Developing a Skills Policy for the 21st Century

ADB Education Strategy 2030 (TVET)

DR N VARAPRASAD
SINGAPORE EDUCATION CONSULTING GROUP
WWW.SECGLLP.COM
N_VARAPRASAD@SECGLLP.COM

14 JANUARY 2019

Traditional skills narrative

We have been used to categorising skills as

- Blue collar (machine-facing)
- Pink collar (people-facing)
- White collar (computer-facing)

These are inadequate in skills development policy-formulation.

Reframing TVET

First, let us establish that Skills are not independent of Knowledge.

We cannot talk of Skills as if it could exist or be taught by itself.

Reframe TVET as an integral part of the Knowledge Economy.

Skills and Knowledge go together

- Every job requires a level of skill mastery
- Skills are multi-faceted, multi-layered –
  - eg. photography, teaching, port gantry operation, surgery.
- Skills cannot be separated from knowledge;
  - Tour guide, retailer, nurse, machinist, driver, tailor.
- Most accidents and errors occur when either skills or knowledge is inadequate.
  - Ignorance and incompetence can lead to errors.

We are paid for what we DO with what we KNOW.

SKILLS TAXONOMY

- Artisanal (traditional) skills
  - Weaving, jewellery-making, sculpting, cooking, dress-making, watch-repair, . . .
- Technical skills
  - Driving, building, carpentry, machining, auto-repair, electronics, nursing, call-centres,
- Digital skills
  - Web-design, machine language, cyber-security, data-analytics, AI, e-commerce, . . .
- Social skills/Empathy
  - Teaching, public relations, hospitality, sales, customer service, child care, leadership, .
- Analytical skills/Numeracy
  - Engineering, finance, forensics, accounting, data science, . . .
- Thinking skills/Cognitive
  - Systems analysis, planning, strategising, policy-making, learning, . . .
- Creative skills
  - Design, writing, fashion, movie-making, curating, music, art, . . .
- Specialised skills
  - Medical, legal, fintech, military, sports, economics, languages, gaming, . . .

VALUE MAXIMISATION

Value of skills is maxed by combining two or more categories, e.g.

- Artisanal and technical (precision engg)
- Creative and technical (product design)
- Digital and social (social media marketing)
- Creative and artisanal (jewellery/fashion design)
- Specialised and social (teaching)
- Analytical and digital (big data modelling, AI)
- Cognitive and Social (business/entrepreneurs)
- Empathatic and numerate (Social scientists, ADB staff)

Skills + Knowledge + Attitude

- Attitude is the 3rd key ingredient
- Attitude towards
  - Quality of outcome
  - Pride in work
  - Reliability of one's word
  - Professional ethics and standards
  - Continuous improvement and learning
- Missing from most curricula.

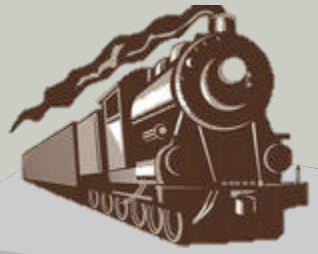
The World of Work is Changing Rapidly

Driven by

- Technology, connectivity, mobility
- Demographics and shifting markets
- Economics and business models
- Globalisation (and anti-globalisation)
- War for talent

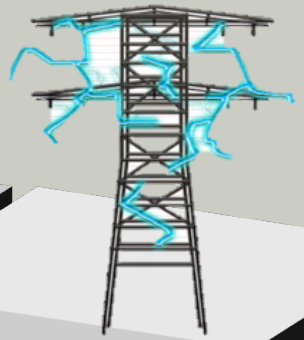
Innovation in Production, Organization of Work, Knowledge & Technology

1st Industrial Revolution circa 1800



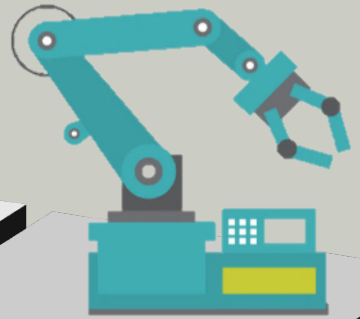
Advent of mechanical production powered by water and steam power

