SINGAPORE PERSPECTIVES2023

Work

PANEL 3

Identifying and Addressing Longer-Term Work Trends: Role of State and Education Institutions

Presentation by

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ITE

Key Driving Forces

1 ECONOMY

- **Economic Disruption and Restructuring**
- **Industry Transformation**
- **Digitalisation**

2 JOBS

- **Disappearing Jobs** (eg. replaced by automation)
- **Hybrid Jobs** (work requiring skillsets from different disciplines)
- **Newly-created Jobs** in new and emerging sectors

3 SKILLS

- **Higher Level Skills**
- **Multi-Disciplinary Skills & Adaptability to Change**
- **Lifelong Learning**

Addressing Needs of ITE Students and Graduates

Employment	Aspiration	Employability Resilience
• Constantly refresh curriculum to match industry/job demands • Active engagement and collaboration with employers and Trade Associations & Chambers (TACs)	• Expand upskilling pathways • Provide career and CET counselling	• Equip with critical 'horizontal' and transferrable competencies • Develop an agile mindset and readiness for continuous learning

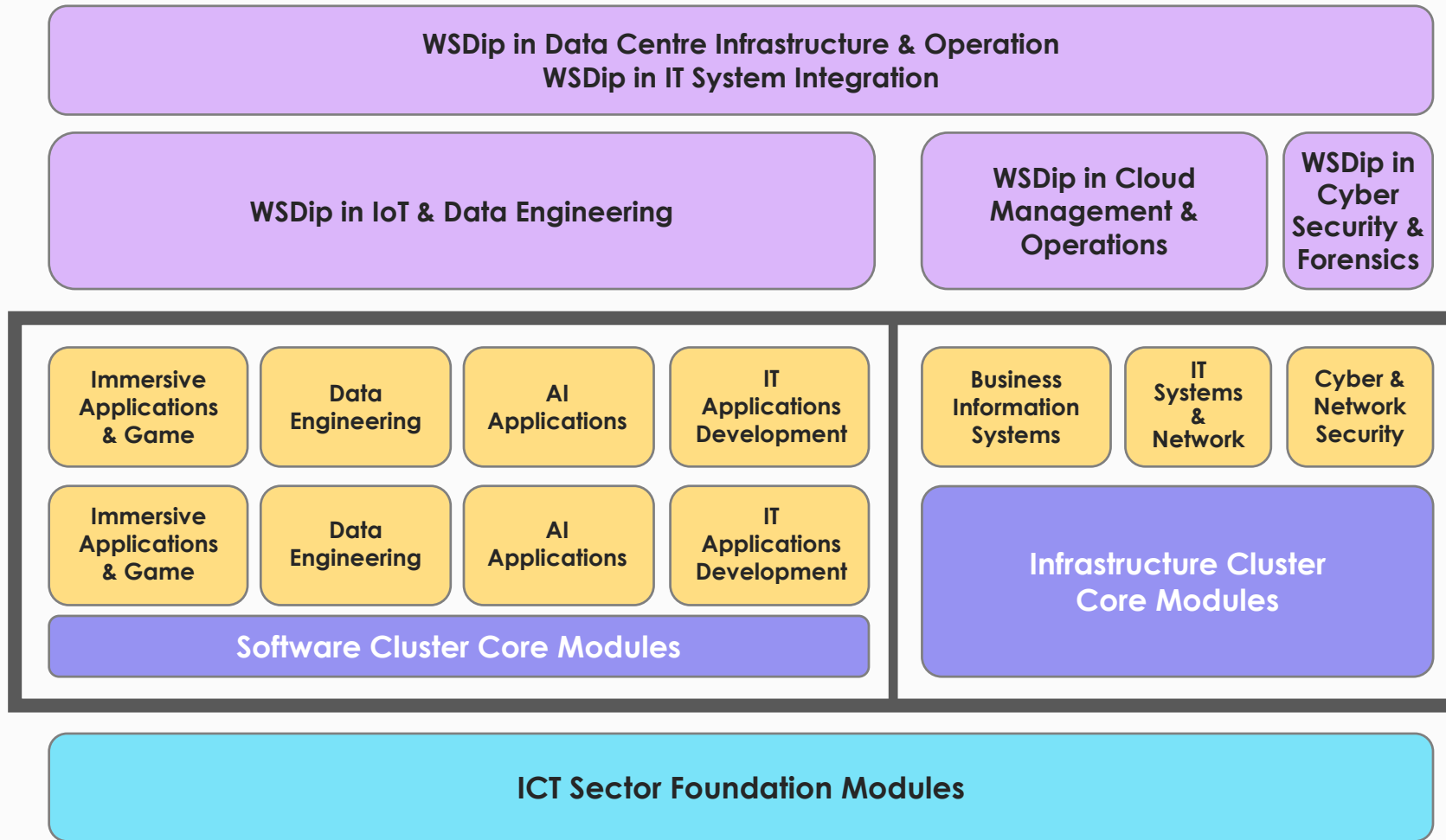# Co-create Curriculum with Industry

CURRICULAR STRUCTURE FOR ICT SECTOR

ITE develops alternative Work-Study Diploma options

WSDip in Data Centre Infrastructure & Operation
WSDip in IT System Integration

WSDip in IoT & Data Engineering

WSDip in Cloud Management & Operations

WSDip in Cyber Security & Forensics

Apprenticeship model – 70% OJT by companies and 30% on-campus training

All students to graduate with Higher Nitec qualification

Year 3

Immersive Applications & Game	Data Engineering	AI Applications	IT Applications Development

Business Information Systems	IT Systems & Network	Cyber & Network Security

Internship 2

Year 2

Immersive Applications & Game	Data Engineering	AI Applications	IT Applications Development

Infrastructure Cluster Core Modules

Software Cluster Core Modules

Internship 1

Broad foundation before selecting specialisation

Year 1

ICT Sector Foundation Modules

4

Authentic Learning Simulating Workplaces

GREEN ECONOMY

CARE ECONOMY

Automotive Hub (Electric Vehicles)

