Making Skills Development Work For The Future

Asia-Pacific Conference on Education and Training 2015
(ACET 2015)

Venue: Berjaya Times Square Hotel, Kuala Lumpur
Date: 3-5 August 2015
Beyond Access: ICT-enhanced Innovative Pedagogy in TVET UNESCO, Bangkok

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Didactec Oy Ltd
Asia-Pacific Conference on Education and Training
Kuala Lumpur 3-5 August 2015
CONTENT

• 1. Introduction of the research team

• 2. Background information about the research (objectives, research questions etc.)

• 3. Details methodology and methods employed in the study

• 4. Key findings
Tapio Varis
University of Tampere, Finland

- **Professor emeritus**, Vocational education, and Media Education
- UNESCO Chair in Global e-learning
- Governing Board Member of UNESCO/IITE
- Principal research associate of UNEVOC
- Docent in Communication, U. of Helsinki
- Expert in Finnish Ministry of Education, the EU, and Visiting Professor in many countries
Leena Vainio, M.Sc
OMNIA, University of Applied Science

The head of Learning Solutions in Omnia,
The Joint Authority of Education in the Espoo Region

-She has more than 30 years’ experience in the teachers’ professional development and learning design.
-She has over ten years of blended learning and teaching experience ranging from secondary to university level.
-Vainio’s research focuses especially online learning environments, peer learning and mobile learning.
Petri Lounaskorpi, M.Ed,
Senior Pedagogical consultant, researcher, Founder and CEO

• Has more than 25 years of teacher experience and experience of implementing ICT in education since 1990
• He has been responsible in orchestrating, innovating, designing and implementing web-based learning projects and HRD systems and solutions, electronic performance support systems, learning material databases.
• His main research topics have been training teachers to implement ICT in their teaching, curriculum development and now a days implementing social media tools in the learning process and creating new pedagogical method to use both ICT and social media in education.
• Mr Lounaskorpi has more than 10 years experience in project managing. He has completed more than 20 projects and has had several workers in these projects. Main parts of these projects have been connected with e-learning, blended learning or web based learning.

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Background information about the research

• Research questions,
  o 1. Which are the innovative practices of harnessing the potential of ICT in TVET in the Asia-Pacific region (AP)?
  
  o 2. What is the best ways to improve the pedagogical relevance of TVET to meet the changing skill needs of a digital society?
  
  o 3) What are the policy recommendations for the innovative use of ICT and ways to increase quality of teacher training in TVET?

• Countries contacted:
  Australia, Bangladesh, China, Hong Kong, India, Indonesia, Japan, Kirgistan, Korea, Mongolia, Russia, Singapore, Thailand, Turkey, Uzbekistan,

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Our Project with Unesco Bangkok
Beyond Access: ICT-enhanced Innovative Pedagogy in TVET
(Varis, Lounaskorpi, Vainio)

• 1) Take stock of and document innovative practices of harnessing the potential of ICT in TVET in the Asia-Pacific region (AP),
• 2) Explore ways to improve the pedagogical relevance of TVET to meet the changing skill needs of a digital society, and
• 3) Provide policy recommendations for the innovative use of ICT and ways to increase quality of teacher training in TVET
Details methodology and methods employed in the study

• **Literary review and online data analyses and state of art**
  A literature review and online data analyses seems to be a valid approach, as it is a necessary step in structuring a research field and forms an integral part of any research conducted (Easterby-Smith et al. 2002).

• **Survey of the original data from the target countries by local experts**
  The other data collection method was the collection of the country chapters from each ca. 20 experts. These narrative presentations gave wide information of the local state of art and highlighted the challenges and barrier of using ICT pedagogy in TVET education.

• **Interview of the local experts**
  The third method for data collection was the interviews of the experts at the ACET conference in Kuala Lumpur 3.-5.August 2015.

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Key Trends in the Changing World of Work related to ICT and Education

• Distinction between academic and practical/vocational work becoming blurred
• Move from the industrial age and information age (knowledge, innovation, imitation, stagnation) towards social age (communities) and creative age (entrepreneurship)
• Personal learning environments
• Employment, unemployment, selfemployment
• Learning, relearning, delearning, selflearning
• Role of Media and Communication
ICT and TVET

- Increasing need to integrate vocational training into everyday working life
- Vocational qualification needs international cooperation and funding
- TVET systems and yesterday’s socio-economic challenges
- Modern needs for computers, remote networks and knowledge
- Process of cultural change
## Trends in Technology enhanced learning

