United Nations
Educational, Scientific and
Cultural Organization

Asia-Pacific
ERI-NET
Education Research Institutes Network

ERI-Net Asia-Pacific Regional Policy Series

2015 ERI-Net Regional Study on Transversal Competencies
in Education Policy and Practice (Phase III)

Preparing and Supporting Teachers in the Asia-Pacific to Meet the Challenges of Twenty-first Century Learning

Regional Synthesis Report

ERI-Net Asia-Pacific Regional Policy Series

2015 ERI-Net Regional Study on Transversal Competencies
in Education Policy and Practice (Phase III)

Preparing and Supporting Teachers in the Asia-Pacific to Meet the Challenges of Twenty-first Century Learning

Regional Synthesis Report

Contents

List of Tables

List of Boxes

Acronyms

ASEAN   Association of Southeast Asian Nations

ERI-Net   Education Research Institutes Network

ICT   Information and Communication Technology

ISCED   International Standard Classification of Education

SAR   Special Administrative Region

TVCs   Transversal competencies

UNESCO   United Nations Educational, Scientific and Cultural Organization

Foreword

In recent decades the world has changed dramatically. Globalization and migration, rapid technological advancement and widespread ease of access to information are changes that require a deliberate adjustment in the ways we deliver education. In order to prepare students for today's realities, education systems are now compelled to focus more on developing students' skills and competencies that would develop them holistically. Moving beyond foundational skills like literacy and numeracy skills, students need competencies such as creativity, critical thinking, collaboration, self-awareness, conflict resolution, and ethical use of ICT. Students need these new sets of generic skills to equip them for the challenges and changes ahead. In 2013, UNESCO Bangkok adopted the term 'transversal competencies' to describe these skills and competencies needed for the twenty-first century.

The changes brought about by globalised world and diverse societies, have heightened the need to foster these transversal competencies and the new role of teachers is seen as vital to developing them. Ensuring that students engage in meaningful activities and experiences that lead to developing these competencies necessitates a change in the mindsets and roles of teachers. From being transmitters of factual knowledge, teachers now need to be facilitators of active learning, using strategies and approaches that are very different from those employed in conventional classrooms. If teachers are to facilitate students' acquisition of transversal competencies, however, they must be provided with support, and the required education reforms must be implemented. Specifically, teachers need to embark on professional development activities that prepare them to cultivate students' transversal/generic competencies in the classroom and beyond.

This report, prepared by the Asia Pacific Education Research Institutes Network (ERI-Net), under the auspices of UNESCO Bangkok, is the third and final in a series of in-depth studies on transversal competencies. This final study examined how teachers in the Asia-Pacific region are being prepared and supported to meet the challenges of facilitating the learning of transversal competencies. The study compiled the findings of ten case studies from nine countries in the Asia-Pacific region, and has identified an urgent need for school- and system-level support to create a 'space' in which transversal competencies can be deliberately taught, learned and assessed, with teachers as the key.

The report offers valuable insights applicable to the Asia-Pacific region and beyond. It is hoped that policy-makers, educators and experts will find this a useful resource in advancing the professional development of teachers, and in improving education systems in general.

Gwang-Jo Kim
Director
UNESCO Bangkok

Acknowledgments

Executive Summary

With ongoing reshaping of socio-economic development by globalization and regional integration, and as new demands are placed on the labour market, many countries have responded by reforming education systems and reorienting education policies and practices so as to equip students with the skills needed to function in contemporary life. Such reforms include integrating transversal competencies, also referred to as 'non-cognitive', 'twenty-first century' and 'higher-order thinking' skills, into teaching and learning practices.

To better understand the implications of these education reforms on the role of teachers and on their professional development, the Asia-Pacific Education Research Institutes Network (ERI-Net) examined to what extent teachers in the region feel prepared and supported to integrate transversal competencies into the classroom.

Background

This study built on two prior research phases. Phase I, undertaken in 2013/14, examined how countries in the Asia-Pacific region define and apply transversal competencies in education policy and curriculum frameworks. Phase II, undertaken in 2014/15, explored how these competencies were being interpreted, implemented and integrated in schools in the region.

Phase III examined what kind of support teachers are getting in terms of professional development for integrating transversal competencies into teaching and learning. For this study, research teams in nine countries (Australia, China [Beijing, Shanghai and Hong Kong Special Administrative Region], India, Japan, Malaysia, Mongolia, Republic of Korea, Thailand and Viet Nam) used quantitative and qualitative methods to collect data from 457 schools, including 255 secondary schools, 181 primary schools, 17 combination schools and 4 schools of an unspecified level. A total of 2,621 education personnel responded to a standard questionnaire. The majority of the personnel were teachers (95 per cent), while the remainder were school principals (4 per cent) and students (1 per cent).

The ERI-Net definition of 'transversal competencies' (TVCs) used in the final study covers six domains: critical and innovative thinking; interpersonal skills, intrapersonal skills, global citizenship, media and information literacy and 'others', as shown in the following table.

ERI-Net's six domains of transversal competencies

Diagram: "What are transversal competencies?" — central wheel showing six domains:

- **Interpersonal skills**: Communication skills, Organizational skills, Teamwork and collaboration, Sociability and collegiality, Empathy and compassion
- **Intrapersonal skills**: Self-discipline, Ability to learn independently, Flexibility and adaptability, Self-awareness, Perserverance and self-motivation, Compassion, Integrity and self-respect
- **Media and information literacy**: Ethical use of ICT, Ability to critically evaluate information and media content, Ability to obtain and analyse information through ICT
- **Other**: Other skills as defined by countries/economies
- **Global citizenship**: National identity and sense of belonging, Respect for the environment, Democratic participation, Ethical and intercultural understanding, Responsibility and ability to resolve conflict, Tolerance and respect for diversity, Awareness and openness
- **Critical and innovative thinking**: Reasoned decision making, Reflective thinking, Application skills, Resourcefulness, Entrepreneurship, Creativity

Key findings

The study was guided by five overarching research questions. The key findings in relation to the questions are as follows.

1. To what extent do teachers feel prepared and supported to integrate the learning of transversal competencies into the classroom?

The majority of teachers recognize the **inherent value of either implicitly or explicitly teaching transversal competencies** to their students, so as to better equip them to be lifelong learners. From investigations of the degree of **teacher preparedness** for the integration of transversal competencies into teaching practice, the researchers found that the majority of teachers are '**moderately confident**' in their ability to support the learning of these competencies. But low confidence is an issue for some of the teachers. Comments from teachers revealed that low confidence is sometimes caused by feelings of being

overwhelmed by enormous demands on their time, not least the need to use numerous mandated learning frameworks in their practice.

The essential skills and characteristics identified by teachers as being necessary for facilitating the learning of transversal competencies were: (i) communication skills; (ii) creativity (iii) organizational skills; (iv) assessment skills and (iv) a passion for teaching.

With a view to identifying any gaps in professional skills, the researchers also examined teachers' perceptions of the skills they already possessed. The top three skills that teachers felt they were equipped with 'to some extent' or 'to a greater extent' were: (i) a passion for teaching, (ii) communication skills and (iii) comprehensive knowledge of subject matter.

These findings indicate that the skills teachers think they need to facilitate the learning of transversal competencies tend to be the skills they feel they are already equipped with, particularly in relation to 'a passion for teaching' and 'communication skills'.

The researchers found that 'reflective thinking', which had been assumed as being important for facilitating the learning of transversal competencies, was only identified as a most-needed skill in some of the participating countries. This may indicate different understandings and/or definitions between countries regarding what 'reflective thinking' is and/or what 'transversal competencies' are.

2. What are the successful/proven preparation/supports to help teachers enhance their skills to facilitate the learning of transversal competencies?

