TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET)

MINISTRY OF EDUCATION, MALAYSIA
BACKGROUND DATA

Population : 28 million
No. of schools: 9,987
No. of schools with Voc Subjects: 860
No. of students: 5 million
Students per cohort: 500,000
Voc Ed in school system : MOE
Voc. Training post-secondary: 7 ministries

Voc. Schools: 70
Enrolment 2012 : 97% (35,000) – 5% in VocEd
No. of voc teachers: 3,000

Pilot Vocational Colleges: 15
Enrolment : 98%

ISSUES faced by MOE

1. How to enhance the capacity in VocEd with the participation of other ministries?
2. Improve enrolment in VocEd
3. Improve Certification
4. Improve facilities
5. Improve links with industries
6. Cater for job market/Industries
MAIN CHALLENGE OF MALAYSIA TVET LANDSCAPE

Fragmented landscape with multiple qualification systems and non-uniform curricula standards

TVET delivery system (overview)

Implications
- Limits cohesive strategic planning due to silo’s, e.g. limited tracking and assessment of multiple initiatives
- Multiple certifications creates confusion among stakeholders, incl. potential investors and employers
- Quality issues arise due to lack of central oversight of programmes offered and insufficient performance monitoring

Malaysia Qualification Agency (MQA) is leading the initiative to harmonize Malaysia TVET Provision
## MALAYSIA TVET PROGRAM STANDARDS

<table>
<thead>
<tr>
<th>MINISTRY/INSTITUTIONS</th>
<th>PROGRAM STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOE, MOHR, MOA, MOYS, MOW</td>
<td>NOSS, MQA</td>
</tr>
<tr>
<td>MOHE (Polytechnics, Community Colleges)</td>
<td>MQA</td>
</tr>
<tr>
<td>MRRD (UniKL, MARA IHE)</td>
<td>MQA</td>
</tr>
<tr>
<td>MRRD (GiatMARA Skill Institute)</td>
<td>NOSS/ GiatMARA Standards</td>
</tr>
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NOSS : National Occupancy Skill Standards

MQA : Malaysia Qualification Agency Standards (Malaysia Qualification Frameworks)
### MBOT will enhance the career path of TVET graduates

#### Malaysian Qualification Framework

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>NA</td>
<td>NA</td>
<td>Doctorate</td>
<td>Principal Technologist / Executive</td>
</tr>
<tr>
<td>7</td>
<td>NA</td>
<td>NA</td>
<td>Masters</td>
<td>Senior Technologist / Executive</td>
</tr>
<tr>
<td>6</td>
<td>NA</td>
<td>NA</td>
<td>Bachelors</td>
<td>Technologist / Executive</td>
</tr>
<tr>
<td>5</td>
<td>Advanced Diploma</td>
<td>Advanced Diploma</td>
<td>Advanced Diploma</td>
<td>Senior Technician</td>
</tr>
<tr>
<td>4</td>
<td>Diploma</td>
<td>Diploma</td>
<td>Diploma</td>
<td>Technician</td>
</tr>
<tr>
<td>3</td>
<td>Skills Certificate 3</td>
<td>Vocational &amp; Technical Certificate</td>
<td></td>
<td>Junior Technician</td>
</tr>
<tr>
<td>2</td>
<td>Skills Certificate 2</td>
<td></td>
<td></td>
<td>Senior Operator</td>
</tr>
<tr>
<td>1</td>
<td>Skills Certificate 1</td>
<td></td>
<td></td>
<td>Operator</td>
</tr>
</tbody>
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**Proposed Pathway For Malaysia TVET Graduates**
Economic growth demands additional ~1.3Mn quality TVET workers

Our national economic growth demands an increasingly higher number of TVET graduates going forward

Assumptions:
1. Total to be delivered by TEVT system: graduates required for NKEA (1,330), with 15 to 20% moving to further education + graduates to be delivered for non NKEA sectors based on 2010 data (350,000) and excluding 350,000 diplomas to be produced by universities (public, private and KTAR. – source MOHE). 2. Optimization: additional capacity and redeployment to diplomas at Polytechnics (target: 356,000 diplomas by 2020), planned new institutes at MOHR and MOYS and hypothesis of potential optimization of utilization rate to 100% vs. 80-90% on average today (excl. Polytechnics). 3 Total graduates per year: 25 to 30K, or 50K capacity seats based on average of 2 enrolment years per graduate.
Source: Data request from TEVT agencies, Tracer Studies at MOHR, MOYS and Polytechnics, NKEA forecasts, BCG analysis
Skilled Workers Demand