### Hybrid Personal Learning Environment (HPLE)

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<th>Type of Learning</th>
<th>Informal Learning</th>
<th>Non-Formal Learning</th>
<th>Formal Learning</th>
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<td>Free-Choice Learning Environments</td>
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Assessment in VET

• Competence is assessed by means of vocational skills demonstrations, which entail performing work assignments relevant to the vocational skills requirements in the most authentic settings possible.
InnoOmnia for teachers:

Learning Online

Social media in learning

Collaborative writing

New tools, new rules - new code of conduct

Leading 21st century schools

Entrepreneurial teaching methods

Producing media rich content

3D printing

iPads as learning devices

Apps for learning

Story telling

Getting started with mobile learning

E-Mentoring – Peer learning

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Teacher, learning moderator, coach

- Design the contexts
- Updating, adapting
- Use of OER, MOOC
- Virtual Reality, Augmented Reality
- Organizing school community
- Intensive work with ICT
- Connections
- Communication skills and competences
Skills acquisition

• Traditional focus of vocational skills for manual work challenged by the mixture of competences required in the workplace today

• personal communication process (presentation within a cooperative group)

• school communication (events, campaigns)

• Formula of learning; 70 % on the job, 20 % coaching, 10 % structural learning deliveries

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Cultural literacy and Practise

• Identification of relevant concepts
• Comprehension and apprehension
• Re-design of complete school curricula
  => New education ecology
• Interconnected knowledge centres
• Learning by doing
• Entrepreneurship
• Self-learning
InnoOmnia
activity circle

- Teacher training
- Study projects involving all levels of education
- Working with the public sector
- Working with local companies
- Community for would be/new startups

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Blended-learning Methods

- Classroom teaching
- On-the-job learning
- Guided self-studies
- Teamwork etc. methods
- Distance learning by E-Learning

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Blended-Learning packages

Practical Training and learning

On Job Practical training

Competence based Qualification

Qualificated Professional

Teacher orchestrating the Learning process

Student

Blended learning model

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Basic factors of Web-based education

Opportunity

- Time
- Place
- Skills
- Technology

Motivation

- Personal development plan
- Life long learning
- Study planning skills

Materials

- Webcourses
- Tailored modules
- Correspondences between study
- Study guidance

Benefit for me, benefit for organization
Aim, ontime guiding
Web based studying isn’t alone studying

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Tentative Key findings

- The data gathering from internet search, literature review, review of policy documents and the contributions of local collaborators reveal the vast differences of the actual situation and policy implementation in the region. Some of the countries have advanced in the implementation of ICT and ICT pedagogy in TVET to include all (we.g. Korea) while some others can assure these trainings only to a few (e.g. Bangla Desh). A tradition of training through apprenticeships is strong in some countries (Nepal, Sri Lanka). Potential of regional learning centres for best practices (India)
- Administratively set out in all countries intent on ICT in education VET
- All countries already taught very basic ICT skills (operating, tekstinkäsitttely, spreadsheets, etc. in information technology.

We could observe three generations of ICT pedagogy in TVET:

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1. Repository use of e materials, courses and blended learning, On-Line courses
   - in all countries at some level, there eLearning material
   - Online courses offered systematically (South Korea and Austalian established systems, other countries, pilot schemes)
2. Interactive e-learning environments, Blended learning

- Korea and Australia (eLearning strategy, blended learning tools) well-established systems, pilots in several countries

- Regional learning centers in The National Institute of Open Schooling
  - The vocational education program offers 80 courses of various lengths in agriculture, engineering and technology, health, home science and hospitality, computers and information technology, business and commerce, and teacher training. More than 20,000 learners are admitted annually, and almost 80,000 learners have been certified in vocational courses since 2000.

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3. Personal Learning Environment (PLE) based student centered learning for life long learning

• Here we are early days - good examples and pilots

• Australian mobile pilots ePortfolio, personalized workplace-based pilots

• Korean Virtual Reality learning environment for car technicians

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Virtual Reality-based training system

- For the real-time rendering, we adapt Unity 3D, 3D game engine, and rendering algorithm that utilizes high performance GPU to improve rendering speed and quality.

Augmented Reality-based training system

- In VR-based training system we have to model the all the parts of car components in 3D to give realistic view to the trainee. Building up the virtual environment of one model require a lot of resources and there are so many kind of car models.

Ki-Hyun Park, Jin Gon Shon

*Dept. of e-Learning, Graduate School, Korea National Open University*

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Comments from real life:

• “Mobile devices visible in teaching! Visit catering side of training yielded pleasantly surprised. The teacher was the iPad, and Apple TV in constant use (the department had 2 Apple-screen TVs). Teaching and practical work streamed other classes live, and even students made use of their own mobile device, as well as making tasks, to support teaching and their own memory that the joint work with other students.”