2nd Industrial Revolution circa 1900



Electricity enabling mass production and division of labour

3rd Industrial Revolution circa 1970



Electronic and IT leading to automation

4th Industrial Revolution circa 2000

Algorithms for integrated smart solutions

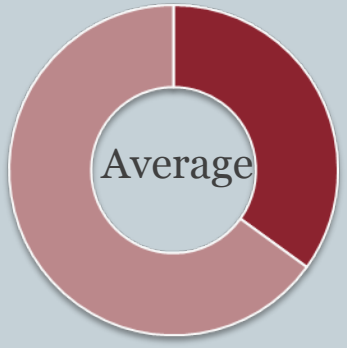
Manual skills ---------- Cognitive skills

Source: Brynjolfsson & McAfee, 2014; Victor & Boynton, 1998

Jobs At Risk

- Professionals
- Managers
- Executives
- Intermediaries
- Jobs that are repetitive
- Jobs that can be outsourced
- Jobs that lack creativity and feeling

More Jobs are Susceptible to Automation with Increased Use of Smart Technologies



35%

of core skills will change between 2015 and 2020*

Disruption across industries in terms of core skills

45% Financial Services & Investors
42% Basic Infrastructure
39% Mobility/Transportation
35% ICT
33% Professional Services
30% Energy
30% Consumer
29% Healthcare
27% Media, Entertainment & Information

Probability of Automation^	
Telemarketer	99%
Bank teller	98%
Accountant/auditor	94%
Butcher	93%
Insurance sales agent	92%
Crane operator	90%
Taxi driver/chauffeur	89%
Motorcycle mechanic	79%
Bartender	77%
Librarian	65%
Massage therapist	54%
Economist	43%
Actor	37%
Athlete	28%
Airline pilot/flight engineer	18%
Dancer	13%
Nuclear engineer	7%
Postsecondary teacher	3.20%
Chief executive	1.50%
Pharmacist	1.20%
Dentist	0.40%

** Source: World Economic Forum, 2016 ^ Source: Frey & Osborne, 2013*

The World of Work is changing!

Many policy questions arise –

- Do we train for employment or employability?
- Do we train new entrants to the workforce or those already in the workforce?
- Do we train for a perceived economic need or for self-empowerment?
- Do we train for local requirements or global demand? Can the internal labour market absorb all the new entrants?

END OF PART 1

Policy Questions

PART 2

Q1

When do you start skills training?

after grade 6, 10 or 12?

Issues:

1 Is TVET post-basic, post-sec or higher-ed?

2 Massification of HE through private tertiary educ.

Related: What is the selection process for TVET?
What is the optimum CPR in TVET/General Ed?

Q2

Training for Local needs or Global demand?

e.g. Apple iPhones

Related: What is the economic growth strategy of the DMC? Attracting FDR or indigenous development; local consumption or export? Employment creation or

Q3

National Qualifications or International Qualifications?

Related: Are NOSS really necessary? Do they assure standards and employment as promoted? Is industry capable of setting these standards in DMCs? Can they change fast enough? Or do we just focus OSS on regulated occupations (welding, driving, nursing, etc).

Q4

Training for industry (pre-job)

or

Training by industry (on the job)?

Issue: What will incentivize industry training? What if such industry does not yet exist?

Q5

Training for

Employment (today)

or

Employability (tomr)?

Issue: What skills + knowledge will ride the changes that are underway? How should technical teachers be trained? Who knows better – ADB, industry, government agency?

Q6

Training for
a specific occupation
or
For Empowerment (holistic)?

Q7

Training for New Workforce Entrants or the Already Employed?

Issue: Which is the priority?

Q8

Focus on

Hard/soft Technology

(eg. machining, mobile apps, robotics)

or

Service skills

(eg. Tourism, HR, Marketing)?