Labour shortage today

- Textile labour shortage of 70k
- Plastic manufactures labour shortage of 30k

- Manuf’ing: 327,798
- Agriculture: 269,272
- Construction: 107,421
- Financial l’mediation: 89,044
- Hotel and restaurant: 55,360
- Wholesale and retail: 54,079

Hospitality labour shortage of 150k

Number of high income jobs\(^2\) required, 2020

- Finance: 220,314
- Tourism: 180,047
- Business: 97,705
- E&E: 63,219
- H/care: 46,006
- W/sale: 40,266
- Retail: 28,217
- Telco: 20,717
- Agri: 13,977
- Palm Oil: 6,973

1 Preliminary labour estimates from NKEA labs
2 Jobs commanding RM 4k/month and above

SOURCE: MOHR Labour and Human Resources Statistics 2008, interviews conducted with industry association representatives
BLUE OCEAN STRATEGY (2009)
The “As Is” & “To Be” Strategy Canvas

As Is

To Be

Creation

Price
Irrelevant Course/Subjects
Admission Bureaucracy
Rigidity of changing courses/school
Opportunities for further studies
Quality of teaching/curriculum
Quality of Outreach Program
Entrepreneurship Training
Partnership with Industry
Rebranding to create new image
BLUE OCEAN STRATEGY Initiatives
(2009 – 2010)

Reform of Vocational Schools

1. Introduce New vocational schools uniform.
2. Disciplinary actions o problematic teachers
3. Leadership: Remove and re-deploy non-performing school principals
4. Introduction of Traineeship programme and Apprenticeship programs
5. Re-skilling and up-skilling of teachers (NOSS and Malaysian Skills Certificate - MSC)
6. Introduction of 5S to transform the workshops (Quality Workplace Environment)
7. Enhance School Enterprise activities
8. Promotion through Media
9. Benchmarking visits to regional and European countries
10. Future development- offer certificate courses not offered at Polytechnic
Primary and secondary education in Malaysia is similar to the foundation of high rise buildings. A strong foundation has to be laid to ensure the safety of the building. The lack of emphasis towards vocational education has seen a decline in the number of skill workers produced by the country.
### CURRENT

<table>
<thead>
<tr>
<th>Age 21+</th>
<th>Age 20+</th>
<th>Age 19+</th>
<th>Age 18+</th>
<th>Age 17+</th>
<th>Age 15+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational School (VS)</td>
<td>Politechnics / Skills Institutes</td>
<td>Tier 4</td>
<td>Tier 3</td>
<td>Tier 2</td>
<td>Tier 1</td>
</tr>
</tbody>
</table>

#### AFTER MCE (± 8 MONTHS)

<table>
<thead>
<tr>
<th>Age 17+</th>
<th>Age 16+</th>
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<tbody>
<tr>
<td>SKM 2</td>
<td>SKM 3</td>
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#### TRANSFORMATION

<table>
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<th>Age 15+</th>
<th>Age 14+</th>
<th>Age 13+</th>
</tr>
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<tr>
<td>Vocational College</td>
<td>Politechnics / Skills Institutes</td>
<td>Tier 4</td>
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<th>Tier 3</th>
<th>Tier 2</th>
<th>Tier 1</th>
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<tr>
<th>Focus on vocational – 30 : 70</th>
<th>After completing education, student is considered as skilled worker.</th>
<th>Program Articulation to Higher level.</th>
<th>Entrepreneurial programme (School Enterprise, Production-Based Education)</th>
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<td>After SPM, student is considered as semi-skilled worker.</td>
<td></td>
<td></td>
<td>On-the-job training (OJT) - 3 times</td>
</tr>
<tr>
<td>Transfer of credit is not allowed.</td>
<td></td>
<td></td>
<td>Outcome-Based Budgeting (OBB) - marketable graduates.</td>
</tr>
<tr>
<td>No continuation of programme.</td>
<td></td>
<td></td>
<td>Human capital in line with National Education Philosophy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Uplifting of perception towards Vocational Education.</td>
</tr>
</tbody>
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- At VS, more academics than vocational (SPM) – 60 : 40
- Focus on vocational – 30 : 70
- After SPM, student is considered as semi-skilled worker.
- After completing education, student is considered as skilled worker.
- Transfer of credit is not allowed.
- Program Articulation to Higher level.
- Entrepreneurial programme (School Enterprise, Production-Based Education)
- On-the-job training (OJT) - 3 times
- Outcome-Based Budgeting (OBB) - marketable graduates.
- Human capital in line with National Education Philosophy.
- Uplifting of perception towards Vocational Education.
Vocational Education Transformation is a good move and must be expedited. It should also be harmonized with other agencies and ministries.

