment. As part of the school initiatives, the school was able to build strong partnerships with local government units and industry partners and they provided such needs.

Dual Training System (Innovative Training Delivery)

One of the main focuses of the school is by implementing the dual training system modality in order to be more relevant and responsive to the demand of partner industry thus creating great chances for employment. The Dual Training System (DTS) has long been incorporated in the Philippine Educational System. The term “Dual” refers to the two parties providing instruction; the concept “System” means that the two instructing partners do not operate independently with one another, but rather coordinate their efforts. In 1980, DTS was first introduced in the country by a joint project of the South East Asian Science Foundation and Hanns Seidel Foundation in the Dualtech Training Center. As successfully tested in some highly developed countries, it was adapted in the country last February 1994, under the administration of former President Fidel V. Ramos through Republic Act 7686 or the Dual Training System Act of 1994. The act was signed into law declaring a State policy on the modality of training and instructional delivery

of TVET. The policy combined the in-plant training and the school-based training on a training plan collaboratively designed and implemented by an educational institution and agricultural or industrial establishment. The training is designed so that the creative thinking and problem-solving abilities; manipulative competencies which meet occupational standards and requirements; values and attitudes with emphasis on work ethics, quality orientation discipline, honesty, self-reliance and patriotism are captured.

An establishment desiring to participate in DTS shall apply accreditation with the Technical Education and Skills Development Authority for an Accreditation Certificate through An Accredited Educational Institution. The Educational Institution shall assist the establishment to ensure that the necessary qualifications as specified in the law are met. Every establishment accepting trainees shall have the necessary personnel with technical qualification who will act as coordinator and in-plant trainer.

With these, relevant technical and vocational education in the country could be strengthened and serves as the means of creating a dependable pool of well-trained operators, craftsmen and technicians with appropriate skills and desirable work habits and attitudes that will eventually lead to productivity and employability of graduates.

The Jacobo Z. Gonzales Memorial School of Arts and Trades (JZGMSAT) has an existing DTS program. Under the DTS, the school and the workplace share the responsibility of providing trainees with well-coordinated learning experiences and opportunities. By following the provisions of the law, the school is entering into partnership and agreement with the different partner industries to deliver a certain training program. The school is responsible for the general and occupation-related theoretical instruction and the company or partner industry is providing trainees with relevant opportunities complemented by the actual training in the workplace. The close cooperation between the school and the company ensures that the trainees are fully equipped with employable skills, work knowledge and attitude. Thus, at the end of the training, trainees are fully equipped with the required skills and positive work values needed to enter the real world of work.

Today, we are in the years of industry revolution, fast changing technology and work processes are evolving, thus it requires new competencies and qualification, if the kind of training provided to students is limited within the traditional approach to learning, our student could not cope with the demand of modern technology. Therefore, the quality of training is significant and should be delivered in the actual workplace scenario to eliminate concerns on skills mismatch.

Objectives of the Program

1. To provide relevant training program through scholarship;
2. Meet the needs of the economy for training manpower in the widest possible range of employment;
3. To address mismatch problem and unemployment;
4. To generate revenue for instructional materials for the improvement of training delivery;
5. To maximize the acquisition of relevant knowledge, skills and proper work attitudes; and

6. To give assistance to the poor and deserving students through scholarship

Definition of Terms

1. *Dual Training System.* It is an instructional or training modality designed to practice dual venues of training to acquire relevant knowledge, attitude and practices necessary to meet the company requirements and practices
2. *Training Plan.* It is a document collaboratively prepared by the school and partner industry containing the specific training activities of the students in the workplace
3. *Memorandum of Agreement.* It is a document about partnership containing the condition and mechanics of implementation of the following area of responsibilities: nature and objectives of training, commencement and duration of training, trainees allowance, daily training hour's condition for termination and trainee's performance evaluation
4. *The Training Station.* This is a place for workshops where equipment may be stationed prior to actual exposure in the production area
5. *The Industrial Coordinator*. He is a person who is responsible for promoting coordination regarding details of the DTS program and also responsible for monitoring deployed trainees
6. *Training Coordinator.* He is a person whose duty is to collaborate with the Industrial Coordinator and/or the school/training center staff concerned to facilitate matters necessary for the effective implementation of the program.
7. *In-Plant Trainer.* It refers to the person who is in-charge in the teaching learning process in the industry. She/he is considered an expert
8. *Day Release Scheme.* It refers to the trainees schedule of deployment wherein they are required to attend five to six days work in the company and one to two day classes in school. Trainees can be deployed even if required competencies are not completed
9. *Block Release Scheme.* This refers to the trainee's schedule of deployment wherein trainees are required to finish the required competencies before sending in the industry. Trainees working schedules are devoted until they finish the requirements

Mechanics of Implementation

The program starts with the selection of trainees wherein they need to pass the screening process in preparation for the requirements of partner industry and prior to the school-based training wherein they need to finish all required competencies that will satisfy the designed curriculum. After satisfying such requirements, the trainees will be deployed in the partner industry by following what is provided in the Memorandum of Agreement with partner industry and also a collaboratively designed training plan. All provisions of the law should be considered including the seventy five percent (75%) of the daily minimum wage trainees allowance in the whole duration of training, enrolling in a group accident/ life insurance and liability waiver. The law also provides additional cost on top of the 75% allowance provision to be provided by the industry partner. The training duration is dependent on the agreed length of training that will satisfy the training requirements and the required competencies in a certain qualification. In time that the company requirement is urgent, the school will adapt two schemes in the deployment of trainees

such as: The Day Release Scheme and the Block Release Scheme. Weekend classes should be arranged to satisfy the school training requirements depending on the one day given as day off. From time to time, the industry coordinator visits the deployed trainees to monitor their conditions, sometimes, on a weekly basis. After the monitoring, the next stage is the evaluation. All trainees are to be subjected and to be evaluated to determine if the agreed conditions are met.

