Future of Technical Vocational Education and Training (TVET) &TVET in Future: (A reference to Post Covid-19)

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Abstract

TVET-The Technical Vocational Education and Training is getting aligned to meet the changing technologies and the working profiles &workforce skills for disrupting jobs. The requirements of TVET gained importance as a part of Sustainable Development Goals (SDG) 2030 of United Nations (UN) with specific reference to SDG-4 (Quality Education), SDG- 8 (Decent Work and Economic Growth), while keeping in view the importance of SDG-5(Gender Equality). In Post Covid-19, SDG-13 (Climate Action) got priority again; also, the industry job profiles changing to less human intervention moving towards automation. SDGs, CoP 21 Paris Climate Conference, and the Sendai Framework for Disaster Risk Reduction-2015 were all set to make the world a better living place and align workplace practices to meet the above three crucial global agreements' requirements.

The United Nation developed the Medium-Term Strategy (MTS) to examine the strategic direction and road map to identify priorities. The Medium-Term Strategy III of UNESCO-UNEVOC set for 2021-2023, setting out TVET institutions' requirements to meet quality skill training for a sustainable future of work. Technology has sustained humanity throughout the Covid pandemic. Technology continues to redefine how the workforce works and how we live, interact and do all activities in this Covid unsafe world. TVET skills help our future work and shape TVET programs to fulfil the education SDG 2030 framework action keeping in mind the key technological trends, ensuring its progressive reach and adaption to its desired impacts. Technology is changing the future of work through automation, artificial intelligence, and robotics needed in different occupations and various skills; therefore Government's focus required as policymakers. The budget of GoI sets new directions for growth setting Rs. 50,000 Crs. (USD 7000 Mn.) incentivising Research and Skill Development, leading India to be self-sustainable and align with the UN's goals. The TVET development path has to adapt these, leading to a new world of work in India. There won't be a better time for Reskilling in TVET than the present and make the workforce digitally ready. TVET is imbibing ICT and making processes climate-friendly through green offshoots emerging on the economic front as the critical artefacts of Vocational Education in Future. Indian TVET programs have to benchmark the advanced economies' TVET skill requirements from where India generates foreign remittances because of its demographic strength. The future of TVET has grown brighter, and TVET in the future has to be much different, aligning the technology requirements of the further years.

Key Terms: TVET, Automation, Sustainable Development Goals, Future of Work

Back Ground

The Covid-19 pandemic changed the world of work with different skill requirements as-well-as working in some specific trade and business sectors on an immediate basis. The businesses have gone digital and are expanding on digital services and delivery. Globally the future of TVET needs to change accordingly. The requirements of new-normal for various sectors intend to be ready for a future with similar pandemics threats. TVET needs to be future-ready for such conditions. The Government of India has set new directions through the new Education Policy-2020. The policy envisages the learning process's blending through technology, enabling learning customisation as per the learner's requirements. Need for high-order skills covering analysis, critical thinking and conceptual clarity with an assessment based on competency. NEP-2020 includes Skill-based learning (VET), which starts from the 6th grade. NEP needs a continuous evaluation to align with futuristic skills. The TVET professionals need to gear up to provide insights into the path traversed to the policymakers after interaction with the industry for their upcoming skill requirements. TVET professionals are also required to research innovative practices deployed by TVET institutions globally. Thereby TVET professionals to facilitate different strategies and approaches to achieve excellence within the TVET domain.

The thematic futuristic areas in TVET

The technology has moved faster in the last five years and more so during the pandemic. The world of work has changed drastically, setting new skill requirements imposed on the TVET requiring a fresh look at the policies and issues in the holistic transformation of TVET. The institutions for delivery of TVET require development for achieving excellence to meet the strategic priorities set in NEP-2020. The dialogue between the industry and the TVET institutions need an exchange to cross-share the experiences, approaches and good practices in TVET. Such a discussion needs a focus on honing the local talent in the geography while cross-sharing experience.

The shared innovative ideas and practices for excellence require sharing across the international borders on a give-and-take basis, creating a network among reputable partners with a similar approach, and finally recommending the same for adoption to the policymakers and implementers.