Consultation with Other Ministries and Universities 3 June 2011
Support MOE efforts and will collaborate fully.

Consultation with Industries/Private Institutions July 2011
MOE efforts are well accepted and must be supported by industries.

Meeting with PEMUDAH 26 July 2011
Support MOE efforts and will collaborate fully.

Industry Advisory Meeting on Curriculum July-August 2011
Industrial Collaboration to ensure employability
New Courses offered in line with industries needs
Curriculum should refer to industries development
Industries fully support MOE initiatives which should have been long started.

Cabinet Committee on Human Resource Meeting No 3/11 22 September 2011
Approve the MOE Initiative on Vocational Education Transformation.
VOCATIONAL EDUCATION TRANSFORMATION
STRATEGIC PLAN

VISION
Vocational Education: The Best Path to Excellence Career

MISSION
Providing an innovative vocational education and training to meet the needs of individuals, communities, industries and the country.
**HOW**

**STRATEGIC ACTION PLAN**

- **Initiative 1:** Transformation of vocational education curriculum.
- **Initiative 2:** Transformation of vocational education institution.
- **Initiative 3:** Collaboration with industries.
- **Initiative 4:** Transformation of vocational education assessment.
- **Initiative 5:** Transformation of vocational education organization.

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- **Action 1:** To implement Junior Vocational Education (JVE) Programme.
- **Action 2:** To implement Vocational College curriculum.
- **Action 3:** To set up Junior Vocational Education (JVE) Programme.
- **Action 4:** To establish MOE Vocational College (VC).
- **Action 5:** To establish Other Public Agencies Vocational Colleges.
- **Action 6:** To establish Private Vocational College through Private Finance Initiatives.
- **Action 7:** To set up a Vocational Education Advisory Council.
- **Action 8:** To implement assessment based on vocational standard competencies.
- **Action 9:** To set up a Technical and Vocational Education Sector.
- **Action 10:** To strengthen vocational education human resources through training.
- **Action 11:** To strengthen vocational education human resources through an improved Vocational Education scheme.
## JUNIOR VOCATIONAL EDUCATION (JVE)

### RESILIENCE
- Home Economics
- Information and Communication Tech.
- Civil
- Mechanical
- Electrical / Electronics
- Agriculture

### VOCATIONAL TECHNOLOGY

#### Specialisation

<table>
<thead>
<tr>
<th>HOME ECONOMICS</th>
<th>MECHANICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Catering</td>
<td>12. Automotive</td>
</tr>
<tr>
<td>2. Bakery</td>
<td>13. Motorcycle Servicing</td>
</tr>
<tr>
<td>3. Fashion and Dressmaking</td>
<td>14. Refrigeration and Air Conditioning</td>
</tr>
<tr>
<td>4. Cosmetology</td>
<td>15. Arc Welding</td>
</tr>
<tr>
<td><strong>INFORMATION AND COMMUNICATION TECHNOLOGY</strong></td>
<td><strong>ELECTRICAL / ELECTRONICS</strong></td>
</tr>
<tr>
<td>6. Visual and Animation</td>
<td>17. Electrical Wiring</td>
</tr>
<tr>
<td><strong>CIVIL</strong></td>
<td>18. Electronic Audio Visual</td>
</tr>
<tr>
<td>7. Furniture Making</td>
<td><strong>AGRICULTURE</strong></td>
</tr>
<tr>
<td>8. Interior Decoration</td>
<td>19. Aquaculture</td>
</tr>
<tr>
<td>9. Plumbing</td>
<td>20. Agriculture</td>
</tr>
<tr>
<td>10. Building Construction</td>
<td></td>
</tr>
<tr>
<td>11. Craft</td>
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### Grade 8
- SKM Level 1

