Transversal Skills in Technical and Vocational Education and Training (TVET): Focus on Pedagogies and Assessment in the Asia-Pacific

Call for Papers

Organization: UNESCO Asia-Pacific Regional Bureau for Education (UNESCO in Bangkok)
Unit: Education Policy and Reform (EPR) Unit
Duration: 3 months
Deadline: 17 October 2014
Target group: Research institutes

1. Research background

1.1 General context in Asia-Pacific

Despite growing global enrolment in tertiary education, of which 46% took place in the East and South Asia region in 2011 (UIS, 2013), youth unemployment remains a concern across the region. In 2012, 10.6 per cent of youth aged 15 to 24, more than double the rate of 4.5 for the total population, were unemployed (ESCAP, 2013)\(^1\). There is growing concern and recognition of a mismatch between skills acquired through education and training and those needed by occupational sectors. Employers in the region are struggling to find qualified employees for increasingly knowledge-based positions. A survey of 8,600 hiring managers in five Asian countries revealed that more than 51 per cent of employers report skill gaps which are posing difficulties in the hiring process (Manpower Group, 2012)\(^2\). Nearly three in ten employers (28 per cent) cited low levels of transversal skills among employees as contributing to the prevailing skill mismatches. As a result, some countries in the region are focusing attention on reforming their TVET systems to better respond to the needs of their labour market.

Transversal skills are considered one missing link between education and training and the world of work. There are different understandings and conceptualizations of transversal skills across countries but in general transversal skills refer to a number of important competencies (communication, entrepreneurship, problem-solving, innovation, collaboration skills, etc.) that can be acquired through education and training and can help people better progress through pathways between education levels and across employment sectors, and contribute to holistic skills development (see Table 1).


\(^2\) For more information please visit: [http://www.manpowergroup.com/wps/wcm/connect/587d2b45-c47a-4647-a7c1-e7a74f68fb85/2013_Talent_Shortage_Survey_Results_US_high+res.pdf?MOD=AJPERES](http://www.manpowergroup.com/wps/wcm/connect/587d2b45-c47a-4647-a7c1-e7a74f68fb85/2013_Talent_Shortage_Survey_Results_US_high+res.pdf?MOD=AJPERES)

Table 1: Three skill types that need to be considered for holistic skills development in TVET

<table>
<thead>
<tr>
<th>Holistic Skills Development</th>
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<tbody>
<tr>
<td>Foundation Skills</td>
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<tr>
<td>Transferable Skills</td>
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<tr>
<td>Specialized Skills (Technical and Vocational Skills)</td>
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</tbody>
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Source: Adapted from ERI-Net Research Programme, UNESCO 2014³

Transitioning between workplaces is particularly important in light of the emerging trends of increased labour mobility and regional integration in the Asia-Pacific region. In recent years, the direction of Asian migration flows has shifted from being directed at predominantly the Middle East to countries within Asia. The decline in oil prices since the mid-1980 in the Middle East and rapid economic growth in East and South-East Asia have contributed to the change in labour destinations, with countries like Malaysia and Thailand shifting from labour-sending to increasingly labour-receiving countries. This development is compounded by the growing desire of countries to reap the benefits of regional collaboration. “Since the 1990s there has been a "revival" of bilateral and multilateral agreements between countries of origin and destination - whether in the form of legally binding treaties or non-binding memoranda of understanding (MoU) - that govern how people access and work in labour markets abroad.” (ILO)⁴ Resulting increase in labour mobility within the region is contributing to the growing focus on migrants’ skills – including transversal skills - and their ability to meet the needs of labour markets in their host countries.

Besides significant youth unemployment and increased labour migration, skills mismatches are compounded by constantly changing technological advancements and skills requirements in the workplaces. “In services, data analysis, and engineering positions, for example, most workers clearly need to be technologically savvy, even the secretaries who might be required to use complicated accounting programs, email, and other communication devices. Even a worker on a modern production line might need to use several computers and other complication machinery just on his portion of the line” (Stanford University, 2013).” In fact, employees nowadays are not only required to be technology-savvy but also develop the ability for lifelong learning, which includes the ability to update their skills and adapt to changes, which can have a significant impact on TVET graduates ability to operate in ICT-based workplaces.