The digital transformation in technology is accelerating in various sectors. The industry is heading to new hybrid workforce models, which is becoming inevitable, forcing the work environment to be agile and evolving digital operating processes by an empowered hybrid workforce. The sustainability of business has now hooked on digital skills. TVET professionals require an understanding of the hybrid workforce while keeping in view the impact of technology and a direction destined ahead. TVET institutions' challenge is to make the youth manage the issues and leverage opportunities in the newly emerged hybrid workplace.

As digital transformation continues to accelerate, a range of recent workforce trends and workplace norms create many opportunities concerning the hybrid workforce's latest models for the business leaders to leverage.

Globally establishing that a hybrid workforce is inevitable requires organisations' agility for their sustainable business environment through digital learning solutions to be evolved, empowering the hybrid force.

A makeover of TVET Institutions

Post pandemic, the TVET institutions need to be strengthened in terms of the Responsiveness towards faster technological changes and be agile as-well to be resilient accordingly. Like all other sectors, the TVET teaching and learning moved online and had to be so fast that this digital evolution would have taken years got ready in weeks. However, the digital divide based on income and geography with no devices and wi-fi available got highlighted. Post Covid-19, everyone's lives got reshaped, and accordingly, retraining of the existing work teams also became equally important. In the absence of proper infrastructure, the delivery managers of TVET faced difficulties in making an immediate transition providing remote learning and knowledge delivery methods and are learning the best practices and building digital competencies through peer learning evolved elsewhere in response to Covid-19. Many challenges face the TVET delivery managers that include an immediate increased demand in terms of digital delivery programs and upskilling the affected workforce members mitigating the economic and social impact they faced, and reading the fresh batch with more recent skills. The resilience of the TVET institution also gets enhanced at the same time. The Internet has come up well as a TVET knowledge delivery medium. Still, it can improve learning experiences and the outcome of knowledge delivery and make the participants ready to be entrepreneurs. For entrepreneur training through TVET institution and its mentors are required to be prepared suitably.

Entrepreneurial Learning at TVET Institutions

The geopolitical and economic equations have changed post covid. All countries are relooking at their supply chain sources. Most of the world has started looking at sources alternate to China, called China+1 policy. The Government of India has also emphasised Self Reliant India (*Aatma Nirbhar Bharat*). Accordingly, it has banned the Power Sector Equipment dumped into India with all the malware and crozons. Out of 600 equipment required for Power Sector, only 32 items now is allowed to be imported. Other sectors are also following similar steps. *This self-reliant India philosophy creates more jobs for the Indian youth and needs more skilled hands updated with futuristic technology.* TVET development for entrepreneurship starts with cultivating a mindset and move on to acquiring Knowledge and Skills for creative ideas and take on entrepreneurship as a practice by setting up a business venture. The concept of entrepreneurship fits nicely into India's Government's Policy and gel well with the innovation. Entrepreneurship is also aligned to SDG #4 on quality education and SDG#8 on decent work as-well-as economic growth, highlighting decent jobs and setting a canvas for an ecosystem that fits entrepreneurial TVET's Institution. Readying the youth with entrepreneurial aptitude, we may consider add-on qualifications/training to all those intending to get into entrepreneurship.

TVET Institutions to include competitiveness

For India becoming globally competitive, the processes are required to meet the benchmark of efficiencies of the approach of manufacturing and improve energy intensity of manufacture, make higher crop per drop of water and less pollution per unit of energy consumed thus making skill, knowledge, attitude and values interwoven with competencies before getting into entrepreneurial action. The entrepreneur requires readiness in the width and depth of multi-skills. The entrepreneurial learning modes cover peer learning rather than a passive listener to the mentor, learning hands-on, interaction/debate with the TVET mentor and discussions with others, learning under pressure/crisis and knowledge about own mistakes, and peers' industry, and problem-solving. The Vishwa Mitras (Gurus/

Mentors) are required having exposure of lot many years. Thus, working on 3 D of Skills - the width, depth and gaps (Skill Evolution or Skill Revolution).
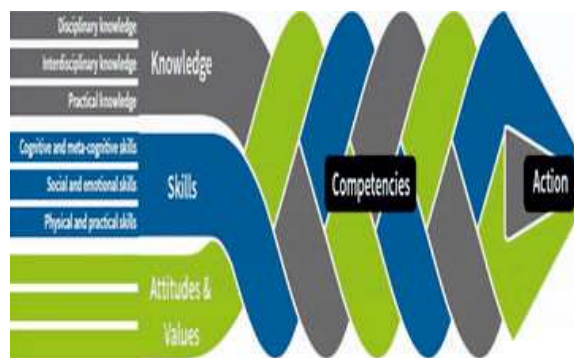