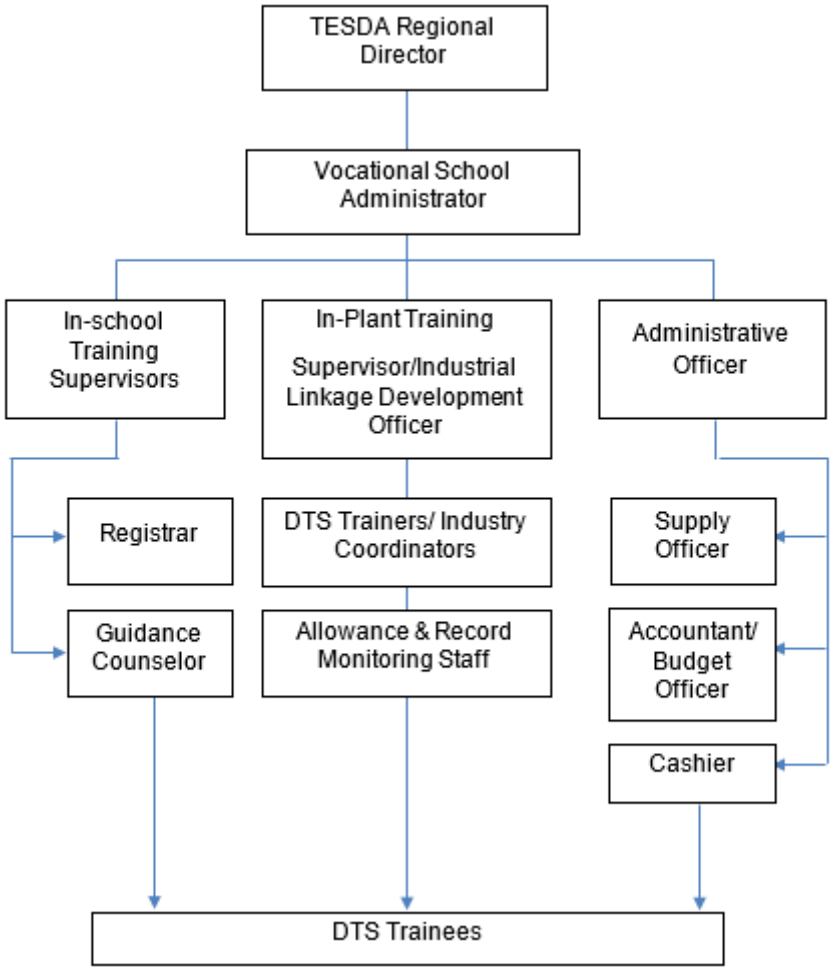
The Program Management Team

The JZGMSAT DTS program will be implemented by a project management team. A corresponding office order will be issued to authorize the faculty or personnel to perform the function as follows:

- **Program Manager** - a person who is responsible for the implementation of policies and programs, formulate plans, project guidelines regulation for the proper management and operation of the programs
- **Assistant Program/Project Manager** - he assists the program manager to implement policies, program, formulate plans, project guidelines regulation for the proper management of the program/project
- **Program Cluster Supervisor** - he supervises the activities for in-school training
- **Administrative Officer** - supervises the accounting procedures, procurement of supplies and bank transaction
- **DTS Supervisor (Industrial Linkage Development Officer)** - He supervises the activities for in-plant training and other related duties such as:

    a. Place the trainees in accredited establishment for the in-plant training;
    b. Monitor attendance, performance and behavior of the trainees;
    c. Ensure the synchronization of the school and in-plant training plans;
    d. Provide advice to the trainee, in-plant trainers, and in-school instructors which will improve the quality of training;
    e. Inform the head of the educational institution of development in the establishments, whether positive or negative;
    f. In case of negative feedback, evaluate potential solution, refer them to academic committee, and coordinate implementation accordingly;
    g. Ensure that the provision of agreement are being followed: and
    h. In the event that the establishment qualification becomes inconducive for training under the dual training system, and upon serving the necessary notices, the program focal/supervisor may, in consultation with the head of the school, initiate the termination of the Memorandum of Agreement, and transfer the trainee to another establishment.

Program Management Team Organizational Chart



Program Management Team Organizational Chart

There are five stages involved in the implementation of the project namely: (1) Selection of trainees; (2) Undergo school-based training; (3) Deployment; (4) Monitoring; and (5) Evaluation.

1. **Selection of Trainees** - it is critical to know the requirements of your partner regarding the following: height, vision, physical built, age etc...
2. **Undergo School-based training** - the trainees should undergo on the following activities:

    a. Attend DTS Orientation
    b. Enroll and attend training in Basic & Common Competencies
    c. Attend training for Core Competencies

3. **Deployment** - prior to deployment, trainees should undergo activities that will help to develop proper work attitude. Activities such as: Work Orientation program, Parents and Trainees Orientation and involving them in the school 5S activities for

the maintenance of school facilities

4. **Monitoring** - it involves activities such as: meeting with trainers, visiting trainees in the industry and counseling when infractions occur with trainees
5. **Evaluation** - the evaluation for in-plant training is being done by the in-plant trainers and evaluation sheet is being provided to the In-plant trainers

Program Evaluation

The program uses four main factors to determine the strength and weaknesses of trainee's performance namely: Personal Competence, Technical Competence, Company knowledge, and Social Competence. Each factor has different indicators with the corresponding rating to consider the completeness and validity of evaluation. The industry coordinator ensures that the evaluator is given the proper orientation before administering it. By using the designed evaluation sheets, the trainees are evaluated at a range of 1-5 with the equivalent, numerical and adjectival ratings.