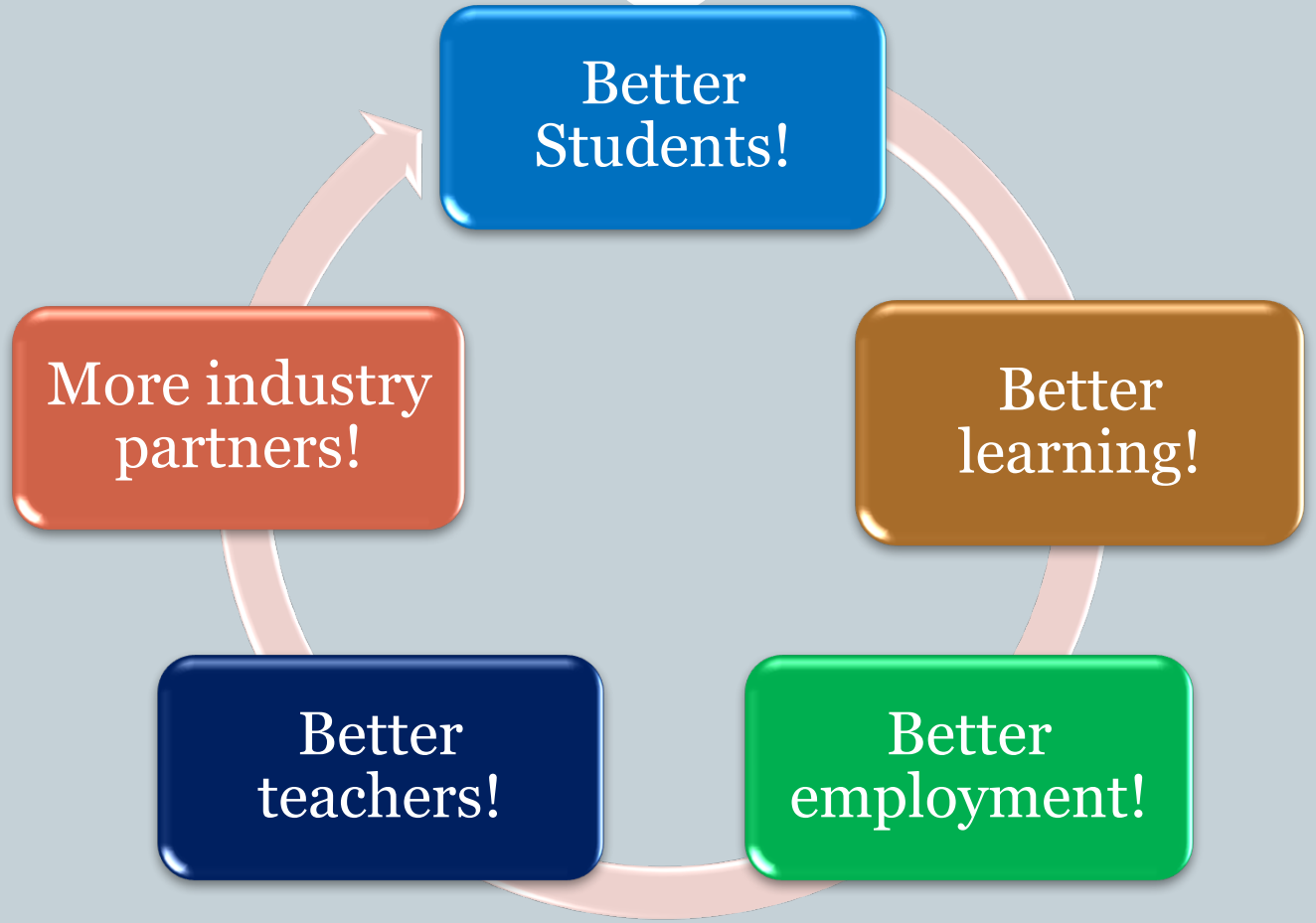
Q9

Where is your leverage point?

- facilities?
- teachers?
- students?
- school leaders?
- branding?
- industry partnerships?

For the most bang for the buck.

Virtuous Cycle



Q10

Training for Gender equality

Issue: How to keep skills development gender neutral in DMCs

Q11

Who Pays?

- State?
- Individual?
- Industry?

Related: Training vouchers? Industry training subsidy, company employment subsidy? PPP?

Issue: Public or Private Provision of TVET?