Fig. 1 : Interwoven attributes of TVET deliver

Delivery Mode of TVET

Face to Face (F2F) or Face to Screen (F2S) is an issue that emerged in the post-covid era. Various researches of the pre-covid period or the studies that have come up post-covid indicate equal effectiveness of both the delivery modes of F2F and F2S. Even in F2S learning, the teaching and learning environments differ, especially in TVET skill delivery.

Review of Literature

"Policy Note and E-Learning in TVET- ILO"

TVET through ICT applications can have simulators and Virtual Reality (VR) or Augmented Reality (AR), Massive Open Online Courses (MOOC) / Swayam, videos of youtube. Knowledge delivery through ICT has caught the attention of the Indian Government, which is making all the Village Panchayat (Gram Panchayats) getting connected. However, the learner's self-discipline is of utmost importance, and the learner has to manage feelings of isolation, including missing peer learning. Internet speeds have been a problem in India in several locations, which policymakers and implementers need to address to make the Indian economy robust. The initial cost of designing the system and equipment for the delivery of TVET needs immediate attention.

The attention of the Policymakers required on the following:
i.   ICT becoming a part of TVET
ii.   Minimisation of the digital divide
iii. Accessibility
iv.   Industry Institutions participation and review of TVET content
v.   Cyber Security to be ensured. (ILO, n.d.)

"Vocational Education Is Future of India"

India has demographic strength, with 54% youth younger than 25 years of age. However, India also has a high rate of secondary school dropouts, have fewer opportunities for vocational training due to a shortage of training institutes and that too not without the latest sectors like automation coupled with a scarcity of skilled teachers in the country. India can take advantage of the global imbalance of youth (47 Mn. Surplus in India – 7 Mn shortage in the USA) and make the youth ready with the skills required by other countries to enable India to earn foreign remittances. The program "Udaan" covering IT, BPO, and retail sector, Polytechnics giving 3 Years diploma and "Parvaaz" for school dropouts / left-outs and minority students are in the right direction. (Kalsi, 2020)

"*Vocational Education and Training during Times of Economic Crisis: Lessons from Around the World- a book by Matthias Pilz*"

Matthias has elaborated that initial designing and safeguarded structured process for VET exports can consider the following heads under a chapter on"Policy Borrowing in Vocational Education and Training (VET)":

◊ *Prioritising the VET disciplines:* Driven by demand and on ownership basis of individual mentors

◊ *Power of the VET system:* Determined by modern rooms with necessary, updated equipment, appropriate curriculum and the teaching notes and materials.

◊ *VET Delivery Team:* Well-paid Qualified mentors/ teachers.

◊ *Poaching of Workforce:* Avoidable with loyalty and reasonable compensation

◊ *Progression for Growth:* Skill testing by qualified processes and lead to progression routes to general education.

◊ *Privileges to the VET mentors:* Respectable pay and good working conditions (Matthias, 2017, pp. 1–495).

Paper "Tracing Teutonic footprints in VET around the world" compares technology and VET transfer to the USA, China and India. This paper reveals that Germany's dual education system mismatches with the education system elsewhere except in China, where the system is somewhat closer to Germany. The VET export to the importing companies becomes a hybrid of Germany and the importing company's.(Pilz & Li, 2014).

Similarly, the paper "Does Dual Training Make the World Go Round?" compares China, Mexico and India absorption of the TVET transfer of TVET knowledge. (Pilz & Wiemann, 2020). The authors have also worked out the following typology of the TVET for various countries. They have compared the other countries with their own country, i.e. Germany.