Impact/Result of Implementation

Through the School network and linkages with the Local Government and Partner industry, the school was able to provide two donated four story building and numerous training equipment that could be used for quality training

The school was also the first institution that was evaluated by the Asia Pacific Accreditation and Certification Commission right after the pandemic and was able to receive an award of SILVER LEVEL accreditation. Likewise receiving one and two STAR in the program for Bread and Pastry and Shielded Metal Arc Welding.

Post-Pandemic Operational Experience of Polytechnic College of Engineering and Technology

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Introduction

In the aftermath of the global pandemic, the operational landscape of educational institutions has undergone significant transformations. This presentation delves into the experiences and adaptations of a Polytechnic College of Engineering and Technology (PCET) in Mongolia, operating within the newly amended legal framework initiated by the Education Package Law, which encompasses the General Law on Education, Law on Preschool and Higher Education, and Vocational and Technical Education. Enacted on July 7, 2023, this legislative update marks a pivotal shift in educational paradigms for the academic year 2023-2024. The revised law emphasizes equal opportunities for learning and development, guarantees citizens' rights to lifelong learning, opens avenues for continuous teacher development, strengthens management and governance systems based on ability, introduces funding tied to quality, results, and performance, and establishes an environment supportive of the digital education system.

The recently ratified Law on Vocational and Technical Education introduces significant changes, encompassing:

- **Alignment with National Development Goals:** Ensuring the vocational and technical education and training system is in line with major national development objectives
- **Enhanced Social Partnership:** Reforming educational content and programs to strengthen social partnerships, increasing employer and professional association involvement, and embracing flexible education formats
- **Coordination with Higher Education:** Offering opportunities for studying in higher education institutions with coordinated educational levels, aligned with the national hierarchical structure of professions
- **Multi-Source Financing System:** Establishing a multi-source financing system based on quality, results, and performance
- **Teacher Development and Remuneration**: Ensuring continuous teacher and human resource development, providing remuneration opportunities based on work performance and results
- **Institutional Development Provisions**: Enabling the development of educational

institutions in the form of complexes, campuses, or interdisciplinary training bases, as well as excellence centers. This aligns with economic development, industrialization, and regional advancement, allowing institutions to receive percentages and dividends from the income generated through their own research, production, and services

Presently, Mongolia hosts 77 Technical and Vocational Education and Training (TVET) institutions, catering to 38,034 students. Among them, 50.3 percent (19,115 individuals) are enrolled in 37 institutions in Ulaanbaatar, while the remaining 49.7 percent (18,919 individuals) pursue studies in 40 institutions across the countryside. The total count of primary teachers across these institutions is 2,252.

Established in 1984, the Polytechnic College of Engineering and Technology (PCET) currently operates with 2,248 students and a teaching staff of 110 in the academic year 2023-2024. Notably, in 2012, PCET achieved the "SILVER HONOR" rating from the Asia Pacific Accreditation and Certification Commission (APACC), making it one of the pioneering institutions to receive such international accreditation. Subsequently, in 2013, PCET attained recognition as the Model Vocational Construction School of Mongolia, and in 2014, it secured the 2nd-level accreditation at the national level from the Mongolian National Council for Education Accreditation.

In 2019, PCET achieved the prestigious "GOLD HONOR" recognition from APACC, marking a historic milestone as the first institution in Mongolia to attain this distinction. PCET students demonstrated exceptional skills and commitment on the global stage, participating in consecutive "World Skills" competitions from 2015 to 2022 in welding, carpentry, cooking, and plumbing. Their remarkable performance earned them national acclaim and secured medal placements in these international competitions.

The dynamics of the education sector are evolving in tandem with societal progress, emphasizing the critical role of education in the 21st century. It has become imperative to nurture specialists capable of addressing the challenges posed by a rapidly changing society. Enhancing and maintaining quality stands as a paramount objective in TVET policies and reforms. Quality in TVET is defined as a vocational program that equips graduates to create and deliver a "product" meeting expectations set by the nation, society, employers, families, teachers, and the students themselves.

The school's international accreditation by APACC has played a pivotal role in elevating the quality standards of vocational education in Mongolia, making a substantial contribution to the field. And we are dedicated to enhancing the quality of training and services in the post-COVID era.

Teaching and Learning Experiences

In the latter half of the 2019-2020 academic year, amid the COVID-19 pandemic lockdowns, the school transitioned to fully online teaching. From November 11 onward in the first quarter of the 2020-2021 academic year, 113 PCET teachers converted the content of 340 courses into electronic format, with student attendance reaching 80%. During this period, participating students devoted 42,144 hours to their studies out of a total of 42,818

hours, resulting in an outstanding performance rate of 98.4%. Several impactful actions were undertaken, including:

- Conducting a comprehensive mapping survey involving 1,862 students from 71 groups, with 100 students lacking internet access receiving 2 million MNT data units in collaboration with Mongolia's leading ICT provider, Mobicom Corporation
- Providing essential support to teachers for e-course development by organizing basic, intermediate, and advanced level courses through the Multimedia Center
- Executing a school-wide disaster risk assessment and delivering two types of training sessions on Stress Management and Psychological Immunity for both teachers and students during the COVID-19 pandemic
- Granting a 50% tuition discount to 36 orphans and disabled students
- Developing and releasing 6 electronic modules for the Construction Carpentry major to the public as part of the Cooperative-based Technical and Vocational Education and Training (cTVET) project in the academic year 2020-2021

In the 2020-2021 academic year, the COVID-19 pandemic necessitated the shift of industrial practicum to electronic and distance formats, impacting students' skill development. Consequently, a specialized 14-day practicum program was designed and implemented at the start of the 2021-2022 academic year to provide additional industrial training, compensating for the delayed acquisition of vocational skills for 711 students across 29 groups. This initiative resulted in an enhancement of students' skills, increased awareness of labor safety in the workplace, and improved equipment handling skills for industrial practices.