Public vs Private Provision

	Private	Public
Returns	Short term profits	Long term economic
Investment	Low capital costs	High capital costs
Fees	High fees	Subsidised fees
Programs	Soft courses	Technology and Skills

Outcome: Under-qualified and poorer students (overspill) go private and end up with poor employability

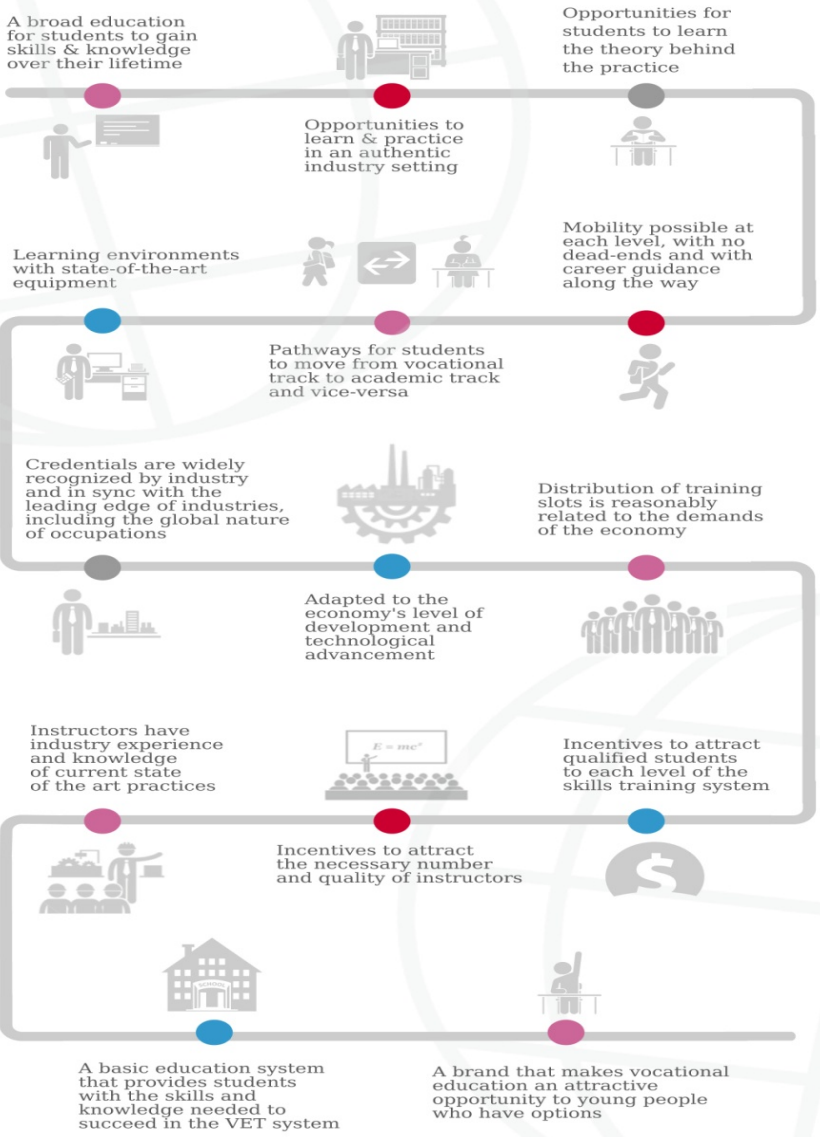
Q12

What about the informal sector that's so large in many DMC's?

Issue: Have we been too focused on the formal / corporate sector in skills development?