For this question, the researchers examined teachers' perceptions of the **professional development** they receive, both pre-service and in-service training. In relation to pre-service training, teachers identified the **practicum** component as being the most helpful in enabling them to facilitate the learning of transversal competencies. For in-service training, the majority of teachers expressed satisfaction with the training they were receiving, but a sizeable minority expressed a wish to see more from the training offered.

Teachers held divergent views on the **relevance** to transversal competencies of the various forms of in-service training, with particular divisions of thought expressed around the usefulness of lectures. There was, however, an overall consensus amongst teachers that **school-based training** is the most relevant form of training.

An assessment of the perceived effectiveness of in-service training revealed that the majority of teachers feel that in-service training is based on their needs but many identified notable gaps. Overwhelmingly, teachers expressed the view that **more specific training is needed** on how to facilitate the learning of transversal competencies, together with greater access to learning materials that specifically focus on transversal competencies.

As part of this analysis, training availability was investigated, and the results indicate that all teachers have access to some form of in-service training. The

researchers also examined the **frequency** of in-service training, and found that the majority of teachers in most countries receive professional development training relatively frequently, most commonly at least once or twice a semester.

The researchers also assessed perceptions of professional development with reference to key components of the school as an institution and its broader operating environment. While the majority of teachers agree that transversal competencies are reflected in **school plans**, including those relating to professional development for teachers, researchers in some countries noted divergent views between teachers and school leaders.

Analysis of the country case studies indicates that **school leaders** are generally supportive of teachers' efforts to integrate transversal competencies into their classrooms, and are supportive of teachers undertaking professional development training to improve their capacities in this area. Teachers feel that the school and system-level leaders have a crucial role to play in 're-balancing' the school environment, that is, shifting from a focus on examinations towards a holistic approach that incorporates the learning of transversal competencies. The findings indicate that school leaders seem to understand that this role is important.

3. What are the challenges in ensuring sufficient opportunities to prepare and support teachers for better learning of transversal competencies?

The implementation of school plans was highlighted as a challenge, particularly with regard to there being, in some cases, insufficient and unallocated **school budgets** to support teacher training and to purchase learning materials that facilitate the teaching and learning of transversal competencies.

In examining the availability of school curricula that explicitly reference transversal competencies, it was found that not all schools have curricula that clearly highlight transversal competencies and few schools have access to detailed guidelines to assist teachers with facilitating the learning of transversal competencies. Teachers expressed particular frustration at the lack of a specific assessment framework to measure the attainment of transversal competencies.

The researchers found that teachers perceive issues in regard to school leaders' attitudes towards the teaching of transversal competencies, such as a lack of understanding of the challenges faced by teachers in facilitating the learning of these competencies, and low quality supervision from school leaders. Some teachers indicated, for example, that more time was needed to teach transversal competencies in the classroom than for standard 'transmission' teaching, and felt that this issue of lack of time was not well understood by some school leaders.

Another challenge for teachers that was identified by the researchers was the lack of understanding by **parents and students** of the benefits of transversal competencies. Many teachers felt that parents and students value success in examinations for traditional subjects over success in non-traditional areas of learning, such as transversal competencies. The teachers felt that such attitudes make the 're-balancing' of school environments difficult.

More heartening, however, is the finding that some education authorities in the region are making significant efforts to move from a focus on improving the quantity of in-service training towards improving its quality. Furthermore, the research revealed a clear commitment on the part of education authorities in some countries to establish a clear and progressive vision of education, encompassing transversal competencies.

4. To what extent is globalization influencing education reforms, especially those related to transversal competencies learning?

The Phase I study on transversal competencies noted that recent education reforms in some countries in the region have been spurred by globalization, and emphasized that developing transversal competencies among students is important in preparing the students for the globalized world and in addressing new demands associated with changes in society such as regional integration. The extent of the influence of **globalization and regional integration** were examined in more detail in the Phase III study.

The researchers found that teachers in the region possessed a medium to high level of awareness of whether their school policies emphasize the importance of preparing students for a globalized world. Furthermore, the study found that teachers across the region tend to agree on which skills are needed by students to navigate our increasingly interconnected world. The teachers also felt that the concept of globalization was being tackled in their curricula (although it is not always seen as being important), as a topic in a module and/or a subject, but they were less able to identify particular teaching and learning activities that help to develop students' transversal competencies.

5. What are the policy implications to ensure teachers are well prepared and supported to fulfil their role?

The Phase III study resulted in four key policy recommendations for the consideration and action of school leaders and policy-makers in the Asia-Pacific region.

Expand opportunities for teachers' professional development in transversal competencies by working with faculties of education and with teacher education institutes to improve pre-service teacher education and training, and by creating in-service teacher training programmes that enable teachers to develop TVCs, including instruction in how to teach TVCs and examples of good practice.

Enhance school environments to better enable teachers to implement transversal competencies in their practice by fostering teacher collaboration and personal and professional development; encouraging teachers to access peer and school-based learning opportunities; providing professional development to school principals and leaders to reinforce their understanding of TVCs, as well as optimal implementation strategies; and making schools accountable for teacher professional development programmes.

Provide system-level support to enhance support for, and guide the integration of, transversal competencies in schools by conducting curriculum reviews and preparing curriculum guidelines that address the integration of TVCs; developing and applying appropriate assessment frameworks; ensuring teachers are supplied with appropriate teaching and learning materials and resources; and establishing research partnerships with academic institutions and teachers to examine the remaining barriers to integrating TVCs.

Build understanding and value of transversal competencies within school stakeholder communities by conducting awareness campaigns among parents, students and education stakeholders on the importance of TVCs; equipping school principals and teachers with the capacity to effectively advocate for TVCs with both parents and students; and creating a balance in the school environment between exam-oriented and holistic learning. Such efforts will require that schools receive sufficient funding for professional development in implementing the teaching and learning of transversal competencies.

1. Introduction

Background

In recent decades many economies in the Asia-Pacific region have shifted from being based on agriculture to having an emphasis on manufacturing, and they are now shifting towards being based on knowledge and services. Labour markets are changing accordingly, with a growing demand for workers with complex analytical and communication skills, and who can manage large amounts of information and process it with the help of information and communication technology (Choo et al, 2012; Partnership for 21st Century Skills, 2007; Saavedra and Opfer, 2012; Voogt and Pelgrum, 2005).

The implications for education of these changes in the labour market are profound. Many policy-makers and educators feel that education policies and practices must be reoriented to better equip students with the skills that are in demand. Integrating 'transversal competencies' (TVCs), also referred to as 'non-cognitive', 'twenty-first century' and 'higher-order thinking' skills, into teaching and learning is viewed by many as the best way to achieve this (Saavedra and Opfer, 2012; Trier, 2001).

'Transversal competencies' refer to skills, competencies, values and attitudes such as critical thinking, collaboration, creativity, self-discipline, resourcefulness and respect for the environment. Transversal competencies are not only regarded as being important for the economic advancement of young people, but also for supporting social and cultural change and lifelong learning within complex and evolving technology-based societies. Many countries view transversal competencies as being essential for promoting tolerance and mutual respect, and these attributes have been included within many national definitions of transversal competencies (Voogt and Pelgrum, 2005; Voogt and Roblin, 2013; Ananiadou and Claro, 2009; Trier, 2001).

Teachers are at the forefront of education change, and therefore need to be supported to evolve their pedagogy from meeting the education requirements of an industrial society to meeting those of a knowledge society (Voogt and Pelgrum, 2005), including in integrating transversal competencies into teaching and learning practices.