Moreover, the newly enacted law on vocational and technical education legalized e-learning, leading the school to create opportunities for a blended learning approach, combining e-learning with traditional classrooms. This includes:

- Establishment of a legal framework for e-learning within the school's bylaws and regulations
- Revitalization of the e-learning and teacher development center, now staffed by three full-time employees dedicated to conducting e-learning and preparing teaching materials
- Implementation of the XMooc training management system since the 2022-2023 school year

Excellency Center Experience

As part of the cTVET project, generously funded by the Government of Germany and executed in collaboration with the Mongolian Ministry of Education and Science, several schools were selected to establish seven specialized "Excellency Centers." PCET was chosen as one of these centers and currently operates as the Mongolian Construction Carpentry Excellence Center (CCEC). Established in 2017, the Center underwent expansion in 2021, with the school allocating its funds (210.1 million MNT) to construct a 360 m2 building, which is now fully operational.

Aligned with the 2020-2024 strategic plan for CCEC development, the Center collaborates with relevant stakeholders to fulfill various functions. These include providing specialized training in carpentry professions at the specialization level, conducting skill improvement programs for enterprises, offering training courses for teachers in vocational schools, delivering career guidance, facilitating assessments to recognize prior knowledge, and serving as a central training base for participants in the World Skills Competition.

Quality Assurance Experience

Educational accreditation is a professional and independent assessment process that determines whether the quality of educational institutions and programs aligns with the criteria established by the competent authority, recognizing progress within the professional framework (General Law on Education, 3.1.22). The General Law on Education mandates the accreditation of popular and leading professional programs in professional and technical education, emphasizing not only quality assurance but also the dissemination of best practices to set an exemplary standard.

As part of the "Excellency Centers - Dissemination of Good Practices" event, PCET shared its expertise in "Excellency Centers," "Quality Management and Evaluation," and "Career Orientation Services." The event, which drew 146 representatives from 63 governmental and non-governmental organizations, enterprises, the Ministry of Education, Culture, Science, and Technology, and 56 students from eight elementary schools, facilitated the exchange of experiences regarding school activities and quality assurance methods.

To further enhance accessibility, the "Digital Quality Guide" for vocational education and training institutions has been developed and uploaded to the U-TVET training and management system, making it publicly available.

In the academic year 2022-2023, the school worked on providing quality assurance by obtaining national accreditation for vocational education programs such as "Chef" and "Building Plumber," along with the "Construction Carpentry Technician" program in technical education. This accreditation is valid for a duration of five years.

Also, according to the "Quality criteria and requirements of the Excellency Centers" outlined by the General Department of Education, external evaluations were conducted in 2021, 2022, and 2023, covering six criteria: Governance and leadership, Teaching and learning activities, Student-oriented services, Human resources, Other resources, and Cooperation and partnership. The school has consistently received a "Good" rating over three consecutive years, demonstrating its commitment to quality assurance.

To reinforce quality assurance measures, the quality management team, comprising 24 members, was officially established by the director's order dated February 31, 2022. Similarly, the internal audit team, aligned with the detailed action plan and graphic schedule for 2022-2023, was approved by the director's order on the same date. In the academic year of 2018, ten workshop classes and four public spaces underwent "5S+1S" internal audits. Improvement plans were formulated and diligently executed to ensure continuous enhancement.

The “Continuous Improvement Process Board” was introduced and utilized in the “Makers’ Field”, the innovation center of PCET with the objective of disseminating internal audit results and improvement processes, while also soliciting suggestions and recommendations. The school actively organized and executed the “5S+1S CIP Campaign for the Orderliness of the Work Environment” to boost the involvement of teachers and staff in continuous improvement activities. This initiative aimed to maintain a tidy work environment by establishing specific criteria for the quality of finished products and standardized processes (5S+1S). Teachers, employees, and departments exhibiting high initiative were duly acknowledged and rewarded.

Career Guidance Program Experience

PCET’s “Career Orientation Employment Center” plays a pivotal role in delivering career orientation services to assist and equip students and youth for the workforce. The center is dedicated to fostering stable employment, job retention, expediting post-graduation job searches, and facilitating work beyond school hours. Moreover, in adherence to tuition fee discount regulations, the center extends support to students, providing discounts and incentives totaling 75.7 million MNT annually to over 500 students.

Each year, the school conducts career guidance counseling services, reaching out to more than 1,000 individuals through organized group, individual, and community-oriented activities at the school level. This initiative aims to guide individuals in making informed career choices and planning for their future employment. The school’s commitment to career orientation encompasses various activities:

- Facilitating a dedicated day for girls and boys
- Conducting career orientation events within the school and in collaboration with industries
- Offering individual and group counseling for parents, caregivers, supporters, and recruits
- Organizing orientation activities for new recruits
- Providing services to support purposeful learning for students
- Executing the “Labor Preparation Program” for graduating class students

To ensure regular provision of career advice and job information to students and graduates, the school established the PCET Labor Exchange in 2022. In the academic year 2021-2022, 73 graduates were successfully placed through the labor exchange, exemplifying its effectiveness in connecting students with employment opportunities.

Conclusion

In conclusion, the Polytechnic College of Engineering and Technology (PCET) has evolved into a Center of Carpentry Excellency, demonstrating a commitment to ongoing enhancement and quality assurance at both national and international levels.

The school actively shares its experiences and “Good Practices” multiple times a year within the country and region. Notably, over 60% of state-level Technical and Vocational Education and Training (TVET) and Polytechnic College (PC) representatives have sought to learn from PCET’s experiences.