Table 1: TVET Systems Typology among various countries

Countries	Formation of Skills	Stratification	Standardisation	Learning Practices
The USA	Individualised with Low state and low employer activity	Low	Low	High
Canada		Low	Low	High
India		High	Low	High
Mexico		High	Low	High
France	State Dominant	High	High	Low
Japan	Organisation Dominant	High	High	High
Germany	State and organisation dominant	High	High	High
China	State Dominant	High	High	Low
(Pilz & Li, 2014)				

TVET knowledge delivery in person or Virtual

F2S fully web-based, or a blend/ hybrid of F2F and F2S or the web-based add- ons (supplements), leading to a suitable mode out of diverse and complex methods to be matched and adapted for a wide TVET range of profiles by the TVET institution. E-learning has conquered the boundaries of time and space. However, the learning environment for each discipline of TVET is diverse. In terms of equality in social justice, TVET knowledge delivery is accessible even to the remote areas of a vast country like India. The drawback of the program participants' digital literacy level can be covered through F2F, making the program a blend of F2S and F2F. The ICT delivery content can be in the local language. It can respond to skill requirements that are rapidly changing to meet the fast changes in socio-economic and the latest technological developments that are continuously evolving, thus making the participants be a Life-Long-Learner. And the worry is about the active participation of the learner.

Effectiveness of Online learning

Face to face in a classroom setting or through Virtual training, Training through distant education, or a blended training needs analysis. If designed consciously and carefully, the training modules have the potential of training in a traditional classroom. The virtual training platform offers the advantage of saving time and travel costs for the trainees or the trainer(s). The virtual platform also benefits from making many single organisations or single location participants join the training program without being away from their respective work locations to avoid work hindrance or job loss hours. Regarding virtual training, effectiveness established through a survey of graduates conducted by a researcher, Dr David Maxfield, who demonstrated the platforms equal effectiveness (David, 2016).

Fig. 2: Facial Reading expresses the online learning involvement Aussie data scientists have created tracking technology to show what the future of on-line learning could be.(ABC Radio Sydney: Dayvis Heyne)

Fig.3: Blended Skill Delivery

The survey also included participant engagement, skill retention, change behaviour, and results for the same. The survey also establishes that knowledge sharing and knowledge delivery (rather than work performance skills) like legal aspects, safety procedures, and policy-related matters have the same outcome level as in the classroom in terms of retaining knowledge. The Training Delivery Mechanism, at best, can get blended for complex core skill knowledge delivery.

Global Context of online Learning and Open Learning

With increasing government initiatives to encourage the adoption of smart classrooms for education, there is a significant worldwide growth of online webinar tools or platforms. Training institutes, though they have a slightly different requirement than educational institutes, have witnessed the exact change. In this case, the participants are not of the same fixed organisations attached to the training institutes. Training institutes don't have any defined coursework requirement; therefore, software requirements for knowledge learning are slightly different from university or college. The software market for live webinars was estimated to be $451.17 mn in 2018 and expecting to reach $789.86 mn by 2027, growing at a CAGR of 6.43%. According to a new research report, the Video Conferencing Market size exceeds $50 billion by 2026, as per Global Market Insights, Inc.

On the other hand, Massive Open Online Courses (MOOCs), which aimed at unlimited participation and open access offered online, has witnessed a growth of more than 40% over the last three years. As in Fig. 4 & Table 2, MOOCs was started in 2008 and gained momentum from 2012, an affordable and flexible way to learn new skills suiting everybody through supplemental learning, lifelong learning, corporate eLearning and training, and more.

Similarly, the other platforms are equally popular. However, the efficacy of TVET requires testing
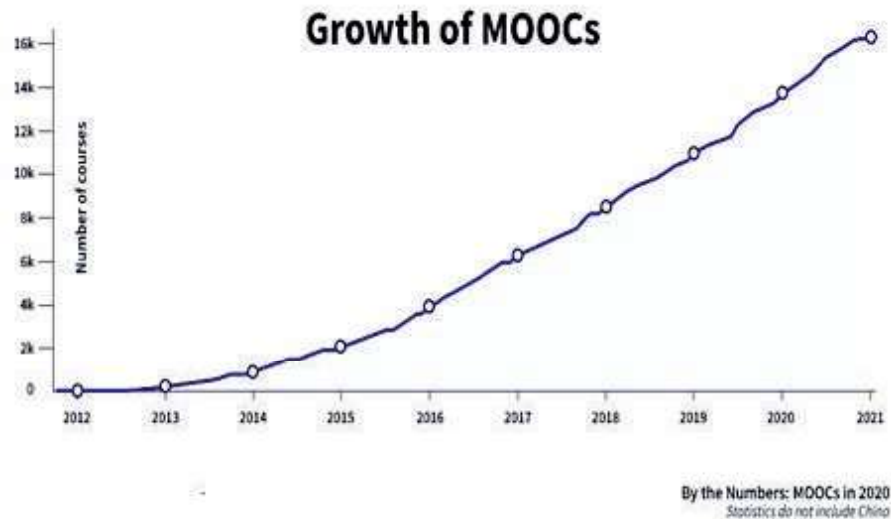