• “Korea has been in use for Google services. A tool for the students tasks, materials, and evaluation of works Band Application” (Can also be downloaded to devices called John Smith).

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“Wise teachers create an environment that encourages students to teach themselves”.

Leonard Roy Frank
Thank you!

Petri Lounaskorpi

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Guiding questions

Do you agree with the preliminary findings?

Missing data from your country?

Innovative e-practices?
• What is self-learning in ICT?

• How the teachers can take the needed competence leap implementing the ICT pedagogy in their work?

• Key factors?
  – Ict for access
    • Increase access by ICT
    • Offline
    • Project based
    • Apprentis
  – Ict quality
    • Teacher training
  – Ict relevance
    • Involve industry
• What are the challenges and obstacles?

• What the in the policy is missing?

• Take away!
Making Skills Development Work For The Future

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Venue: Berjaya Times Square Hotel, Kuala Lumpur
Date: 3-5 August 2015
TVET Progress Review in Asia-Pacific: Progress since Shanghai Congress 2012

Dr Gita Subrahmanym
Research Associate, LSE Public Policy Group
London School of Economics and Political Science

Asia-Pacific Conference on Education and Training
Kuala Lumpur, Malaysia – 3 August 2015
Keynote Speech
Background and context
Background

• Shanghai Consensus, May 2012

  – World came together in support of TVET

  – Recognised need for countries to transform and expand TVET to meet emerging challenges of the future

  – Seven key actions for transforming TVET in line with rapidly changing labour market needs and emerging sustainable development challenges
Shanghai Consensus recommended actions

1. **Enhance TVET relevance**

2. Expand access and improve quality and equity

3. Adapt qualifications and develop pathways

4. Improve the evidence base

5. Strengthen governance and expand partnerships

6. Increase investment in TVET and diversify financing

7. Advocate for TVET
Importance of relevance in Asia-Pacific

• Skills mismatches: a growing problem in the Asia-Pacific and across the world

• 48% of Asia-Pacific employers cannot find adequately skilled labour (Manpower Group, 2015)

• Youth unemployment rates
  – Asia-Pacific: lowest rates in world
  – Very high rates relative to adults
  – Issues of precarious employment and underemployment
Regional integration and relevance

• Movement of goods, services, skilled labour and capital across national boundaries

• Increasingly important role for skills development

• Opportunity: shift to higher-productivity sectors
  – But need for changing emphasis of skills training
  – Stronger regional cooperation

• Challenges
  – Disparities in innovation and economic sophistication
  – Danger that closer integration could widen inequalities
Findings of TVET Progress Review
Five aspects of TVET relevance

1. Responsiveness to current and future skills needs
2. Alignment of Member States’ TVET and SDGs through ‘greening TVET’
3. Responsiveness to technological changes, in particular by promoting use of ICT in TVET
4. Facilitation of critical coordination and partnerships among TVET stakeholders
5. Adapting qualifications and developing pathways to higher levels of education and employment

TVET Progress Review focuses on these five aspects
Methodology and approach

• Three surveys for three main TVET stakeholders
  – Government: lead ministry responsible for TVET
  – Employers: national employers’ organization
  – Young people/students: national youth organization

• Secondary literature review to fill response gaps
Responsiveness to current/future skills needs

High level of progress across the region:

– Engaging private sector partners in TVET planning/design
– Gathering information on employers’ skills needs
– Updating TVET training in line with these findings
– Offering training in line with standards/competences agreed with employers
– Involving local communities in TVET planning/design

Positive impacts:

– Employers: TVET graduates’ skills have improved over past 3 yrs
– Afghanistan + Fiji: TVET curriculum more aligned with LM needs
– Thailand: High employment rates (≈ 80%) among TVET grads
– Singapore: Transformative economic master plan/TVET strategy
TVET responsiveness to current/future skills needs

Challenges:

– Minority of countries surveyed regularly gather labour market information
– Those that do often overlook relevant indicators
– Many respondents doubt evidence-based approaches have improved TVET policies and/or programmes in their country

Main obstacles:

– Lack of financial and/or technical capacities
– Not yet established a labour market information system, occupational standards and/or a competency-based system
– Lack of interest/support among ministries and/or TVET partners
Alignment of TVET to SDGs through greening TVET

Substantial progress in some Asia-Pacific countries

- Introducing training in skills to promote sustainability in the workplace
- Offering competency-based training emphasising green competencies
- Including green TVET in their national curriculum/development plans
- Integrating SD principles into entrepreneurship training
- Involving local communities/businesses in green TVET activities
- ‘Greening’ TVET learning environments