Through the establishment and refinement of an internal quality assurance system, PCET has achieved significant outcomes at the institute level:

- Evaluation of organization's quality against international standards
- Improved teaching quality, leading to increased student enrollment and enhanced school reputation
- Expanded international collaborations with accredited institutions, fostering knowledge exchange and human resource empowerment
- Enhanced trust from domestic employers and collaborators
- Responding to the ongoing need for quality assurance, a new "Control-Evaluation and Quality Office" was established following structural changes in 2023

For teachers and students:

- Opportunities for continuous improvement in teaching activities based on interagency organization criteria and recommendations
- Increased international opportunities for both teachers and students
- PCET students consistently represented Mongolia in the "World Skills" competition from 2015 to 2022, showcasing the school's commitment to excellence on a global

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Global Synergy: PPD's Best Collaborative Practices

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Introduction

The Malaysian government has actively championed Technical and Vocational Education and Training (TVET) through a series of strategic initiatives and policies, underscoring its commitment to augmenting the quality of TVET programs and fostering a heightened appeal for vocational education (MOHE, 2015) (DPCCE, 2017). Notably, there is a concerted emphasis on aligning TVET programs with the dynamic needs of industries, and collaborative ventures between educational institutions and various sectors are actively encouraged to ensure students acquire skills directly pertinent to the contemporary job landscape.

Malaysia boasts a diverse array of TVET institutions, including polytechnics, community colleges, and vocational training centers. These institutions offer a comprehensive spectrum of programs spanning fields such as engineering and technology, hospitality, information technology, services, and others, reflecting a commitment to providing a well-rounded education that meets the multifaceted demands of the workforce.

An innovative facet of Malaysia's TVET landscape is the adoption of a dual training system in certain programs. This approach integrates both classroom instruction and practical industry training, aiming to furnish students with a holistic education that seamlessly melds theoretical knowledge with hands-on experience.

However, despite these commendable efforts, challenges persist. One notable hurdle lies in the prevailing perception that vocational education holds a lower status compared to traditional academic paths. Addressing and rectifying this perception is important to elevate the standing of TVET programs in the eyes of students and employers alike, ensuring their enduring success and impact in the competitive job market. This paper delves into the nuanced landscape of TVET in Malaysia, exploring PPD Best Practices, challenges, and initiatives that collectively shape our current state.

Best Practices in PPD

To capture the interest of the community, the main initiative undertaken is through the buying process to ensure that the spirit of each individual is filled with a high level of commitment to face this assessment process. Therefore, a specific tagline has been crafted to ensure that the goals of each individual align with the aspirations of the management.

This tagline has also been introduced during the kick-off ceremony to signify the beginning of the commitment of all PPD staff to approach the APACC accreditation more seriously. Strategic partnerships are the most important element (Subri et al., 2022) and every institution should have a clear plan.

The dedication demonstrated by the entire staff, spanning from top management and the APACC Main Committee to the daily promotions shared on official social media platforms, the internal audit team, and the individuals associated with each criterion, coupled with the enduring collaboration from the Department's leadership, covering all staff and students, to ensure the attainability of #Platinum4PPD, is noteworthy. This level of commitment is distinct and unparalleled, representing a collaborative effort that has not been observed elsewhere. The APACC Accreditation process has proven to be a unifying force, motivating everyone within PPD to contribute their utmost, overcome challenges, and leverage capabilities in ways previously deemed unfeasible. The collective endeavor of the PPD community has been marked by diligent efforts to sustain momentum consistently. In addition, the unwavering dedication of all individuals can be demonstrated once they receive comprehensive and well-structured guidance.

PPD has strong support from our industry partners. Proving the close relationship between TVET institutions and the industry cannot be denied. Their active involvement in sharing expertise, contributions in various aspects, advisory services and so on has made PPD the leading TVET institution in the industry network (Mohd Azlan et al., 2021). PPD has successfully partnered with many prominent industrial bodies in Malaysia in various sectors such as architecture, engineering and services. Thus, indirectly improved the quality of the TVET program itself. On top of that, the Chairman of the Industrial Advisory Committee in PPD is the CEO of SIRIM formerly known as the Standard and Industrial Research Institute of Malaysia. It is a corporate organization fully owned by the Malaysian Government, under the Ministry of Trade and Industry. His contributions and those of other industry advisors continue to help us a lot and are directly instrumental in achieving our mission and vision. This is also in line with Dang (2023), who stated that the relationship between TVET providers and industry is a crucial component of skills development training programmes.

The additional winning approaches involved PPD methodologies. PPD has outlined various activities throughout the APACC accreditation process, including the implementation of a series of extensive workshops and the conduct of both internal and external audits for all criterion members and staff. These measures hold significant importance as they facilitate discussions among members and allow the collection of essential data outlined in the APACC's Manual.

Challenges

In achieving any mission, the support from top management is crucial for the initial push and subsequent guidance throughout the accreditation process. The commitment of Management Board Members needs to be highlighted in ensuring that every plan and issue faced is fully supported. Without the support of the entire community, any planned activity is bound to fail. Awareness and support from the community are crucial as they are the main pillars in achieving the PPD's aspiration for the APACC accreditation assessment. Every community member needs to show a very high commitment to

contribute expertise, experience, time, financial support, and more to ensure a smooth and organized process.

Facilities and resources need to be upgraded, including teaching and learning equipment (workshops and classrooms), support facilities such as a stable internet network, staff and student toilets, student dormitories (old blocks), cafeterias, and the facilities for the differently abled students.

Another significant challenge faced involves human resources, including the relocation of staff in and out of the institution, directly leading to the need for restructuring in the APACC/Criterion Committee.

This challenge includes establishing the Internal APACC Audit Panel among PPD members. The team that is formed later will require time to thoroughly understand the content and document/evidence requirements for APACC standards. However, to establish a truly robust Internal Audit Team, PPD should appoint those who have been involved in Internal Audits, utilizing their skills, knowledge, and competency for the Internal Audit tasks for APACC accreditation.