Fig. 4: On Line MOOC Programs Growth

Table 2: Participants on On-Line Program

MOOC Players	Learners	Courses
Coursera	76 million	46,003
edX	35 million	3,100
Future Learn	14 million	1,160
Swayam	16 million	1,130

The skill and knowledge resource platform, be it the latest concepts like IOT4.0, AI, Cloud Computing or even software learning like python, Java, or mere MS Excel, is very readily available on the MOOC platform. MOOC has revolutionised the learning process by providing anytime and anywhere access.

The virtual platforms need some good lesson learnt so far

Change of the knowledge delivery modalities

Training modalities are changed frequently in the physical classroom, seeing the interaction level drooping down or otherwise. In a virtual classroom, to have full attention and involvement from time to time, avoid the participants searching for something else on the web or attending e-mails or WhatsApp messages. These are the notorious detractors in learning and, eventually, skill retention.

Interaction and Practice time not to be skimped: Quiz or interaction, Polling can be adapted. The technology allows for breakout sessions with a few participants on the same virtual platform. The trainer or facilitator can facilitate as an instant coach and convey his feelings to the group.

The Virtual training program designing for spaced learning is possible. Planning of the sessions is not more than two hours duration. As participants or the trainer has travelled from elsewhere, finishing the training program in the specified time is essential in the physical classroom.

The survey conducted by Dr Maxfield also established the 100% satisfaction level of the participants with 90 % scores on the mastery of training skills, which compared 1% higher than the classroom participants' cognitive scores. The behaviour change of participants in virtual delivery matched that of participants' behaviour as in physical classroom; however, in the long-term, the learning institute's maintenance was higher by 2% than virtual platform participants.

Distance Learning / Off-Line Learning vs live Virtual learning: Internet-based learning has been on the rise in the USA, with 34% of Universities opting for the same, including big schools of Universities. At one time, it had 90,000 students enrolled. India also has Open Universities, and they are conducting counselling sessions through virtual mode viz. Facebook, Google meet, Zoom etc. They are receiving and evaluating the assignments through e-mails. Thus Online offers the students to attend the learning in the comfort of their clothing (pyjama) and convenience and student's flexibility without compromising the academic calendar's quality and time frame. These programs are still running, but the dropout rates are higher than physical meeting and interactive classes. The Virtual training platforms come in handy to provide online training to fill the gaps.

Data analysis of the impact of Virtual Learning

The Training (Learning and Development) functions by individual organisations have stopped such programs by inviting faculty members to their organisation. There has been a reduction in the training budget due to travel cost reduction. The Centre for Corporate Learning Innovation(2020a) indicates that 25% of the organisations surveyed have reduced the budget. Only 5% of corporates have positioned their Training Team members elsewhere, and 57% of critical business initiatives requiring intermittent or new training needs of their workforce. Thus, meeting training needs with the reduced budget due to travel and relocation of their Training team.

The corporate planned to adopt a Virtual Training Platform. However, the survey results of the corporate in setting up of virtual training platform are as under:

Table 3: Corporate Learning and Development Survey

Parameters	% of Corporates surveyed
Virtual platform's development process lacking felt	28%
Unsure of technology to deliver such programs	21%
Corporates lacked expertise	15%
Shortages in resources to set up virtual platforms	16%
Funding need a handicap	11%
Other categories of the biggest challenges these corporates face in converting their In-Person Programs into a high-quality Virtual Platform	9%