To better understand the implications of reforms in education on the role of teachers and their professional development, the Asia-Pacific Education Research Institutes Network (ERI-Net) undertook research focusing on the extent to which teachers in the region feel prepared and supported to integrate transversal competencies into the classroom. The study, undertaken in nine countries (Australia, China [Beijing, Shanghai and Hong Kong SAR], India, Japan, Republic of Korea, Malaysia, Mongolia, Thailand and Viet Nam), also sought to identify achievements relating to integrating transversal competencies into teaching and learning as well as the challenges involved in this process, and to understand the extent to which globalization and regional integration processes are influencing education reforms. Ultimately, this study aimed to

generate knowledge that could inform education policy and practice for the benefit of countries in the Asia-Pacific region and beyond.

This study built on two prior research phases. Phase I, undertaken in 2013/14, examined how different countries in the Asia-Pacific region define and apply transversal competencies in education policy and curriculum frameworks. Phase II, undertaken in 2014/15, explored how these competencies are interpreted, implemented and integrated in schools throughout the region.

The first two phases of the ERI-Net research found that recognizing and integrating transversal competencies is not only occurring in Western and OECD education systems, but also in many countries in the Asia-Pacific region. Such countries are revising their education systems with these competencies in mind (UNESCO, 2015; UNESCO, 2016).

Summary of the findings of phases I and II

Phase I: Transversal competencies in education policy and practice

The findings of the first phase of research (UNESCO, 2015) indicated that all of the ten participating countries/economies[1] had policy documents and curricula that promoted (either explicitly or implicitly) transversal competencies. Such policy documents and curricula were a result of a process of substantial reform, which researchers found had positively enhanced student learning, particularly with regard to the development of interpersonal skills and critical and creative thinking.

The first phase of research also identified three major modes of integrating transversal competencies: (i) subject-specific integration, where transversal competencies are introduced as a standalone subject within the formal curriculum; (ii) cross-subject integration, where transversal competencies are incorporated into traditional school subjects; and (iii) extra-curricular integration, where transversal competencies are embedded into non-classroom activities (UNESCO, 2015).

The study also identified definitional, operational and systemic challenges to the integration of transversal competencies into education policy and practice. The researchers found that transversal competencies were often only vaguely defined within policy documents and in some cases not defined at all. As a result, some teachers lacked clarity in the definition of the concepts and lacked an understanding of the implications of these competencies for teaching practices and desired learning outcomes.

Linked to these definitional challenges were operational challenges tied to teaching practices, including a lack of accountability, incentives and funding for teachers to implement reforms, insufficient teaching and learning materials, and no explicit mechanisms for assessing the attainment of transversal competencies.

---

1   Australia; China; Hong Kong SAR, China; India; Japan; Malaysia; Mongolia; Philippines; the Republic of Korea and Thailand.

Major systemic challenges that were identified included an inconsistency between education policy and practice. While education policies promote transversal competencies, schools emphasize the teaching of subjects that are tested by high-stakes examinations. Furthermore, curricula are overcrowded, school cultures are non-conducive to teaching TVCs and schools lack the support of communities, including parents and students, for the learning of TVCs (UNESCO, 2015).

Phase II (School and teaching practices for twenty-first century challenges: Lessons from the Asia Pacific Region)

Given the gaps between education policy and actual teaching practice in the classroom, the Phase II study set out to examine the extent to which transversal competencies were understood, interpreted, implemented and integrated at the school level, and the challenges in implementation (UNESCO, 2016; ERI-Net, 2015).

The Phase II study identified a clear desire at the school level to incorporate transversal competencies into teaching and learning practices. The researchers found that transversal competencies were reflected in school policies, plans and curricula in all of the ten participating countries.[2] Furthermore, educators were aware of the importance of using student-centred teaching strategies for developing students' transversal competencies, and in some cases emphasized extra-curricular activities to help develop those competencies. An awareness of the importance of transversal competencies by school principals and school leaders was noted, as well as their acknowledgement of the positive atmosphere created by adopting transversal competencies as part of school culture. The researchers also found that teachers were engaging proactively with their peers to improve their methods of developing transversal competencies in their classrooms (UNESCO, 2016).

The Phase II study also identified several important challenges faced by schools in teaching transversal competencies. Unsurprisingly, given the findings in Phase I, the Phase II study found that while transversal competencies were reflected in policies, plans and curricula, they were generally not clearly defined, posing a challenge for teachers in integrating the competencies into their teaching practice. Furthermore, a heavy emphasis on traditional curricula and associated high-stakes examinations was observed at the school level, which meant that teachers were spending little time on transversal competencies. The researchers also found that in spite of awareness among educators of the importance of student-centred learning, traditional lecture-style teaching continued to dominate, a situation not helped by a lack of instructional materials and practical guidelines on student-centred learning, including in relation to integrating transversal competencies, and there were insufficient teacher professional development opportunities to support practical application (UNESCO, 2016).

The ERI-Net studies (Phase I, II and III) examined transversal competencies in education policy and practice at three levels: the policy/system level, the school level, and the personnel level (teachers and principals). **Table 1** provides a summary of the findings of phases I and II.

---

2   Australia, China, India, Japan, Malaysia, Mongolia, the Philippines, the Republic of Korea, Thailand and Viet Nam

While it is useful to compare the findings of the three phases, we must be mindful of changes may have occurred since the inception of Phase I in 2013. The conditions and realities of education systems within countries may have shifted over the duration of these studies. Furthermore, while this was not explicitly noted in the different stages of research, the conditions for understanding and reflecting TVCs in both education policies and practices may have been influenced by the preceding studies.

Table 1: Summary of the findings of phases I and II

Phase I: System level

Key findings

Prominent transversal competencies identified:

- The competencies that featured most prominently in education policies and/or curricula were those relating to creative and innovative thinking and interpersonal skills, including critical, innovative and reflective thinking, reasoned decision-making, communication skills, teamwork and collaboration.

Modes of integrating transversal competencies into curricula

Three common modes were identified:
- *Specific subject:* **TVCs are introduced as a standalone subject within the formal curriculum.**
- *Cross subject:* **TVCs underpin traditional school subjects.**
- *Extra-curricular:* **TVCs are embedded into various types of non-classroom activities.**

Achievements

- Policy documents in all ten countries promoted the integration of TVCs.
- Education reforms to support the integration of TVCs led to enhanced student learning.

Phase I: System level

Key findings

Challenges

- *Definitional challenges:* TVCs were not defined clearly in education policy documents. Therefore, teachers had difficulty in understanding them and their implications for teaching practice.
- *Operational challenges:* Lack of accountability and incentives for teachers to implement reforms; no explicit assessment mechanism for TVCs and insufficient teaching and learning materials.
- *Systemic challenges:* Inconsistencies between promoting TVCs in education policy and testing academic knowledge in high stakes examinations; overcrowded curricula; non-conducive school cultures and lack of community support for teaching and learning TVCs.

Phase II: School level

Key findings

Prominent transversal competencies identified:

- The TVCs most commonly cited in school policies, plans and curricula included critical thinking, problem solving, creativity, collaboration and communication.

Achievements

- TVCs were reflected in school policies, plans and curricula.
- There was a clear desire at the school level to incorporate TVCs into teaching and learning.
- The importance of student-centred learning approaches for TVC integration was understood by teachers, and school leaders acknowledged their importance.
- Teachers proactively engaged in peer-to-peer learning to improve methods for teaching TVCs.

Challenges

- TVCs were not clearly defined in policies, plans, curricula and guidelines.
- There was a continued heavy emphasis on the traditional subjects and the associated high-stakes exams, with the result that little time was given to teaching and learning TVCs.
- There was a lack of learning materials and practical guidance to support teaching and learning of TVCs.
- Insufficient professional development opportunities for TVC integration were available to teachers.