Among other challenges faced is the English language proficiency involving PPD members and students to face the upcoming APACC accreditation assessment visit. Implementing audits in English poses a considerable challenge, including the preparation of documents/evidence and presentation sessions to the APACC Panel. Several grooming sessions were held before the accreditation assessment visit involving lecturers and students who were directly involved in the interview sessions with the APACC Panel. These sessions are crucial to boost the confidence level of the criterion members and students during the face-to-face session with the APACC Panel so that the existing language gap can be minimized, and the presentation content can be effectively delivered.

Certainly, in carrying out such a mission, financial issues cannot be avoided and somewhat disrupt the initial planning. However, this matter should be viewed positively, with the commitment and spirited effort of the entire PPD community. If all parties cooperate and are committed to their tasks, even with limited resources, PPD's efforts to face the APACC accreditation assessment will not be disrupted.

Each of these challenges is expected not to break the spirit of the PPD community in facing the APACC accreditation, and they can serve as guidelines and guidance to enhance the momentum and work spirit of the community.

Recommendations

To propel success with APACC in the future, several things can be done. To maximize our collective impact and ensure seamless collaboration, it is imperative for all teams to work hand in hand. By fostering strong partnerships and aligning our efforts, we can amplify productivity and achieve our shared objectives more effectively.

APACC should strategically enhance its global visibility through proactive promotion and branding efforts. This initiative aims to underscore the value that accredited institutions derive from association with APACC, therefore fostering a sense of appreciation among

these entities. Simultaneously, a heightened global presence will contribute to elevating APACC's reputation, garnering increased respect from a broader audience. It is believed that CPSC collaboration with other TVET institutions in promoting this TVET accreditation assessment can be expanded. Adequate collaboration between TVET institutions and industries would lead to provision of relevant practical skills for industrialization. It is evident to be highly beneficial in steering administration towards a more systematic, planned, and controlled approach based on established standards (Md Abu Raihan, 2014).

Other than that, it's also suggested that the validity of rankings should vary based on the ranking tier, such as Platinum for a duration of six years and Gold for four years. This approach is proposed to instill a continuous drive for improvement within accredited institutions, motivating them to consistently enhance their performance. This also directly demonstrates the recognition received by any institution, particularly during its maturity period while obtaining accreditation. It can also pave the way for broader opportunities for institutions, especially those receiving platinum recognition, to move more extensively in promoting this APACC recognition in their respective countries. Indeed, the challenging four-year period makes it difficult for institutions to plan long-term strategies to optimize the received recognition.

Moreover, APACC should expand its audit process in recognizing and highlighting the specialized expertise or niche area of the accredited institutions, thereby amplifying their overall capabilities, in the Asia Pacific region. This is important where in addition to the recognition received by the institution, the TVET programs offered in the best institutions can also be recognized based on certain standards to highlight the ability of the TVET program to be promoted internationally. CPSC can take this opportunity in making program-level ratings in recognition of their strengths and good practices.

APACC also may consider developing a mobile-friendly web-based application system to streamline communication, fostering effective collaboration among accredited institutions globally. This can directly facilitate the institution in presenting documents and evidence, allowing them to assess their achievements through self-assessment. As a parent institution, the Department of Polytechnic and Community College Education (DPCCE) has also developed an online application through the academic assessment system (iPeNA System). Such a system can be created at the CPSC level to facilitate our future assessment process. PPD is ready to facilitate CPSC to see how this system works for the implementation of future collaboration.

Conclusion

Engaging in an active synergy collaboration with industrial and stakeholder bodies, including the CPSC and other institutions accredited by APACC holds the promise of numerous long-term benefits that extend far beyond immediate gains. This collaborative approach creates a win-win scenario, fostering positive outcomes for all involved parties, including staff, students, and the broader community.

- **Innovation**. The synergy between academic institutions, regulatory bodies like CPSC, and APACC Accredited Institutions cultivates an environment conducive to benefit the organizations involved while contributing to industry advancement as a whole.

- **Outreach Programs.** Through this, it ensures a more comprehensive understanding of societal requirements and enables the development of solutions that are both relevant and impactful.

In responding to challenges, PPD is committed to establishing itself as the TVET Focal Reference Institution. The main aim is to share experiences, staff expertise, and dedication with various stakeholders, particularly TVET institutions, both nationally and internationally. This includes sharing our expertise in aspects related to internal or external audit processes by our resolute audit team.

The audit team is always there with the APACC team for every single internal and external mock audit as well as post-mortems conducted. The team is diligent enough to spend time providing us with all the comments, highlighting the strengths and weaknesses of each criterions. Thus, we would like to seize this opportunity to propose to CPSC to work hand in hand with our audit team. We welcome all members of the floor today to collaborate with us and our audit team, be it online or physical audit visits to your institution.

In addition, virtual benchmarks can also be held. Through benchmarking, institutions can benefit from the sharing of ideas and knowledge transfer concerning one's expertise or niche area. PPD also welcomes the idea of becoming the master trainer of APACC in the future with our diligent and committed Auditors team and of course with the endless support from CPSC and our local NCA.

Through collaboration, opportunities for staff and student exchange programs are enriched. This exchange facilitates the cross-pollination of ideas, methodologies, and best practices between institutions and industries. Staff members can gain real-world insights by working closely with professionals in relevant fields, enhancing their practical knowledge and expertise. We also hope that CPSC can open broader avenues to serve as an intermediary, facilitating this global internship process for the mutual benefit of all members.