³ In Table 1, transferable skills refer to transversal skills

⁴ For more information please visit: http://www.ilo.org/migrant/areas/multilateral-bilateral-agreement/lang--en/index.htm
1.2 Pedagogies and assessment of transversal skills in TVET

1.2.1 Pedagogies

Given the diverse understandings of transversal skills and differences of TVET systems across the region, curricular approaches and pedagogies considered conducive to developing transversal skills vary but tend to be student-centred and commonly based on the Kolb’s experimental learning theory (1984)\(^5\) which places the experiences at the centre of the learning which in itself is considered a process of adaptation. Some challenges in developing this learning process to be conducive to developing transversal skills include identifying the right approach for a given setting. Generally, three different curriculum approaches can be identified with regards to integrating transversal skills into pedagogies:

- **Subject-specific**: Transversal skills are taught as a separate theoretical subject;
- **Cross-subject**: Transversal skills run across, infiltrate and/or underpin theoretical and/or practical subjects;
- **Extra-curricular**: Transversal skills are embedded in extra-curricular activities within and outside school hours.

There are advantages and disadvantages of these different approaches ranging from more or less work authentic, more or less costly and easier to more difficult to adapt for teachers and students, among others. Particularly in TVET, ensuring work-relevance of transversal skills, which can be related to increased cost, is an additional challenge which combined with the need for additional adaptation time for both teachers and students makes imparting transversal skills particularly challenging. Teachers have to leave their comfort zone of frontal instruction, e.g. give away a certain degree of control, and shift to pedagogies that can develop students into creative learners. Students have to learn to adapt to new learning environments where they are required to be active participants who share and learn from each other’s experiences. To ensure the development of well-rounded TVET graduates, transversal skills need to be developed along with foundation and specialized skills. The challenge is therefore in ensuring that skill requirements for these different skills are defined and pedagogies adapted, students’ existing levels of transversal skills mapped and teachers adequately prepared and supported. This study aims to identify bottle necks in these and other areas and contribute to sharing good pedagogical practices from the Asia-Pacific region.

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\(^5\) For more information on Kolb’s experimental learning theory, please visit: [http://academic.regis.edu/ed205/Kolb.pdf](http://academic.regis.edu/ed205/Kolb.pdf)
1.2.2 Assessment

Assessing transversal skills can be a complex endeavour. These skills are not only more difficult to teach but also to measure. In essence, there is no one-size-fits-all approach to assessing transversal skills but rather different approaches that are more relevant in a given context to serve as formative or summative assessment.

Some assessment examples include:

- **Portfolios** are a collection of evidence such as work samples, a log, dairies, notes, witness statements, audio/video tapes etc. and can be stored in hard copy or electronically;
- **Observation** of a students’ performance at work can be carried out during regular instruction or as part of a set-up task or assignment;
- **Witness testimony** can be used to supplement teacher assessment or serve in times when the teachers is unavailable to conduct the planned assessment;
- **Questioning** can be used to clarify a student’s understanding of the nature of the task and can be administered orally or in writing;
- **Product evaluation** can determine if set standards have been met but cannot be used in isolation as assessment of transversal skills tends to be process-oriented;
- **Simulation describes** any structured task that reproduces real work situations and can be used to assess transversal skills that are used occasionally, such as problem-solving. Problems may not arise very often and could be better assessed through pre-set simulations;
- **Assignments and projects** are tasks that are set and carried out over a short or longer period of time.

The challenge in assessing transversal skills is often compounded by the question of fairness and validity of the assessment methods, the assessor and ultimately the assessment outcome. To ensure credibility of results, teachers need to be adequately prepared to monitor and assess their students’ performance. Triangulation of assessment material and employment of external assessors can be one way in which credibility of results is ensured. Setting appropriate attainment levels is another important factor that needs to be carefully considered given that different occupations need different transversal skills for different levels. Assessing transversal skills is not about selecting the best few but rather ensuring that all students improve their preparedness to meet requirements of their prospective occupations in a rapidly changing world. Finally, transferability of skills needs to be weighed and tested given that teaching these skills in one work-related context does not guarantee that students will be able to apply them in other work situations. For example, communicating with a customer might need different emphasis than communicating effectively with a supervisor. This study aims to explore all these questions, identify existing
challenges and highlight good practices in assessment of transversal skills in the Asia-Pacific region.

2. Research objectives

The teaching and assessment of transversal skills is a complex endeavour that is being explored at different education levels. These efforts, however, focus mainly on general education, which is why this study will focus on expanding the knowledge base on transversal skills at the implementation level in TVET. It will explore ways in which transversal skills are imparted and assessed in TVET in the Asia-Pacific region and in particular:

(1) analyze the current status of teaching and assessing of transversal skills in TVET;
(2) identify remaining bottlenecks; and
(3) highlight proven practices in teaching and assessment of these skills.