**Aerospace Hub
(Sustainable alternative fuels, Electric air taxis)**

Centre for Healthcare Simulation

ITE-Sembcorp Centre for Sustainable Solutions (Solar Energy)

**Smart Building Management
(Energy Optimisation)**

Fitness & Wellness
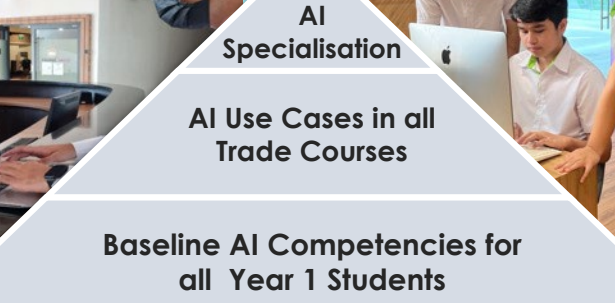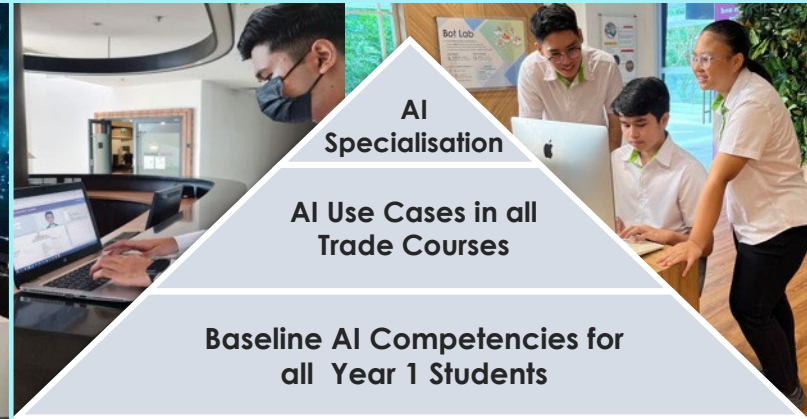
Industry Use Cases, Real-World Projects

DIGITAL ECONOMY

Horticulture Technology Hub
(IoT and automation)

Drone and AI Hub
(Programming & high performance computing)

AI Specialisation

AI Use Cases in all Trade Courses

Baseline AI Competencies for all Year 1 Students

Incorporating AI into Curriculum
(Differentiated approach)

Data Centre Lab
(Server management)

Students' Digitalisation Projects
(AI, Data Analytics, RPA)

Low-code Apps Development

Active Engagement with Industry & Employers

Salesforce – CRM for business courses e.g. retail, customer experience, hospitality

Singapore Semi-Conductor Industry Association (SSIA) for electronics sector jobs

Komoco and Hyundai – manufacture and maintenance of electric cars in Singapore

Singapore International Facility Management Association (SIFMA) – integrated smart facility mgt

Seven industry partners to set up $2.8m User Experience Hub (Digital media production)

EHL Hospitality Business School (Switzerland) – Technical Diploma (TD) in Hospitality Management

Vocational Training Council (VTC), Hong Kong – TD in (1) Civil & Structural Engineering; (2) Beauty & Wellness

Ministry of Education, Youth And Sports, Baden-Württemberg, Germany – Renewing MOU for 6th time

- **Extensive Engagement with Trade Associations, Industries and Employers**
- **Seven Academic Advisory Committees (AACs)** comprising industry leaders to advise ITE on industry trends and identify new areas for training and certification
- **> 5,000 Employers as Co-Training Partners** offering internships and workplace learning for students
- **> 500 companies** involved in ITE Work-Study Diplomas
- **~200 Industry MOU/LOC Partnerships** for authentic learning, industry & technology update, and capability development
- **International Collaboration** with overseas training & education institutions