2. Literature Review

2.1 The relevance of transversal competencies

Much of the discourse on transversal competencies links their importance to economic imperatives, specifically the ability to meet changing demands in the labour market generated by the evolution from an industrial to a post-industrial global economy. However, transversal competencies are not only regarded as being important economically, but also because they contribute to improving the quality of education and they support life-long learning. Furthermore, countries around the world see TVCs as a means of improving the quality of education. Many educationists and governments are beginning to view transversal competencies as a significant driver for improving teaching and learning, since teaching TVCs requires teachers to switch their role from being deliverers of knowledge to being facilitators of learning, enabling learners to generate and apply knowledge independently (Silva, 2009; Schleicher, 2012).

2.2 Teaching transversal competencies

Given that schools across the world are becoming increasingly multicultural as a result of globalization and migration, teachers must be capable of drawing, from the broad range that exists, the pedagogical methods that best meet the learning needs of students from diverse ethnic, social and cultural backgrounds. Thus, teachers need to have the ability to **embrace and respond to diversity** in the classroom (Lieberman and Pointer Mace, 2008; Hrabowski et al, 1999; Schleicher, 2012).

In order to teach transversal competencies, teachers need to first understand and exemplify them. Teachers must also become 'knowledge workers', who expand and share their professional knowledge with colleagues and with students. In addition, teachers need to learn how to integrate transversal competencies across the traditional academic curriculum and, in some contexts, deliver these competencies as standalone subjects in the classroom and/or as extra-curricular activities outside the classroom (Schleicher, 2012; Voogt and Roblin, 2012; Partnership for 21st Century Skills, 2007; Kong et al, 2014; So and Kang, 2014).

To develop students' transversal competencies, teachers need to adopt **student-centred** instruction methods such as project-based learning, problem-based learning and design-based learning. Such methods equip students with the skills to learn and inquire for themselves, while also encouraging student teamwork, drawing on complex real-world problems and questions that students are concerned about and **enabling lifelong learning** (Schleicher, 2012).

Emerging studies indicate the potency of student-centred , inquiry-based approaches in improving student learning, but they also identify various obstacles connected with teacher proficiency in applying the right teaching

skills for this kind of learning. According to some studies, although many teachers recognize the value of transversal competencies, others are yet to be convinced and need to be provided with incentives and sufficient resources to devote time to teaching TVCs. Researchers have also noted that it is challenging for teachers to move away from the transmission model of teaching, which requires having an in-depth knowledge of traditional subjects and which has been the mainstay of teaching practice for many years (UNESCO, 2016; Pacific Policy Research Centre, 2010; Trilling and Fadel, 2009).[3] However, teachers do not need to make a choice between transmitting knowledge of traditional subjects and fostering transversal competencies. Rather, teachers can find an appropriate balance between the two pedagogical models (Silva, 2009). This balance needs to be reflected in professional development programmes (Ananiadou and Claro, 2009; So and Kang, 2014). Evidently, teachers require appropriate professional development programmes that equip them with the skills needed to foster students' TVCs.

2.3 Delivering effective professional development to teachers

Moving from theory to practice

There is clearly an urgent need to translate political commitment to TVCs and related education policies into practice, through the delivery of well-designed and teacher-relevant professional development programmes (Bernhardt, 2015).

Research findings suggest that there are currently few adequate professional development programmes that specifically address transversal competencies and, as a result, most teaching practices do not foster the integration of transversal competencies into the classroom (Voogt and Roblin, 2012; Schleicher, 2012; Ananiadou and Claro, 2009).[4] Furthermore, many teachers perceive their professional development programmes as being fragmented, disconnected, irrelevant to the real problems of classroom practice, overly prescriptive, 'top down' and typified by a 'one size fits all' approach. Moreover, some teachers view the programmes as promoting a culture of compliance instead of building a culture of learning (Lieberman and Pointer Mace, 2008; Bernhardt, 2015; Barnett, 2003).

Researchers advise that for professional development to be successful in enabling the learning and integration of transversal competencies, the programmes need to be: sustained, experiential, grounded in teachers' own questions and work, school-based and collaborative, with a maximum of peer-to-peer learning (Fullan, 1997; Bernhardt, 2015; Pacific Policy Research Centre, 2010).

---

3   The Pacific Policy Centre (2010) identified three areas of difficulty: (i) the ability of teachers to choose activities and/or topics that benefit from differing viewpoints and lived experiences of students; (ii) the ability to strategically select students who will work together and to set ground rules so that all students have the opportunity to participate; and (iii) the ability to encourage multiple strategies to foster deeper discussion for all group members.

4   Voogt and Roblin refer to the decade-long research conducted under the Second Information Technology in Education Studies (SITES), which monitored the adoption of twenty-first century competencies, particularly related to ICT, in schools across 26 countries. Schleicher refers to results from the OECD Teaching and Learning International Survey conducted by the OECD in 2008, which involved 24 countries, including 70,000 teachers and 4,000 schools. Ananiadou and Claro's New Millennium Learners study reviewed 17 countries/regions.

In particular, given that there is a lack of understanding of TVCs among teachers, with some teachers equating TVCs with the use of information and communication technology (ICT) in classrooms, professional development programmes need to help teachers to understand what transversal competencies actually are and what they mean for their teaching practice in the classroom.

In addition, professional development programmes must equip teachers with the necessary skills to integrate transversal competencies in different ways in the classroom, including across curriculum or as separate subjects. Indeed, a balance should be struck in professional development programmes between providing opportunities for teachers to deepen their knowledge of traditional subject-areas and providing teachers with pedagogical strategies to integrate transversal competencies into teaching practice (Bernhardt, 2015; Partnership for 21st Century Skills, 2007).

Furthermore, programmes should assist teachers to develop skills to assess students' transversal competencies. This will require addressing the limitations of current assessment tools to measure transversal competencies. Researchers have called for new, scalable assessment models to be introduced (Voogt and Roblin, 2012; Ananiadou and Caro, 2009; Pacific Policy Research Centre, 2010; Trier, 2001; Eisner, 1995; Hipkins, 2005; Silva, 2009; Poon et al., 2015).

Pre-service teacher training

Since pre-service training is foundational, it is imperative that instruction relating to transversal competencies be incorporated within it. Researchers believe that teacher training colleges and universities should become more proactive in offering training courses that prepare teachers for utilizing and integrating TVCs (Kudo, 2013). Furthermore, certain 'critical themes' should be part of delivering pre-service training (Hrabowski et al.,1999).[5] In addition, faculty at teacher education institutions should take the lead in teaching innovative student-centred learning approaches, be vigilant about maintaining the quality of the courses they deliver and use good professional practices that help student teachers to use their 'heads, hearts and hands' (Marlow and Inman, 2002; Partnership for 21st Century Skills, 2007).

---

5   These themes are: (i) outstanding achievement; (ii) service and hands-on experiences; (iii) a reflection on learning experiences; (iv) evaluation, both self-evaluation and evaluation by the institution; and (v) the creation of core institutional values and building a community.

In-service teacher training

In-service teacher training is an essential means of supporting the ongoing professional growth of teachers. There is much debate surrounding how in-service training should be shaped to enable teachers to improve their practice, but many researchers advocate for the school to be the primary platform for in-service training, and for peer-to-peer learning to be at its core, rather than learning coming from external and disassociated sources (Eisner, 1995; Lieberman and Miller, 2011).