The overall objective of this regional study is to produce national and regional recommendations that will advise policy makers on how to strengthen current TVET policies to effectively support pedagogies and assessment practices that are conducive to developing transversal skills, as well as showcase good practices in teaching and assessing transversal skills in TVET in Asia-Pacific.

This regional study will be based on findings from a previous UNESCO Bangkok regional study, entitled Transferable Skills in TVET: Policy Implications6, which explored the extent to which transversal skills are defined in TVET policies in select countries of the region. The previous study identified five transversal skills most commonly referred to in TVET policies, namely:

- Communication skills
- Collaboration skills
- Problem-solving
- Entrepreneurship
- Learning to learn (ability to continue learning outside formal schooling)

The current regional study will therefore focus on these five transversal skills and examine the extent to which they are imparted and assessed in TVET in Asia-Pacific.

3. Expected outputs

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• A compilation of good practices of integrating transversal skills in TVET;
• A regional synthesis report documenting emerging trends, achievements and bottlenecks, and policy recommendations derived from analysis of the country cases.

4. Research questions

Given the diversity of TVET systems in Asia-Pacific, research institutions are free to decide on the scope of their research to fit their country context but should aim to answer the following research questions.

4.1 Policy review on transversal skills in the TVET system:

• What is the rationale behind integrating transversal skills in education in your country/economy?
• What skills are considered important in TVET policies in your country/economy?
• Is the concept of transversal skills clearly elaborated in the TVET policy (e.g. vision, mission, goal, and objective) of your country/economy? How so?
• What are the overall approaches and desired outcomes of such integration of transversal skills in TVET, according to the policy documents?
• Are there specific policies, plans or projects on the integration of transversal competencies? If yes, please describe.

4.2 Curriculum framework:

• Has your country/economy had reforms aiming at integration of transversal skills in TVET curricula? If so, please describe.
• How do the curriculum frameworks of your country/economy define learning objectives in regard to the transversal skills? Are there any specific subjects to nurture transversal skills? Which skills (communication skills, collaboration skills, problem-solving, entrepreneurship, learning to learn) are covered in the learning objectives of these subjects and what are the recommended pedagogical approaches (if any)?
• How are the transversal skills integrated in regular subjects (e.g., math, science, languages)? Which skills (communication skills, collaboration skills, problem-solving, entrepreneurship, learning to learn) are covered in the learning objectives of these subjects and what are the recommended pedagogical approaches (if any)?
• Are there any directions/incentives or programmes that encourage teachers to develop transversal skills in their students? If so, please provide details.

4.3 Roles of TVET schools in fostering transversal skills:
• What are the schools’ expected roles in fostering transversal skills?
• Who is considered most responsible for fostering transversal skills in pupils?
  Who are the others? What are others’ roles and responsibilities?

4.4 TVET school policies and school practices:

School policies
• Is the national policy on fostering transversal skills reflected in school mottos, plans and policies? If so, how?
• To what extent are teachers participating in the school planning process in relation to integration of transversal skills?
• To what extent are employers involved in advocating and/or teaching transversal skills?

Pedagogies
• To what extent are teachers able to carry out the intended curriculum for teaching transversal skills?
• How do teachers use/pace their course time of teaching transversal skills?
• How are transversal skills taught in the classrooms?
• What are teachers’ foci when they teach transversal skills?
• How do teachers utilize extra curricula/outside classroom activities for teaching transversal skills?
• What types of pedagogies are being implemented in the teaching of transversal skills (teacher-centred, student-centred, self-directed, inquiry-based, work-based learning, etc.)?
• What kind of teaching material is being used for the imparting of transversal skills (hard copy, electronic, both)?
• Are there any socio-cultural issues that might influence the teaching of transversal skills?
• How are ICTs being used in the teaching and learning process?
• What are the good practices that can be highlighted in terms of teaching transversal skills?

Assessment
• What are the measures to assess transversal skills?
• What tools are available for teachers to assess students’ transversal skills?
• Are students’ behaviors considered in overall assessment of individual student?
• How are students’ pre-existing levels of transversal skills being assessed?
• What type of assessment is being used to evaluate students’ transversal skills (formative, summative, both)?
• How are appropriate attainment levels set for transversal skills?
- How is transferability of transversal skills, e.g. ability to apply a certain skill in different contexts, being measured?
- Is assessment data on transversal skills being stored and shared?
- How is fairness and validity of transversal skills assessment being ensured?
  Are external assessors used to assess students’ transversal skills?
- Are there any socio-cultural issues that might influence the assessment of transversal skills?
- How are ICTs being used to assess transversal skills?
- What are the good practices that can be highlighted in terms of assessing transversal skills?