Expand Upgrading Pathways for ITE Graduates through ITE's 6 Technical Diplomas and 40 Work-Study Diplomas

ITE TECHNICAL DIPLOMA

Baden-Württemberg
MINISTERIUM FÜR KULTUS, JUGEND UND SPORT

(Germany)

PAUL INSTITUT BOCUSE

(France)

VTC

(Hong Kong)

EHL

(Switzerland)

1. **Automotive Engineering**
2. **Machine Technology**

3. **Culinary Arts**

4. **Civil & Structural Engineering**
5. **Beauty & Wellness Management**

6. **Hospitality Management**

ITE WORK-STUDY DIPLOMA

Business

1. Airport Operations
2. Community Engagement & Development
3. Culinary Arts & Management
4. E-Commerce & Retail
5. Event Management
6. Fitness Management
7. Hotel & Restaurant Management
8. Lifestyle & Recreation Management
9. Logistics & Supply Chain Management
10. Maritime Business Management
11. Opticianry
12. Patient Management & Services
13. Rehabilitation Care
14. Customer Experience Management
15. Security Operations

Engineering

1. Aircraft Cabin Engineering
2. Aircraft Engine Maintenance
3. Aircraft Maintenance Engineering
4. Applied Electronics & AI
5. Arboriculture & Horticulture
6. Architectural BIM & Design
7. Automation Engineering
8. Chemical Process Technology
9. Electrical Engineering
10. Land Transport Engineering
11. Marine & Offshore Engineering
12. Mechanical & Electrical Services Supervision
13. Mechanical Systems Engineering
14. Microelectronics
15. Port Automation Technology
16. Security Systems Engineering
17. Vertical Transportation
18. Facility Management
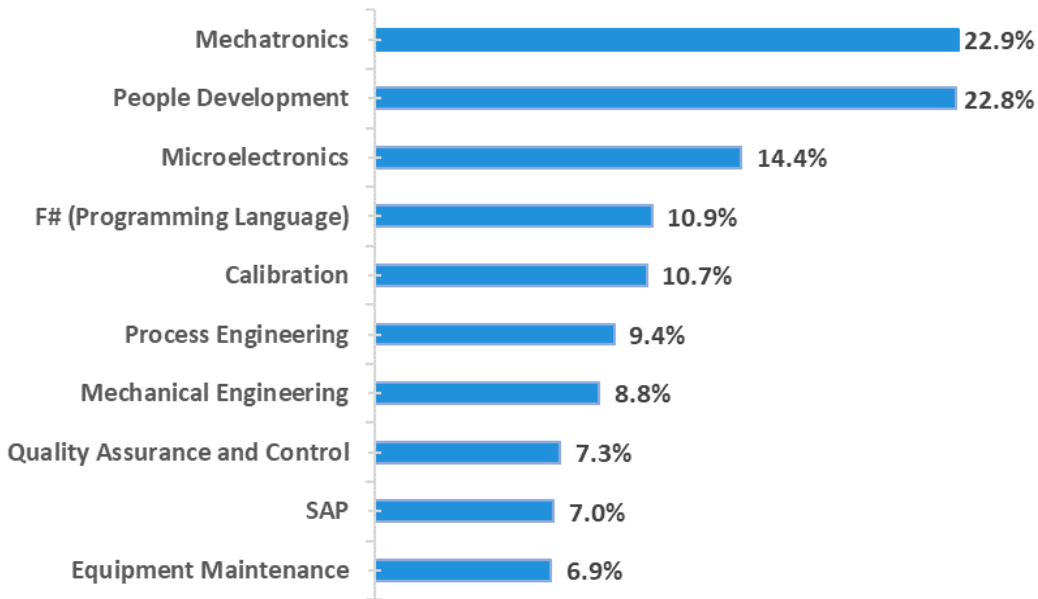19. High-Tech Farming Technology (Agri & Aqua)

Infocomm & Media

1. Cloud Management & Operations
2. Cyber Security & Forensics
3. Data Centre Infrastructure & Operation
4. IoT & Data Engineering
5. IT System Integration
6. Media Communication & Digital Marketing

Career & CET Counselling

PET Students – Education and Career Guidance (ECG) by lecturers and Career Advisors
ITE Graduates – Career and CET counselling, Free CET modules, ITE-e2i Job Portal, Homecoming events
Leveraging Jobs/Skills Analytics and Insights

Lightcast Insights on Jobs and Skills

Top 10 Skills Required in Electronics Sector (2022)

Skill	%
Mechatronics	22.9%
People Development	22.8%
Microelectronics	14.4%
F# (Programming Language)	10.9%
Calibration	10.7%
Process Engineering	9.4%
Mechanical Engineering	8.8%
Quality Assurance and Control	7.3%
SAP	7.0%
Equipment Maintenance	6.9%