Research undertaken by Bernhardt (2015) found that many teachers believe their colleagues are one of the best sources of learning. Furthermore, a significant body of research shows that peer-to-peer learning not only helps teachers to improve, but can also ultimately enhance student learning (Schleicher, 2012; Lieberman and Miller, 2011; McLaughlin and Talbert, 2010). There are calls, therefore, to refocus in-service training to **establish practices of peer-to-peer learning at the school level**, thereby placing teachers at the centre of professional development. Many researchers argue that the best way to do this is to establish professional learning communities in schools and networks across schools.[6] While there are challenges in establishing and sustaining such learning communities,[7] researchers argue that these can be overcome, particularly when learning communities are firmly rooted in the everyday life of the schools (Lieberman and Miller, 2011; Lieberman and Pointer Mace, 2008; Pacific Policy Research Centre, 2010; McLaughlin and Talbert, 2010).

Information and communication technology is an integral component of many transversal competencies learning frameworks and the use of ICT in the classroom can positively affect student learning, so ICT is of importance in the context of in-service teacher training. Several studies have noted, however, that developing teachers' skills and knowledge of ICT to the extent that they can proficiently integrate ICT as an instructional tool in the classroom is a major challenge and point to various barriers to the effective use of ICT by teachers (Cradler et al, 2002; Voogt and Roblin, 2012; Kopcha, 2010; Voogt and Pelgrum, 2005).[8]

---

6   Lieberman and Miller (2011, p. 16) define learning communities as 'ongoing groups…who meet regularly for the purposes of increasing their own learning and that of their students'. McLaughlin and Talbert (2010) list the key characteristics of successful learning communities as: openness, candour and a willingness to learn from failure, and note that such communities require a profound shift in culture for educators.

7   Lieberman and Miller (2011) list four major challenges to establishing and sustaining professional learning communities: (i) the norms and rules of learning communities are often in direct conflict with the bureaucratic model that many schools adhere to, where compliance is valued over reflection on practice; (ii) the teaching and learning priorities of learning communities may be overshadowed by issues raised by federal, state and district authorities; (iii) well-functioning professional learning communities take time to establish; and (iv) there are other demands on teachers, so it is important to sustain the community as an integral part of the school.

8   Barriers to ICT use in education include: (i) a lack of basic proficiency among teachers in ICT; (ii) a lack of time to learn new technology and integrate it within lesson plans; (iii) the use of ICT is sometimes viewed as being contrary to teachers' overall vision of how education should be delivered; (iv) minimal access to ICT at some schools; (v) lack of training in ICT for teachers that draws on mentoring and peer learning processes; (vi) the school environment may not actively promote the use of ICT, including support for new teaching practices; (vii) large class sizes and short lesson periods constrain the ability of teachers to use ICT in the innovative ways required for teaching transversal competencies; and (viii) a lack of synergy between educational ICT software and curricula (Kopcha 2010: Plomp and Voogt 2009, Voogt and Pelgrum 2005).

Some of the barriers can be overcome through the provision of professional development that not only assists teachers to acquire basic ICT skills and build confidence, but also helps teachers to use technology as an instructional tool to improve student development in transversal competencies. Mentoring is another effective means for teachers to overcome common barriers to integrating technology into their practice, as mentors can present teachers with different models for teaching with technology, and can provide assistance that meets their specific needs (Voogt and Pelgrum, 2005; Plomp and Voogt, 2009; Kopcha, 2010; Cradler et al, 2002; Barnett, 2003; Pacific Policy Centre, 2010; Cradler et al, 2002).

2.4 School-level and systemic support

ERI-Net's Phase I and II studies found that many education systems have included transversal competencies, both explicitly and implicitly, within policy and curricula. The missing link is effectively preparing and supporting teachers to ensure these skills and competencies are taught effectively in the classroom (UNESCO, 2015; UNESCO, 2016).

A range of interconnected factors affect ecosystems of schools as institutions, including the teaching and learning processes carried out within them. It is therefore important to examine the major institutional elements of a school, and its broader systemic context, when considering how teachers can be supported to facilitate the learning of transversal competencies in the classroom.

Education systems

Fullan (2007) argues that to bring about sustainable reforms in education systems, relationships within these systems need to change from being 'top-down' to being 'partnership-based', with a primary focus on capacity building and learning from experience, including learning from failure. Furthermore, local and national education authorities should give schools greater autonomy in deciding on teaching content and learning methods, as this encourages educators to develop innovative approaches (Fullan, 2007; McLaughlin and Talbert, 2010).

School leaders

Studies have found that school leadership plays a crucial role in promoting the professional development of teachers. School leaders who ensure that their schools become learning organizations thereby encourage pedagogical innovation and collaboration among teachers and with other schools and community members. Researchers believe that fostering a 'whole school' development approach creates a favourable environment for the teaching and learning of twenty-first century skills and transversal competencies in the classroom (Schleicher, 2012).

Actions that school leaders can take to assist teachers to integrate TVCs into their practice include: (i) creating opportunities for teachers to engage in meaningful discourse about the integration of transversal competencies during their professional time and following stimulating speeches by visiting speakers; (ii) defining school education goals that support the attainment of transversal competencies in collaboration with members of the school community, and

ensuring that school-based professional development programmes are shaped by teachers; (iii) providing teachers with clear and consistent opportunities and methods to provide feedback on the quality and relevance of professional development programmes; (iv) prioritizing school budget resources through school plans for teacher professional development, including providing necessary hardware and software for the integration of ICT into the curriculum; (v) defining and agreeing on teachers' professional development goals; and (vi) prioritizing time to observe and evaluate teachers' practice, and providing constructive feedback relating to agreed performance standards and goals. (Bernhardt, 2015; Schleicher, 2012; Kong et al., 2014; Cradler et al., 2002).

School communities

The school community, particularly parents, plays an important part in the school system. To create an active, open and innovative school environment, it is important that school leaders make efforts to engage with parents about the schools' education goals, and to clearly explain the importance of transversal competencies in terms of student learning that is expected in the twenty-first century. School leaders play a crucial role of mediating change between system level authorities, teachers and community stakeholders. Researchers have found that when school communities are constructively engaged, including through collective problem solving, there is often greater community support for new teaching and learning practices (Schleicher, 2012).

3. Methods

The research framework for the Phase III study was developed based on the two previous phases of research, but was tailored to specifically investigate how teachers are prepared and supported to facilitate the acquisition of transversal competencies (see Annex A).

Although each country was given the common research framework and a standard set of research questions, the research teams were encouraged to adapt the framework and questions to their local contexts. As a result, there were differences between countries in how the research questions were posed, which resulted in diversity in the types of data collected and how it was measured and interpreted. Due to this complexity, the analysis focused on more on drawing out key results from each country case study relating to the overarching research questions, rather than on comparing the results of country case studies.

3.1 Definition of transversal competencies

Transversal competencies are considered necessary for people to function within today's complex and increasingly interconnected world. A myriad of terminology is associated with transversal competencies, including 'transferable' and 'cross-curricular' competencies and 'non-academic' skills. These competencies have also been described as demonstrations of 'complex performances' because they require the integration of skills, behaviours, attitudes, motivations, values and understandings. At the core of these competencies are complex thinking, reasoning and communication skills (ERI-Net, 2015; Saavedra and Opfer, 2012; Trier, 2001; Hipkins, 2005).

The definition of transversal competencies used by ERI-Net for the Phase III study follows the one used in Phase II. Under this definition, transversal competencies encompass five key domains and an optional one. The domains are: (i) critical and innovative thinking; (ii) interpersonal skills; (iii) intrapersonal skills; (iv) global citizenship; (v) media and information literacy; and (vi) other skills and competencies as defined by countries/economies. Refer to **Table 2** for descriptions of the domains.

The countries that participated in the Phase III study have different ways of defining and interpreting transversal competencies and each research group clarified its own definitions of the domains, so the definition adopted by ERI-Net is only a guide. Nevertheless, as Phase I and II research considered some domains (critical and innovative thinking, interpersonal skills and media and information literacy) as being particularly important, those domains were a significant focus of Phase III research. Furthermore, in considering the impact of globalization and regional integration on education reform in each country, the first five domains listed in Table 2 are considered the most relevant.