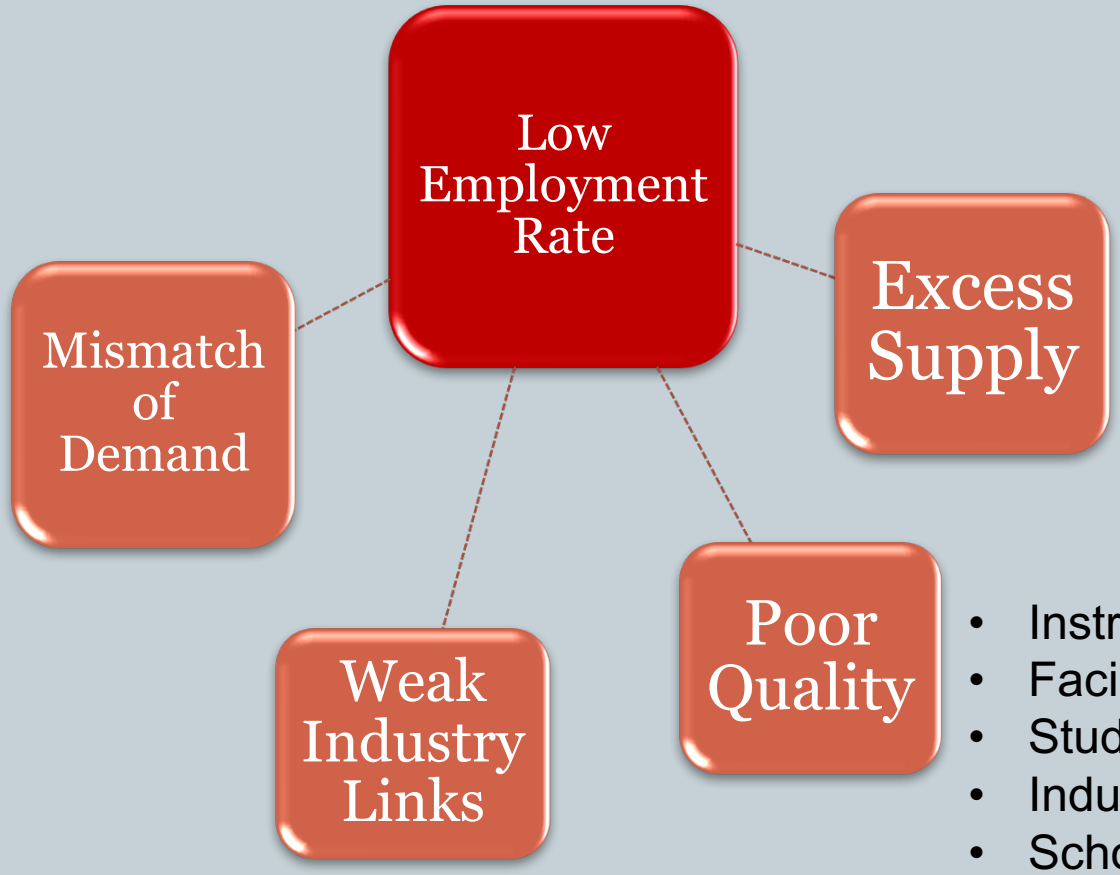
KEYS TO A SUCCESSFUL VOCATIONAL EDUCATION AND TRAINING SYSTEM

Center On International Education Benchmarking



www.ncee.org/cieb

Critical Issue in DMCs



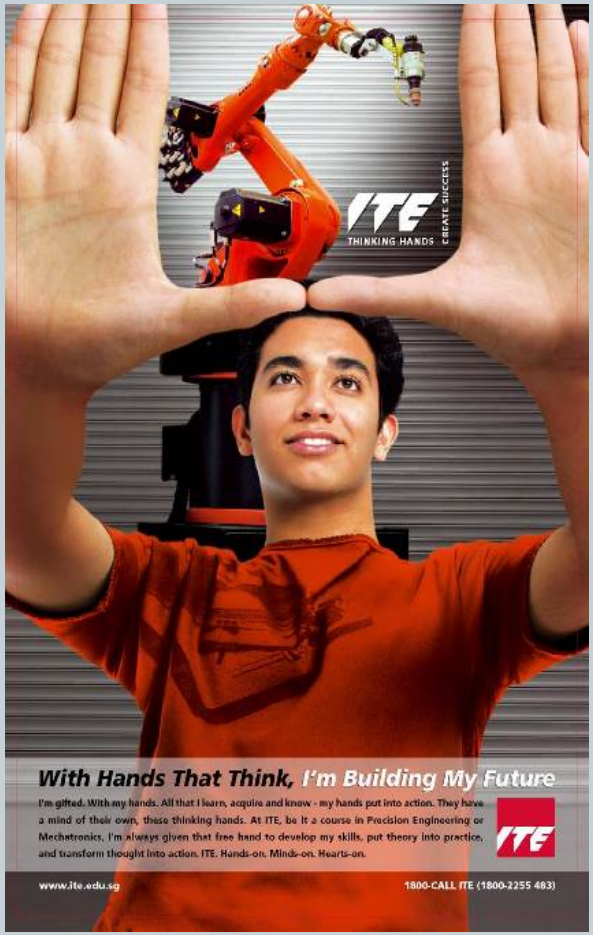
- Instructors
- Facilities
- Students
- Industry partners
- School leaders

Attracting Better Students to TVET

Need to re-brand TVET, change perceptions.

Does ADB have an advisory role here?

ITE “Thinking Hands” campaign



THANK YOU!