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Learning Express - Design Thinking (LeX 2023)

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Introduction and Present Situation of TVET and Institution

Technical and Vocational Education and Training (TVET) plays a pivotal role in Malaysia's educational landscape, catering to the practical skill development and professional training of individuals across various industries. This sector in Malaysia has evolved significantly, emphasizing the importance of hands-on learning and specialized knowledge to meet the demands of a rapidly advancing economy. Amidst this transformation, institutions offering TVET have emerged as vital contributors to Malaysia's workforce development, aiming to bridge the gap between academic learning and industry needs.

In Malaysia, the TVET sector has undergone a substantial revamping to align educational programs with industry requirements. Various institutions, both public and private, offer diverse vocational courses, equipping students with technical expertise, from engineering and hospitality to information technology and healthcare. These institutions not only provide specialized training but also collaborate closely with industries to ensure curriculum relevance and foster seamless transitions from education to employment. Government initiatives and partnerships with industry stakeholders have enhanced the quality and accessibility of TVET, positioning it as a viable educational pathway for students seeking hands-on learning experiences.

The Learning Express (LeX) program stands as a transformative approach supplementing the traditional TVET framework in Malaysia. It offers a unique blend of academic learning and practical application, aligning with the evolving needs of the industry. LeX's emphasis on experiential learning, essential skill development, and global perspectives resonates profoundly with the changing landscape of vocational education. By integrating cultural immersion, problem-solving emphasis, and community engagement, LeX complements the existing TVET system, preparing students not only with technical proficiency but also with a broader set of skills essential for leadership and adaptability in today's dynamic workforce. LeX serves as an innovative avenue within the larger TVET framework, addressing the demand for well-rounded professionals capable of navigating complex challenges within Malaysia's evolving industries.

During the 12-day LeX program, students engage in out-of-textbook experiences, such as learning a new language and undergoing a community homestay. These experiences focus on building necessary human skills and a positive mindset. By immersing themselves in a different cultural context, students develop empathy for the community and gain a broader perspective on global challenges.

Moreover, the LeX program encourages students to apply their teamwork and communication skills to co-create innovative prototype solutions for real-life issues. This emphasis on developing students who can lead impactful lives. By participating in LeX, students not only gain academic knowledge but also acquire practical skills and a sense of purpose that prepares them to be fit-for-the-future.

Highlights and Best Practices

The highlights of the Learning Express (LeX) program encompass its unique blend of academic learning with real-world application, integration of essential skills, cultural immersion, community engagement, problem-solving emphasis, and preparation for future leadership. Best practices of LeX include its holistic learning approach, emphasis on soft skills development, cultural immersion for a global perspective, application of knowledge to solve real-life issues, community engagement fostering empathy, and preparation of students for future challenges. These highlights and best practices collectively create a comprehensive and impactful educational experience, preparing students to navigate complexities and lead purposeful lives.

Highlights

The Learning Express (LeX) Program stands as a beacon of innovative education, distinguished by its commitment to merging academic learning with tangible, real-world applications. One of its standout features is the incorporation of experiential learning, offering students a rare opportunity to transcend textbook knowledge and actively engage in practical experiences. This unique approach fosters a deeper understanding of academic concepts by immersing students in hands-on learning scenarios, bridging the gap between theory and application. By combining academic rigor with real-life challenges, LeX provides a holistic learning environment that prepares students for the complexities of the modern world.

Moreover, LeX is dedicated to nurturing essential skills and fostering a social innovation mindset alongside traditional academic pursuits. Through a deliberate emphasis on skill development, students not only acquire theoretical knowledge but also cultivate crucial abilities such as effective communication, teamwork, and creative problem-solving. This integration of essential skills equips students with the tools necessary to navigate diverse professional landscapes and thrive in a rapidly evolving global society.

Central to the program's success is its dedication to cultural immersion and community engagement. By exposing students to activities like learning new languages and participating in community homestays, LeX facilitates a deeper understanding of different cultures. This exposure not only fosters empathy but also broadens students' global perspectives, preparing them to navigate and contribute meaningfully in an increasingly interconnected world.

Furthermore, LeX places a strong emphasis on practical application, encouraging students to collaboratively create innovative solutions for real-life issues. This hands-on approach not only reinforces classroom learning but also instills a sense of responsibility and purpose in students. By challenging them to address societal challenges, LeX nurtures future leaders who possess not only academic competence but also practical skills,

resilience, and a profound sense of purpose—preparing them to positively influence and lead in a world characterized by constant change and complexity.

Best Practices

The LeX Program distinguishes itself through a set of best practices meticulously designed to craft a comprehensive and impactful educational experience. At its core lies a commitment to a holistic learning approach, seamlessly blending theoretical education with practical applications. By intertwining academic rigor with real-world experiences, LeX ensures a well-rounded learning journey that equips students with not just knowledge but also the ability to apply it in diverse settings. Moreover, the program places a strong emphasis on cultivating essential soft skills such as empathy, communication, and teamwork. This deliberate focus on human skills enriches individuals, fostering their capacity to engage effectively with others and navigate complex challenges adeptly.

An integral aspect of the LeX Program is its dedication to cultural immersion and the cultivation of a global perspective. By exposing students to diverse cultural contexts, LeX expands their worldview, nurturing global citizens equipped to thrive in an interconnected world. Complementing this approach is the program's encouragement of the practical application of knowledge. Students are motivated to utilize their learning to address real-life problems, fostering critical thinking, innovation, and a sense of responsibility.

LeX further distinguishes itself by actively engaging students with local communities, fostering empathy and a profound understanding of societal challenges. This community engagement not only develops a sense of social responsibility but also contributes to the cultivation of empathetic leaders capable of understanding and addressing complex societal issues. Ultimately, LeX prepares students for the future by equipping them with a sense of purpose, resilience, and practical skills necessary to navigate and positively influence an ever-evolving world.