Table 2: The ERI-Net definition of transversal competencies

Domains	Examples of key skills, competencies, values and attitudes
Critical and innovative thinking	Creativity, entrepreneurship, resourcefulness, application skills, reflective thinking, reasoned decision-making
Interpersonal skills	Communication skills, organizational skills, teamwork, collaboration, sociability, collegiality, empathy, compassion
Intrapersonal skills	Self-discipline, ability to learn independently, flexibility and adaptability, self-awareness, perseverance, self-motivation, compassion, integrity, self-respect
Global citizenship	Awareness, tolerance, openness, responsibility, respect for diversity, ethical understanding, intercultural understanding, democratic participation, conflict resolution, respect for the environment, national identity, sense of belonging
Media and information literacy	Ability to obtain and analyse information through information and communication technology (ICT), ability to critically evaluate information and media content, ethical use of ICT
Others	Skills and competencies as defined by countries/economies

3.2 Participating countries

Nine countries participated in the Phase III study,[9] one fewer than in the Phase I and II studies.[10] However, under Phase III more case studies were undertaken within China. While Shanghai and Hong Kong Special Administrative Region (SAR) participated in the Phase I study and only Shanghai participated in the Phase II study, Shanghai, Beijing and Hong Kong SAR participated in the Phase III study.

---

9   Australia, China (Beijing, Shanghai and Hong Kong SAR), India, Japan, Republic of Korea, Malaysia, Mongolia, Thailand and Viet Nam.

10 The Philippines participated in Phases I and II, but did not participate in Phase III.

3.3 Research questions

Phase III sought to build on the previous research phases by focusing on the support and preparation teachers have in order to teach transversal competencies, and examined the influence of globalization and regional integration processes on education reform. The following overarching research questions were developed by ERI-Net members to carefully investigate these matters.

1. To what extent do teachers feel prepared and supported to integrate the learning of transversal competencies into the classroom?
2. What are the successful/proven preparation/supports to help teachers enhance their skills to facilitate the learning of transversal competencies?
3. What are the challenges in ensuring sufficient opportunities to prepare and support teachers for better learning of transversal competencies?
4. To what extent is globalization influencing education reforms, especially those related to TVC learning?
5. What are the policy implications to ensure teachers are well prepared and supported to fulfil their roles?

Additionally, two sets of detailed questions were developed, with one set focusing on teachers' preparedness to facilitate learning of transversal competencies, including: (i) teachers' perceptions, (ii) school level support and (iii) students' perceptions of their learning of transversal competencies; and the other set focusing on the learning of transversal competencies in an increasingly interconnected world, including (i) teachers' preparedness to teach in a globalized context and (ii) teachers' preparedness to teach in a context of regional integration. The research questions proposed for Phase III can be found in the ERI-Net research framework, provided in **Annex A.**

3.4 Data collection methods

Both quantitative and qualitative data collection methods were used by the researchers in Phase III, including: (i) review of policy documents, such as school development plans, (ii) stakeholder interviews, (iii) questionnaires, (iv) focus group discussions and (v) observations of teachers in trainings at schools and teaching in classrooms. A summary of the data collection methods used in each country is provided in **Table 3**.

The primary stakeholders targeted for this study were teachers and principals, but researchers were encouraged to include students, parents and community members.

The ERI-Net Secretariat developed a generic questionnaire for teachers, to be adapted as appropriate by the case study research teams to suit local circumstances. This generic questionnaire is provided in **Annex B.**

All of the participating countries collected quantitative data through the use of questionnaires for teachers, and in some cases school leaders. Some research teams also conducted classroom and teacher training observations (e.g. China [Shanghai], Japan and Malaysia); while others extended their research to include interviews with policy-makers (Viet Nam and Japan) and with students (India).

All country case studies incorporated a review of national policy and curriculum, while some case studies included specific reference to school-level policy (Japan, Malaysia and Thailand). The Japan country case study employed the most extensive data collection methods.

Table 3: Summary of data collection methods used in the Phase III study, by country

Countries	Data collection methods				Other data collection methods		
	School Policy Review	Classroom observations	Interviews with school leaders/ teachers	Question-naires	National Policy Curriculum Review	Interviews with policy makers	Questionnaires and/or focus group discussions with students
Australia			●	●	●		
China: Beijing & Hong Kong SAR			●	●	●		
China: Shanghai		●	●	●	●		
India				●	●		●
Japan	●	●	●	●	●	●	
Republic of Korea			●	●	●		
Malaysia	●	●	●	●	●		
Mongolia			●	●	●		
Thailand	●		●	●	●		
Viet Nam			●	●	●	●	

3.4.1 School selection

ERI-Net encouraged researchers to visit between five and ten schools, preferably those already visited during the Phase II study. These schools were to be 'general schools', including lower secondary and/or upper secondary schools, the equivalent to International Standard Classification of Education (ISCED) levels 2 and 3.

The total number of schools that participated in the Phase III study was 457, including 255 secondary schools, 181 primary schools, 17 combination schools and four schools of an unspecified level (see **Table 4**). Some of these schools were visited by researchers (such as in the cases of Australia, the Republic of Korea and Japan), while other schools simply responded to questionnaires (Thailand). While several research teams sampled both primary and secondary schools (Australia, Japan and Malaysia), some researchers chose to sample only secondary schools (China and the Republic of Korea) and others sampled only primary schools (Viet Nam).

Table 4: Number of schools that participated in the Phase III study, by level and country

Countries	Schools, by level			
	Primary	Secondary	Combined (Primary and Secondary)	Total
1. Australia	4	2		6
2. China: Beijing & Hong Kong SAR		9		9*
3. China: Shanghai		73		73
4. India		11	17✿	28
5. Japan	12	7		19
6. Republic of Korea		6		6★
7. Malaysia	2	6		8
8. Mongolia	3	20		23
9. Thailand	158	121	4◊	283
10. Viet Nam	2			2
Total	181	255	21	457

*   Including five (5) secondary schools in Beijing and four (4) secondary schools in Hong Kong.
✿   Schools up to 8th grade level in India.
★   This total includes five (5) lower secondary schools and one (1) upper secondary school for the Republic of Korea case study.
◊   The level of these four schools is not specified in Thailand case study.

3.4.2 Questionnaire and interview respondents

Of the 2,621 respondents to the questionnaires, the majority (95 per cent) were teachers, with school principals making up 4 per cent and students making up 1 per cent.

In the country case studies that provided sex-disaggregated data (China, Shanghai; India; Thailand; Malaysia, Viet Nam and Mongolia), the majority of the respondents to the questionnaire for teachers were female (72 per cent). **Table 5** shows the number of respondents for each country.

Table 5: Number of questionnaire respondents, by position, sex and country

Countries	Questionnaire respondents									
	Teachers	Sex		School Principals	Sex		Students	Sex		Total
		M	F		M	F		M	F	
1. Australia	37	11	26	1		1	-	-	-	38
2. China: Beijing & Hong Kong SAR	14◇	-	-	7	-	-	-	-	-	21
3. China: Shanghai	1,490	320	1 170	73	-	-	-	-	-	1,563
4. India	25	17	6	3	1	2	30	-	-	58
5. Japan	164	-	-	23	-	-	-	-	-	187*
6. Republic of Korea	202	-	-	-	-	-	-	-	-	202
7. Malaysia	101	29	72		-	-	-	-	-	101
8. Mongolia	60	5	55	-	-	-	-	-	-	60
9. Thailand	283	174	77	7	-	-	-	-	-	290✦
10. Viet Nam	101	3	98	-	-	-	-	-	-	101
Total	2,477	548	1,406	114	1	2	30	-	-	2,621

◇ The teachers were all from Hong Kong.
* Of the total number of respondents to the questionnaire for the Japan case study, 54 per cent were female and 46 per cent were male.
✦ Of the 283 respondents to the questionnaire for the Thailand case study, only 251 provided information on their sex.