4.5 Perception towards TVET school practices:

School principals and teachers
- How do school principals view teaching transversal skills in their schools? What concerns do they have?
- How do teachers view teaching transversal skills in their classrooms? What concerns do they have?
- How do teachers view teaching transversal skills outside of their classrooms (e.g., extra-curricular activities)? What concerns do they have?
- Are there particular changes in students in terms of their transversal skills after the reform? If yes, please describe.
- Are there particular changes in teachers’ attitudes towards transversal skills? If yes, please describe.
- Are there particular changes in teaching philosophies? If yes, please describe.
- How do school principals assess their teachers’ performance on teaching transversal skills?

Parents and community members
- What do parents expect from schools with regard to nurturing transversal skills in their children?
- Among the spectrum of the transversal skills (please refer to the list of skills and competencies articulated in your policy documents. If not available, please use the conceptual framework provided in this research), which ones are considered most important by parents and community members?

4.6 Teachers selection/support and training in TVET:
4.7 Achievements and challenges:

- What are the successful/proven teaching approaches to helping students develop transversal skills?
- What are the other success factors in teaching transversal skills at the school level?
- What are the potential bottlenecks in introducing transversal skills at the school level?
- Are there “gaps” between education policies/curriculum and practices at the school level? If yes, please describe.
- What would you suggest to your Government to strengthen the integration of transversal skills in TVET? This could be in terms of policy, curriculum, pedagogy, assessment, or other areas.

4.8 Additional areas:

Countries are encouraged as they deem ready to select additional area(s) that are pertinent to the country/economy context to further investigate the integration of transversal skills in the TVET practice. These areas could include learning/teaching materials, detailed case studies of innovative schools and/or comparative analysis with the innovative schools and sampled general schools. Research questions will be at the discretion of the concerned country/economy.

5. Deliverables

- A draft report in English at the end of 1.5 month, after which feedback will be given.
- A final report in English 20-26 pages (excluding bibliography/references and annexes) at the end of 3 months.

The recommended structure of the country study is as follows:

- Policies and strategies on integration of transversal skills in TVET (2 pages)
- Analysis of national curricula in relation to integration of transversal skills in education (2 pages)
- Analysis of school related documents of sampled schools in relation to teaching transversal competencies (2 pages)
- Analysis of classroom practices (1. pedagogies and 2. assessment) (10-15 pages)
- Additional areas (optional – 2 pages)
- Achievement, challenges and recommendations (3 pages)

6. **Guidelines for research institutes**

Selected research institutes will produce a country study following the research objectives based on **primary data collection** (i.e. questionnaires, interviews, observations, etc.) and **secondary data collection** (document analysis). The emphasis should be on primary data collection and analysis.

For the research questions 1-2, proposed data collection and analysis methods include: (1) review of policy documents (e.g., the Constitution, national development plans, education sector plans, education laws and other policies), curriculum framework and related instruments; and (2) interviews with policy makers.

For answering the rest of the questions, researchers are expected to use a case-study method. It may include: (1) review of sampled schools’ implementation/management related documents (e.g. annual development plans, timeslots, organization trees, evaluation system and other related documents); (2) classroom observation in sampled schools; (3) stakeholder interviews; (4) focus group discussions; and (5) survey questionnaires. Each participating institutions is expected to select 5-10 schools to demonstrate good practices of integration of transversal competencies at school level. Selection process of the sample schools should be documented in detail in the report.

7. **Conditions**

The name of the research institute and all involved researchers will be fully acknowledged in the publication.

8. **Research grant**

A research grant can be offered based on needs. The grant will amount to max. US$3,000 and will be paid in two (2) instalments (50% after submission of draft report, 50% after submission of final report). The grant is a contribution to possibly higher research cost to be borne by the research institution.

9. **Profile required:**
Institutions:
- Institutional mandate involves research in education and skills development/TVET in the Asia-Pacific
- Personnel involved to be well versed in research and analytical work

**Application Process**

Interested institutions should submit the following information:
- **institutional profile**,  
- **expression of interest**, if applying for the research grant please include a justification (one A4 page),  
- **CVs of researchers**,  
- **research framework**, including:  
  1. brief background on transversal skills in the country,  
  2. research methodology (details of sample selection, scope of primary research, scope of secondary research/desk study)

either as hard copy or by email to:

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Email: ch.kim@unesco.org  
With copy to Ms. Barbara Trzmiel (b.trzmiel@unesco.org)

**Deadline for applications:**

Please note that only shortlisted institutions will be notified.