The future of the TVET looks brighter with the above data

Readying for Futuristic Skills

The focus of the Skill Utilisation is "Vocal for Local" and adding the incremental skills as adjacent skill (as shown in Zone B) in Fig. 5, making an individual as multi-skilled under modular skill packages to the core skills as existing with the individuals (as per Zone A) acquired by an individual. In the next step, to consider the transformational abilities to bring in futuristic skills.
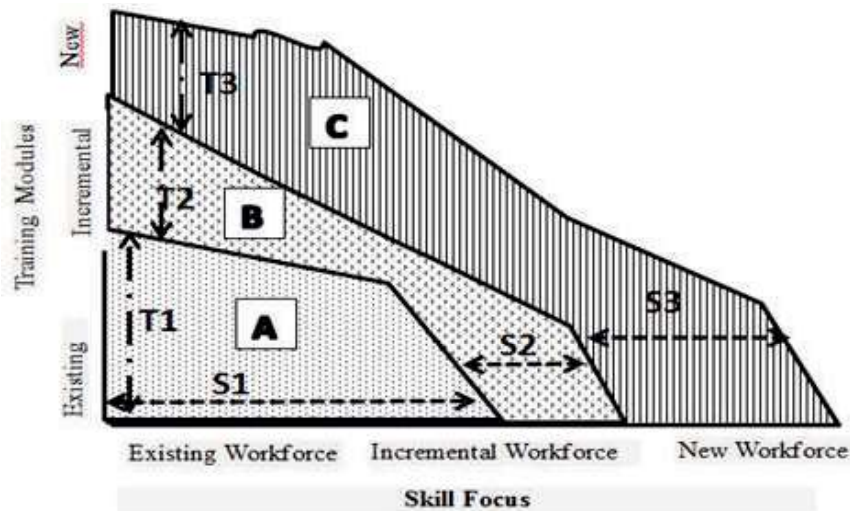

Fig. 5: Skill transition from existing to futuristic

This model also helps address India's primary concerns (GoI) to provide Skills for livelihood up to the village level. GoI also desires to start employment generation entrepreneurs (job creators) by providing low Technology Skills (compatible with the local population's education level). The Skill level is to be progressively replaced by high technology skills, followed by remote monitoring skills requiring minor intervention. Although this approach raises a concern of Lower Skill level attracts lower wages. Incidentally, this also fits into India's philosophy of Vocal for Local. And industry Returns with a Skilling Reforms agenda post-C-19.

The existing workforce in area A with Skill level S1 has gone through a level T1 of Training as job entry requirements need additional training T2 through incremental Training Modules to update the gradual changes happening on their day-to-day schedule achieve a higher skill level S2. Now the existing workforce in Zone A got upgraded to Zone B workforce. Similarly, Zone B (the existing and new entrants) will need further training T3 to meet the new job requirements. Due to the passage of time, Incremental workforce having joined as additional or replacement of retiring ones and would have come with S2 level of skills as job entry requirements also need training module T3. The bent lines above indicate the Skill level difference and difference in Training needs between diversified members in the workforce needing a different quantum of training to achieve a skill level required for the job based on varying skill focus or needing a F2F interaction.

The technology is changing, which demands upgraded skill levels from the existing workforce, or the force that joins the intermittent stage gets transformed into a new era workforce.

Re-Thinking about TVET in Post-Covid World

Covid-19 made the business difficult -as-usual, but not impossible. TVET institutes, by their creativity and tenacity, require a focus on their role of training, which assumed higher importance due to the ever-dynamic reform process in the Indian Industry. The TVET institutions need to take up the challenge of momentum, growth and engaged their team and industry stakeholders for new training inputs. This step takes TVET institutes to survive and thriving eventually.