Several research teams conducted interviews with selected teachers and principals. The number of participants who were interviewed in each country are as follows. Australia: 10 teachers and 2 senior leaders; Hong Kong and Beijing, China: 42 teachers; Japan: 15 educators consisting of heads of municipal boards of education, officers of Akita Bureau of Education, school principals, vice principals and head teachers; the Republic of Korea: 13 teachers and 10 principals; Malaysia: 12 teachers and 8 school leaders; Mongolia: approximately 15 teachers and 2 training managers; Thailand: 6 school directors/deputy directors; Viet Nam: 10 teachers, 6 school board members, 2 principals, 2 ministry of education representatives.

3.4.3 Professional experience of respondents

Seven of the country case studies compiled data relating to the number of years of professional experience of the teachers and school principals who responded to the questionnaire. Comparative analysis of the level of teachers' experience revealed that in each country, except Mongolia, most teachers had over ten years of teaching experience. In China (Shanghai) and India, most school principals had over ten years of experience. In Japan, most had five years or less experience. See **Table 6** for a summary of the professional experience of the questionnaire respondents.

Table 6: Years of professional experience of questionnaire respondents, by country

Countries	Level of professional experience of respondents							
	Teachers (% and number)*				School principals (% and number)*			
	< 5 years	5-10 years	10-20 years	>21 years	< 5 years	5-10 years	10-21 years	>21 years
1. Australia	19% (7)	22% (8)	19% (7)	40% (15)				
2 China: Shanghai	18% (273)	19% (286)	30% (441)	30% (490)	33% (24)	31% (22)	36% (21)	7% (5)
3. India	16% (4)	12% (3)	36% (9)	36% (9)	-	33% (1)	-	67% (2)
5. Japan	3% (6)	5% (9)	20% (37)	51% (95)	73% (8)	18% (2)	0% (0)	9% (1)
6. Republic of Korea	-	-	68% (137)✦	-	-	-	-	-
7. Mongolia	40% (24)	28% (17)	23% (14)	9% (5)	-	-	-	-
8. Thailand	11% (32)	24% (67)	62% (175)◊	-	-	-	-	-

* Note numbers are presented in parenthesis.
✦ Note that no breakdown of the years of experience of the remaining 32 per cent of respondent teachers was given in the Republic of Korea study.
◊ Note that 274 teachers out of 283 respondents answered the question relating to years of experience in the Thailand country case study. There is no breakdown provided of the 62 per cent (175) as 'more than 11 years, with no indication of what percentage/number had more than 21 years of experience.

3.5 Limitations

While standard questionnaires were provided for collecting some data, these questionnaires were often adapted to the local contexts, which meant that the responses could not always be compared across countries. Furthermore, there was also significant diversity between the country case studies in terms of sampling methods, sample sizes and education levels covered, which limits the comparability of the findings.

Several case studies used selective and/or convenience sampling methods for selecting the schools, teachers and school principals to participate in their studies. In Thailand, for example, only teachers under the jurisdiction of the Office of the Basic Education (OBEC) were selected to participate in the study, while in India, due to institutional requirements, participants were selected by school leaders, and were therefore likely to be 'the best in school' rather than the most representative. In China (Shanghai) the participating schools were all 'new quality schools', which have an explicit focus on providing well-rounded education, and are receiving specific support for the integration of transversal competencies into teaching and learning processes.

Some of the country case studies had very small sample sizes, so it is likely that their Phase III findings do not give a full picture of teachers' professional development in relation to transversal competencies. In many cases, samples were small because of resource limitations. In the Viet Nam study, for example, rural schools were excluded the sample because of limited time and budget; and researchers were unable to collect data on pre-service teacher training for the same reasons.

Many of the country cases examined both primary and secondary schools, while others chose only one level of education. In most cases there was no analysis of the differences between grade or age levels in terms of teaching TVCs. This could be significant for teacher training and support since the developmental needs of students are quite different across grades and ages. This was noted in the study from the Republic of Korea, which focused on secondary education. The researchers noted that there was likely to be a big difference between integrating TVCs into secondary schools compared to primary schools, as at primary level there is less academic pressure and subsequently more space for the integration of transversal competencies. Differences in the sampling methods are summarized in Table 4.

While this study hoped to examine the extent to which globalization is influencing education reforms related to TVCs, most of the country cases did not explore this topic in detail. The data collected and country analyses are mainly limited to teachers' perceptions of globalization, their roles in relation to globalization and the existing policies in this regard.

Another limitation is that the country studies rely mainly on teachers' perceptions, rather than on more objective data obtained, say, through classroom observations. Given that there can be a large disconnect between what people say they do (or how well they say they do it) and what they actually do (or how well they actually do it), this limitation has significant implications for the findings.

Despite these limitations, however, the findings of the study are valuable in that they provide an insight into teacher's views of the current system of professional development in relation to transversal competencies, teachers' perceived preparedness to integrate transversal competencies into teaching practices and teachers' unmet needs in terms of professional development and teaching materials.

4. Key findings

This section examines the findings of the Phase III study with regard to the key research questions articulated in the research framework. The country case studies provided examples of good practice (highlighted in text boxes) relating to in-service training that helps teachers develop their capacity to teach transversal competencies, and relating to how teachers and schools have integrated transversal competencies as part of school curricula, lesson planning and practice.

4.1 Teacher perceptions and preparedness for transversal competencies

Essential skills for teaching transversal competencies

The results of the study indicate that majority of teachers who participated in the Phase III study recognize the inherent value of teaching transversal competencies to their students. Furthermore, the study found that teachers are acutely aware that the integration of transversal competencies in their practice demands a change in their role as teachers, and they proactively attempt to implement teaching strategies in line with this change.

A teacher from **Hong Kong, SAR,** expressed how transversal competencies are integrated into lessons as follows:

> The Life and Society curriculum for junior years allows students to undertake project-based learning. This method emphasizes inquiry-oriented learning, analytical skills, the ability to synthesize data and critical thinking. Students are assigned to work in groups, choose a particular issue or topic and conduct research on it for the whole academic year. We set different themes for them to work on (for example, healthy living). In order to find solutions to a particular issue, students need to collaborate and communicate with each other and play different roles within the group. In the end, what they have learned during the process will affect how they will live their lives and see things in the future (Hong Kong SAR, China).

The **Australia** study found that the commitment from teachers to integrate transversal competencies goes beyond trialling different teaching modalities in their classrooms, to an understanding that they themselves need to embody transversal competencies when working with students.

A review of the skills and competencies considered by teachers in each country as being essential to facilitate the learning of transversal competencies reveals interesting similarities and differences (see **Table 7**).