JobTech analysis of skills demand vs skills taught in ITE courses

Graduate profile

School of Business & Services

Higher Nitec in Event Management

2022

Recommendation

● By skills match
Recommended based on highest skills match

○ By industry demand
Recommended adjacent job roles that tap on transferrable skills and has good industry demand

Skills matched - 25   **Other Job Requirements - 15**

SKILL	TREND
Sales	
Communication	
Problem Solving	
Meticulous	
Coordination	
Regulatory Compliance	
Inventory Management	
Supply Chain & Logistics	

Transferable Competencies and Lifelong Learning Mindset

The Future of Work: 17 Jobs and Five Different Careers *(The Sydney Morning Herald)*
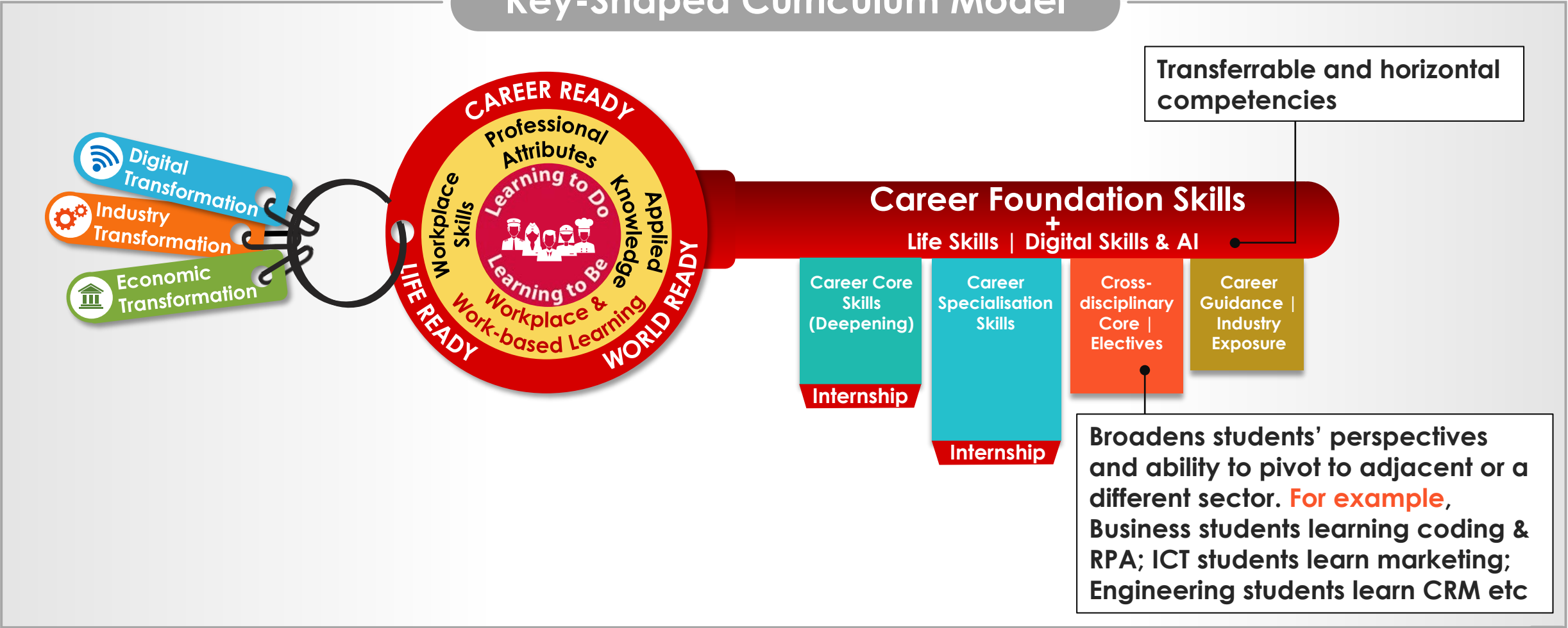
Key-Shaped Curriculum Model

Digital Transformation

Industry Transformation

Economic Transformation

CAREER READY

Professional Attributes

Workplace Skills

Applied Knowledge

Learning to Do

Learning to Be

Workplace & Work-based Learning

LIFE READY

WORLD READY

Career Foundation Skills
+
Life Skills | Digital Skills & AI

Transferrable and horizontal competencies

Career Core Skills (Deepening)

Internship

Career Specialisation Skills

Internship

Cross-disciplinary Core | Electives

Career Guidance | Industry Exposure

Broadens students' perspectives and ability to pivot to adjacent or a different sector. **For example**, Business students learning coding & RPA; ICT students learn marketing; Engineering students learn CRM etc

Thank You