Multi-skilling the rural youth is away from the skilled workforce's availability; the rural workforce has to be self-sufficient and multi-skilled. On line, learning can add value to those interested in multiskilling like the alphabet letter "T" or scientific "Pi" at one's own pace and convenience.
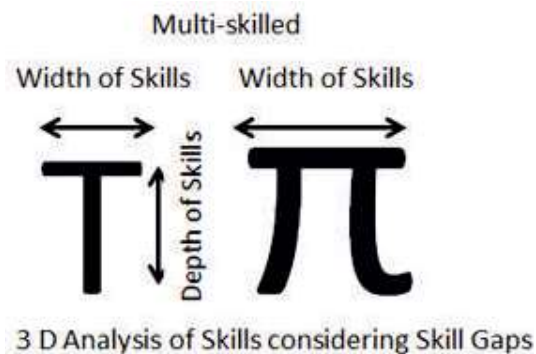

Fig. 6: Skill Width and Depth depiction

TVET institutions have to undertake 3D modelling of the Skills (width of the skills needed) and depth of specialisation required as per the employers' requirements. The authors assess the Skill gap by interacting with the Trainees during various webinars conducted understanding made regarding time duration required to fill the skill gap in respect of needed skill. The distributed energy generation and consumption created by Green Energy like Solar and Wind are much in demand. The NSQF levels 01-06 shown in the column across 1-5 of the Skill level in the top row illustrate the Skill development process.

Assessing the skill Gaps

A Primary Survey

A primary survey of the electricians in Karim Nagar Andhra Pradesh was undertaken through their Assistant Engineers to assess the skill level available. The results are indicated hereunder and compared with skill levels of similar occupational personnel in the USA.
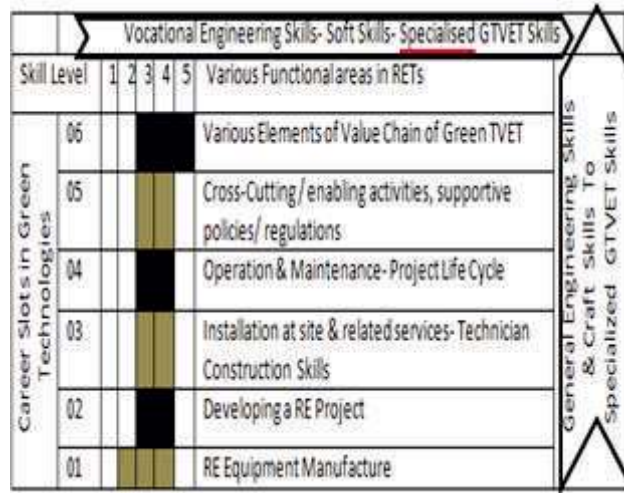
Fig. 7: Vocational Engineering Skills in Green Technologies

Table 4: Scores of the Foundation Skills of the Sample Survey vs USA Reference data - Electricians

No. of Skills=3 6 n_1=15 India, n $_2$=36 USA	M India	M USA
Effective Read Capable	2.93	3.5
Effective Write Capable	2.73	2.8
Effective Listening Capability	2.71	3.2
Effective Speaking Capability	3.06	3.0
Application of Basic Mathematics	2.92	3.6
Attitude to Cleanliness	3.03	3.5
Idea Generation & Creative Thinking	2.87	3.2
Decision-Making Skills (up to individual's powers)	2.81	3.8
Recognising and Solving Problems	3.02	4.0
Capability of Visualisation	2.90	3.0
Enthusiast to continue learning - Teachable Fit	2.92	2.8
Reasoning Skills	2.97	2.8
Responsibility Owning	3.18	4.0
Self-Worth belief	3.06	4.5
Group Sociability	3.09	3.4
Self-Management	3.14	3.2