### Grade 9
- SKM Level 2
VOCATIONAL COLLEGE (VC) CURRICULUM

WHAT

ACADEMIC MODULE
- MALAY LANGUAGE (BAHASA MELAYU)
- ENGLISH LANGUAGE
- COMMERCIAL LANGUAGES - MANDARIN & ARABIC
- HISTORY
- GENERAL MATHEMATICS
- SCIENCES
- ISLAMIC /MORAL STUDIES

30%

ENTREPRENEURSHIP, EMPLOYABILITY SKILLS, ON JOB TRAINING, AUTHENTIC ASSESSMENT

VC

CLUSTER OF VC PROGRAMME
- CIVIL ENG TECH
- ELECTRIC & ELECTRONIC ENG. TECH.
- MECH. & MANUFACTURING ENG. TECH.
- ICT
- BUSINESS
- HOSPITALITY
- AGRO TECHNOLOGY
- MARINE ENG. TECH.
- ARTS & CULTURAL SUPPORT SYSTEM
- TRANSPORTATION
- HEALTH SCIENCES

PROPOSED VC COURSES
- ELECTRIC
- ELECTRONIC
- TELECOMMUNICATION
- MECHATRONIC
- TOURISM
- BAKERY & CONFECTIONARY
- FASHION & DRESS MAKING
- CHILD DEV. & SERVICES
- CULINARY ARTS
- COSMETOLOGY & WELLNESS

PRODUCTION BASED EDUCATION (PBE), CENTRE OF EXCELLENCE (COE)

70%

PERCENTAGE OF CREDIT HOURS FOR LEVEL 1-3 CERTIFICATE

<table>
<thead>
<tr>
<th>Module Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACADEMIC MODULE PERCENTAGE</td>
<td>30%</td>
</tr>
<tr>
<td>VOCATIONAL MODULE PERCENTAGE</td>
<td>70%</td>
</tr>
</tbody>
</table>

PERCENTAGE OF CREDIT HOURS FOR DIPLOMA (LEVEL 4)

<table>
<thead>
<tr>
<th>Module Type</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>ACADEMIC MODULE PERCENTAGE</td>
<td>20%</td>
</tr>
<tr>
<td>VOCATIONAL MODULE PERCENTAGE</td>
<td>80%</td>
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</tbody>
</table>
VC Curriculum Design

**DOMAIN**
- Employability
- Entrepreneur
- Technical ‘Know How’

**KEY FUNCTIONAL**
- Perform, Technical / Task Skills
- Demonstrate Knowledge
- Integrate Health, Safety & Security
- Communication & Environmental Sensitivity
- Response & Solve Problem
- Plan, Organize & Team-Work
- Exhibit Creativity & Innovativeness
- Practice Positive Values & Attitudes

**OCCUPATIONAL COMPETENCY STANDARD**
- Occupational
- Duty
- Task
- NOSS, CIDB, C&G, LCCI, EDEXCEL, DLL (Level 1 – Level 4)

**CERTIFICATION**
- Industrial Certification
- MV Certification (Level 1 - 4)

**Assessment by Examination Syndicate**

**Curriculum Standard Document**
- Content Standard
- Learning Standard
- Performance Criteria
- Competency Based Teaching & Learning
- Competency Assessment in Teaching & Learning

**COMPETENCY PYRAMID**
- Creativity & Innovation
- Application
- Basic
VC Curriculum Development Process

**Step 1**
Mapping VC Programmes to National Occupational Skills Standard (NOSS) Lists of Job Profiles, Duties and Tasks

**Step 2**
Categorized Duties and Tasks According to Level of Certification (embedded with entrepreneurial and employability skills)

**Step 3**
Propose title of Module of each Category of Duties and Task

**Step 4**
Allocate Contact hour for Every Module /Semester/ Year

Cross Check with International Standard (eg. C&G, Edexcel, LCCI, NATC and etc.)
Malaysia Polytechnic Future Initiatives

• Access to quality education and training (2013 to 2020):
  
i. 6 polytechnics will be upgraded.
ii. 7 METrO polytechnics.
iii. 3 new polytechnics.
iv. 420,000 workers
   (RMK 10 & 11 - Year 2011 to 2020)
Malaysia Polytechnic Future Initiatives

- Preferred institution, at par with Universities (2013 to 2020):
  
  i. Semi-autonomous status for premier and conventional polytechnics.
  
  ii. 3 new Premier Polytechnics.
  
  iii. Separate Act for the Polytechnics.
  
  iv. Institutional Accreditation.
  
  v. Degree awarding Polytechnics.
Thank you

TERIMA KASIH