Positive impacts:

- Many promising projects in green TVET across region
- Lessons learned from pilots
Alignment of TVET to SDGs through greening TVET

Challenges:
- Slow progress in some countries, esp in Pacific and South Asia

Main obstacles:
- Lack of knowledge/technical capacity on how to 'green' TVET
- Lack of funds
- Lack of information regarding the knowledge, skills and competences required for green jobs
Responsiveness to technological changes

Good overall progress across region

– Offering training in electronic and/or digital technologies
– Emphasising innovation-related (STEM) skills in TVET curriculum
– Integrating electronic and/or digital methods and technologies across TVET curriculum
– Promising practices in four areas:
  o ICT-related TVET programmes (Tuvalu, Palau, Bhutan, Lao PDR)
  o Policies to promote ICT in TVET (Thailand, Indonesia, Iran, NZ)
  o Use of ICT to improve TVET access + equity (Fiji, Philippines, India)
  o ICT as a self-help tool for continual skills upgrading (Singapore)

Positive impacts:

– Employers: TVET grads’ IT skills have improved over past 3 years
Responsiveness to technological changes

Challenges:
- Evidence of ‘digital divide’ in use of ICT in TVET
- Low use of ICT-enhanced innovative pedagogies
- Differences in skills sets across region

Main obstacles:
- Lack of funds (esp South Asia and Pacific)
- Lack of trained staff with relevant knowledge and expertise
- Inadequate IT, technological and/or physical infrastructure (esp Pacific)
Adapting qualifications and developing pathways

**Substantial progress in some Asia-Pacific countries**

- Offering/accrediting workplace training
- Developing national and/or regional qualifications frameworks
- Developing higher-level TVET qualifications
- Linking TVET with general education at higher education levels
- Linking TVET to lifelong learning
- Offering entrepreneurship education in TVET
- Offering career guidance and support through TVET

**Positive impacts:**

- Youth organisations: TVET graduates have the skills they need to start/run own businesses and can gain entry to university
- Improved youth perceptions of employers’ skills preferences
Adapting qualifications and developing pathways

**Challenges:**
- Slow progress in some countries
  - Securing relevant workplace training opportunities
  - Putting in place systems to recognise and certify skills/experience gained in informal/non-formal settings
  - Mining the potential of ICT to expand access to careers advice and labour market information
  - Setting up qualifications frameworks
  - Offering comprehensive support to entrepreneurship initiatives

**Main obstacles:**
- Lack of technical capacity and/or experience
- Lack of information on jobs/skills required in labour market
- Lack of funds
Facilitation of coordination and partnerships

High level of progress across the region:

– Involving private sector, NGOs and/or CSOs in TVET provision and/or assessment
– Co-funding by private sector, NGOs and/or CSOs
– Involving local communities in TVET activities

Challenges:

– Involving young people and parents in TVET decisions and processes
Summary of findings

• Positive but uneven progress in enhancing TVET relevance
  – Substantial progress on all five aspects of TVET relevance
  – Disparities between countries and groups within countries

• Main obstacles:
  – Weak technical, financial and institutional capacity
  – Lack of broad partnerships and coordination mechanisms

• Future threats:
  – Disparities between sub-regions could grow if current trends continue

• Future opportunities:
  – Regional integration could lead to beneficial partnerships that overcome capacity constraints and lead to better capitalisation of TVET’s potential
  – Momentum related to new sustainable development agenda (post-2015)
Main recommendations

• Position skills development within new post-2015 SD goals

• Overcome obstacles to enhancing TVET relevance through:
  – Forging beneficial partnerships
  – Strengthening governance and increasing investment in TVET

• Bolster TVET’s role in national development
  – Social change role: promoting intergenerational equity + inclusion
  – Economic role: inclusive economic growth
  – Supporting adaption to change: lifelong learning through TVET
  – Promoting innovation: leveraging the potential of ICT
Main recommendations

• Extend TVET’s role in supporting regional integration
  – Recognising and validating formal, informal and non-formal learning
  – Developing pathways to education and employment opportunities

• Broader/deeper partnerships to boost TVET relevance and quality
  – Closer and deeper partnerships with private sector
  – Inclusion of youth and parents in TVET systems and processes
Incheon Declaration, May 2015

- Education 2030: Towards inclusive and equitable quality education and lifelong learning for all
- Increased and equitable access to quality TVET through:
  - Providing flexible learning pathways
  - Recognizing, validating and accrediting knowledge, skills and competencies acquired through non-formal/informal education
Thank you for your attention!

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