Preferences of TVET discipline are region related as per the USA survey as under Fig. 8, also needed in India.
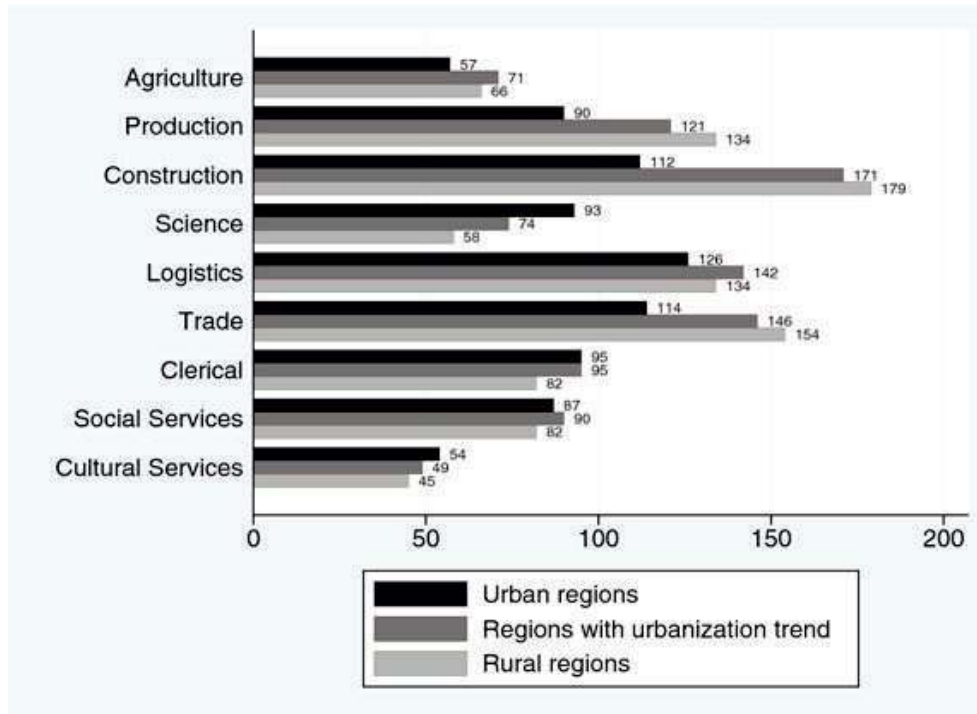
Fig. 8: VET distribution in the USA

Challenges of Online TVET

The participants' attentiveness in the virtual delivery of knowledge has been brought up these days (especially school children). The disruptive technologies provide us with software to learn the attention of participants in online learning. However, the expansive Internet and the accessibility of technology have generated a surge in demand for web-based teaching and learning. Online education is quickly infiltrating school districts and colleges across the nation. Lower Logistics, Anytime-Anywhere Accessibility, Expanded Variety features of online learning provides distinct advantages over conventional face-to-face training

TVET - Refine – Redefine

The future TVET packages need refinement and redefined to meet the changing world moving towards multiskilling and getting into the virtual training mode.
1. We need to re-align our Talent Development programs with the Present-day Technology as per the latest Skill Standards (Sector-Specific Skill Council Qualification packs) to meet the Industry requirements
2. Online Training expand TVET institutions footprint for lesser developed countries for growing Talent development business. India has been a training provider in many countries. India has to hold that segment of Trainees also continuously
3. Online Programs allows the learned faculty to share knowledge without the hassle of travel and be Vishawmitras (Guru- Talent Developers), and they can help while blending Skill development.

4. Speed and Scale can be increased through Online Programs and help achieve "*Atma Nirbhar Baharat*" with the multitalented workforce.

Emerging Model

The world is **V**olatile, **U**ncertain, **C**omplex, &**A**mbiguous a term VUCA is usually assigned to such a situation. The Prescription of VUCA is VUCA itself with various ingredients; VUCA (Volatile) World is Compounded by The Disruptive Technologies, driven by Industry 4.0, giving us a prescription for a new Vision, Understanding, Clarity and Agility (VUCA). Based on the prescription, a blend of online learning and F2F or O2O (Face to face or One to One Learning for catching up on Skills is likely to emerge as a winner. There are some issues in the online delivery the participants may face. The disadvantage of seeking clarification by a participant is that the individual participant is hesitant to ask for the same to avoid embarrassment if the clarification sought is of the right quality or too basic and the colleagues do not make fun. The same reluctance exists in classroom interaction also. In The Classroom, in personalised learning, the participant does not get individual personalised time from the speaker due to lack of time. The clarifications can be sorted by e-mails, alternatively by F2F or O2O, because of the digital connection. Online learning offers greater flexibility by going through the recorded online session. Thus, VUCA as Facilitator helps us in Life Long Learning for Life Journey in getting multi-skilled or up-skilled.

Conclusion

The future of Training Institutions is brighter as well as challenging. India needs to meet the Training Needs of the Indian workforce economically with Speed and on a Scale. Virtual training is a good disruption that may require a top-up by blending with Face to Face (F2F) or One to One (O2O) mentoring to ensure maintaining the safety standards vital for lives. The Tokyo convention under UNESCO's agies has recommended the quality assurance parameters fixed upon online education subject to be recognised. (Sharma, 2020).

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