Challenges and Recommendations

The TVET sector in Malaysia confronts various challenges, including societal perceptions, curriculum alignment, accessibility, and educator quality. To address these, reshaping societal views about vocational education through awareness campaigns, aligning curriculum with industry demands through collaborations, enhancing accessibility through equitable resource allocation, and sustaining educator quality via continuous development are imperative. Integrating the principles of the Learning Express (LeX) program within TVET institutions stands as a transformative measure. LeX's emphasis on practical skill development, positive perception fostering, and immersive learning aligns seamlessly with these recommendations, enhancing graduates' readiness for the evolving workforce and bolstering Malaysia's competitiveness in the global arena.

Challenges

In navigating the realm of TVET in Malaysia, several challenges have surfaced, warranting strategic attention and adaptation. One significant hurdle involves altering societal perceptions and misconceptions about vocational education. Despite its importance in meeting industry demands, TVET often faces the stigma of being a secondary educational

choice compared to traditional academic pathways. Overcoming this challenge necessitates comprehensive awareness campaigns highlighting the value and career prospects offered by TVET programs, encouraging students and parents to perceive it as an equally esteemed educational route.

Another challenge lies in ensuring the alignment of TVET curricula with rapidly evolving industry needs. With industries undergoing constant technological advancements and transformations, there is a pressing need to continually update and tailor educational content to match real-time skill demands. This necessitates robust collaboration between TVET institutions and industries to design agile and responsive curricula that equip graduates with relevant and up-to-date skills.

Moreover, the accessibility and inclusivity of TVET programs remain crucial issues. Bridging the gap between urban and rural areas, ensuring equal opportunities for all socio-economic backgrounds, and addressing gender disparities within vocational education stand as pivotal challenges. Ensuring equitable access to quality TVET programs requires concerted efforts in resource allocation, infrastructure development, and outreach programs targeting marginalized communities.

Furthermore, sustaining the quality and caliber of TVET instructors and trainers poses a challenge. The need for highly skilled and competent educators who can effectively impart technical knowledge and essential skills to students is paramount. Continuous professional development programs and attractive incentives are imperative to attract and retain qualified instructors within the TVET sector.

Addressing these challenges demands collaborative efforts from educational institutions, government bodies, industries, and stakeholders to fortify the TVET sector, ensuring its relevance and efficacy in shaping a skilled and adaptable workforce for Malaysia's future.

Recommendations

In propelling the TVET sector in Malaysia toward greater effectiveness and relevance, several strategic recommendations emerge as pivotal drivers for transformative change. First and foremost, concerted efforts are essential to recalibrate societal perceptions surrounding vocational education. Comprehensive awareness campaigns, targeting parents, students, and educators, can spotlight the diverse career pathways and practical benefits offered by TVET programs, reshaping the narrative to position vocational education as an esteemed and viable educational route.

Aligning TVET curricula with swiftly evolving industry needs demands dynamic collaboration between educational institutions and industries. Establishing robust partnerships or advisory boards can facilitate the continuous refinement of curricula, ensuring they remain responsive to technological advancements and skill demands. Embedding internships, apprenticeships, or work-based learning experiences within the curriculum can further bridge the gap between academia and industry, fostering graduates equipped with relevant, up-to-date skills.

To enhance accessibility and inclusivity within TVET, prioritizing resource allocation for infrastructure development, particularly in rural areas, remains imperative.

Equitable access to quality programs necessitates expanded scholarship opportunities and affirmative actions aimed at encouraging participation from underrepresented communities. Gender inclusivity initiatives should also be prioritized, creating tailored programs and support structures to encourage a more diverse workforce within TVET.

Moreover, sustaining the quality of TVET instructors and trainers requires a multi-faceted approach. Implementing structured professional development programs, offering attractive career pathways, and fostering a conducive work environment can attract and retain highly skilled educators. Providing opportunities for trainers to engage in industry attachments or collaborative projects can ensure they remain abreast of industry developments, thereby enhancing the quality of education imparted.

As an integrated solution within the TVET framework, the purpose of the Learning Express (LeX) program aligns seamlessly with these recommendations. By infusing LeX principles throughout TVET institutions, such as emphasizing practical skill development, fostering a positive perception of vocational education, and promoting hands-on learning experiences, institutions can elevate the quality, relevance, and appeal of their programs. This integration will empower graduates to confidently navigate the evolving industry landscape, equipped not only with technical prowess but also with a comprehensive skill set that meets industry demands and positions Malaysia's workforce for sustained success in a competitive global environment.

Conclusion

In conclusion, the evolution and enhancement of TVET in Malaysia necessitate a concerted effort and strategic implementation of transformative measures. Addressing the challenges faced by the sector requires a multi-dimensional approach encompassing societal perception shifts, curriculum adaptations, inclusivity initiatives, and educator capacity building. Crucially, fostering partnerships between educational institutions and industries stands as a linchpin in ensuring the alignment of TVET programs with dynamic industry needs.

Embracing the recommendations of reshaping perceptions, aligning curricula, enhancing accessibility, and sustaining educator quality paves the way for a more robust and responsive TVET sector. Moreover, the integration of the Learning Express (LeX) program principles within TVET institutions emerges as a pivotal catalyst in augmenting the efficacy and relevance of vocational education. By infusing LeX's emphasis on practical skill development, positive perception fostering, and immersive learning experiences, institutions can significantly enhance graduates' preparedness for the contemporary workforce.

This collaborative approach, alongside the incorporation of innovative methodologies like LeX, sets the stage for a more dynamic and adaptable TVET sector in Malaysia. By empowering students with a diverse skill set, practical knowledge, and industry-aligned expertise, Malaysia can foster a workforce poised to thrive in the rapidly evolving global landscape, contributing meaningfully to the nation's socio-economic progress and competitiveness. The concerted efforts and strategic initiatives undertaken today will undoubtedly shape a more resilient, skilled, and responsive workforce capable of meeting the challenges of tomorrow.

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