Table 7: Essential skills and competencies needed to facilitate TVC learning (teachers' perceptions)

Country	Essential TVCs for teachers (according to teachers)
1. Australia	• Communication skills • Reflective thinking • Listening • Critical thinking • Respect for diversity • Maintaining leadership by encouraging students
2. China: Beijing and Hong Kong SAR	• Communication skills • Reflective thinking • Organizational skills
3. China: Shanghai	• Affection for students • Passion for teaching • Use of teaching methods to improve students' motivation for learning
4. India	• Communication skills • Assessment skills • Motivating self and others, • Creativity • Maintaining leadership by encouraging enthusiasm interest and effort in the classroom • Passion for teaching
5. Japan	• Communication skills • Facilitation skills • Organizational skills
6. Republic of Korea	• Communication skills • Facilitation skills • Maintaining leadership by encouraging enthusiasm interest and effort in the classroom
7. Malaysia	• Communication skills • Creativity • Assessment skills, • Listening skills
8. Mongolia	• Communication skills • Organizational skills • Assessment skills, • Creativity
9. Thailand	• Creativity • Communication skills • Collaboration skills, • Decision-making skills
10. Viet Nam	• Communication skills • Passion for teaching • Use of appropriate teaching methods

Communication skills were ranked as having high importance by teachers in

all of the participating countries, with the exception of **China** (Shanghai). Interviews with teachers revealed that they felt communication skills were integral to teaching transversal competencies.

In **Malaysia**, for example, a teacher explained this as follows:

> The skills that I need the most are communication skills. This is because teachers are considered facilitators who should be able to communicate and motivate students in transversal competency learning.

In **China (Beijing)**, a teacher explained that communication skills should be the first skill that teachers develop:

> In order to know how to teach them [children], you need to know how to communicate with them. ... Communication is like a bridge, if the communication is set, other skills will gradually come along.

Teachers in **Japan** and the **Republic of Korea** ranked facilitation skills highly, while teachers in **Thailand, India, Malaysia and Mongolia** ranked creativity highly. Many teachers in **India** (93 per cent), **Malaysia** (80 per cent) and **Mongolia** (65 per cent) felt that assessment skills were essential to facilitating the learning of transversal competencies.

Teachers in some countries (**Viet Nam, China [Shanghai]** and **India)** ranked passion for teaching highly, indicating that a teacher's level of commitment makes as much difference to learning outcomes as specific teaching skills. Teachers in **Mongolia, Japan** and **China (Beijing and Hong Kong SAR)** identified organizational skills as being of high importance. This emphasis on organizational skills perhaps indicates that these teachers are aware that teaching of transversal competencies takes teachers' professional time, and teachers must therefore organize their schedules so as to balance this time for TVCs against the time needed to teach traditional academic subjects.

While majority of teachers in **Australia** and **China (Beijing and Hong Kong, SAR)** ranked reflective thinking highly, only a third of teachers in **Japan** (27 per cent), **Mongolia** (32 per cent) and **Viet Nam** (34 per cent) rated this skill as essential. Some teachers in **Australia** reported that they plan their lessons with traditional content but use reflective thinking to identify which transversal competencies was being covered implicitly in their lessons or could be covered by making adjustments. Other teachers reported that they use reflective thinking and creative thinking to extract meaningful and practical examples of transversal competencies from their life experiences to inform lessons. Similarly, teachers in **Malaysia** felt that it was important to first be an expert in terms of knowledge of traditional subjects before they could integrate transversal competencies within their lessons.

While the ethical use of ICT was considered essential by a majority of teachers in most countries, only 22 per cent of teachers in **Japan** and 33 per cent of teachers in **Hong Kong SAR, China** felt this way. According to the researchers who conducted the **Japan** case study, the low level of importance attached to the ethical use of ICT may be because of its newness in Japanese schools and may not be considered a priority. The researchers of the **Hong Kong SAR** case

study felt that the ethical use of ICT was not considered important because teachers in Hong Kong SAR may have ranked skills depending on how they are related to achievement in the high stakes examination system and to academic skills.

Teachers sampled in **China (Shanghai), India** and **Japan** felt that the skills to design and modify curricula and teaching materials were also ranked low, which is an interesting finding given that teachers need to adapt lesson content to accommodate transversal competencies in the classroom. This could perhaps be explained by the lack of autonomy given to teachers in some schools regarding revising lesson content.

Essential skills for students in an interconnected world

The surveyed teachers in the participating countries largely agreed on the competencies that are of the utmost importance in enabling students to navigate an increasingly interconnected society, as shown in **Table 8**. The table lists the competencies under the key domains of the definition of transversal competencies adopted for the ERI-Net Phase III study.

Table 8: Competencies needed by students in an interconnected world (as perceived by teachers), by country

Country	Competencies
Malaysia	*Critical and innovative thinking* • Creativity and application skills
	Interpersonal skills • Communication skills and teamwork
	Media and information literacy • Ability to obtain and analyse information through ICT
Mongolia	*Critical and innovative thinking* • Creativity and application skills
	Interpersonal skills • Communication skills, teamwork and compassion
	Media and information literacy • Ethical use of ICT
Viet Nam	*Critical and innovative thinking* • Creativity and resourcefulness
	Global citizenship • Responsibility and ethical understanding
China (Shanghai)	*Critical and innovative thinking* • Creativity and resourcefulness
	Interpersonal skills • Communication skills and teamwork
	Media and information literacy • Ability to obtain and analyse information through ICT
China (Hong Kong SAR)	*Critical and innovative thinking* • Reasoned decision-making
	Interpersonal skills • Communication skills
India	*Critical and innovative thinking* • Creativity, application skills and reflective thinking
	Interpersonal skills • Communication skills, teamwork and collaboration
	Media and information literacy • Ability to obtain and analyse information through ICT
Japan	*Critical and innovative thinking* • Resourcefulness and reasoned decision-making
	Interpersonal skills • Communication skills and collaboration
	Media and information literacy • Ability to obtain and analyse information through ICT
Republic of Korea	*Critical and innovative thinking* • Creativity and reasoned decision-making
	Interpersonal skills • Communication skills and collaboration
	Media and information literacy • Ability to obtain and analyse information through ICT
Thailand	*Critical and innovative thinking* • Creativity and application skills
	Interpersonal skills • Communication skills and collaboration
	Media and information literacy • Ability to obtain and analyse information through ICT

Under the critical and innovative thinking domain, the teachers perceived creativity as being the most important skill for students to have, followed by resourcefulness, teamwork and collaboration. The competency most frequently identified by the teachers as being least needed was entrepreneurship, followed by reasoned decision-making. In **China (Shanghai)**, where researchers not only surveyed teachers but also school leaders and subject leaders, all three groups ranked entrepreneurship and reasoned decision-making as least important.

Within the interpersonal domain, teachers perceived communication skills as the most important competency for students to master in an interconnected world. In six out of seven countries the teachers gave top priority to communication skills, followed by teamwork. This echoes the finding that teachers perceived communication skills to be of utmost importance for the facilitation of the learning of TVCs. The competencies within the interpersonal domain that teachers (in most countries) perceived as being least needed were organizational skills, empathy and collegiality.

For the media and information literacy domain, teachers in five out of seven countries rated the ability to obtain and analyse information through ICT as the most important competency for students. They perceived the least important competencies in this domain to be the ability to critically evaluate information and media content and the ethical use of ICT.

Teachers at a school in **Beijing** viewed the lack of parental involvement in internet usage and control as a hurdle for media and technology adoption and felt that students lacked a sense of responsibility in internet usage. Students in **India** remarked in focus group discussions that they knew about the ethics of using ICT but measures were not taken at school to enforce this, they got away with 'copy and paste' from the internet.

In most of the participating countries at least half of the teachers had a medium to high level of awareness regarding their school policy on the importance of preparing students for a globalized world. The percentage of teachers being 'very much' or 'to some extent' aware was 50 per cent in **Mongolia**, 60 per cent in **Japan**, 63 per cent in the **Republic of Korea**, 72 per cent in **Viet Nam** and a staggering 93 per cent in **Thailand**. The higher levels of teacher awareness in **Viet Nam** and **Thailand** may be a result of the intensive process of regional integration these countries have been part of through the Association of South East Asian Nations (ASEAN) Economic Community.

The study found that school leaders were often far more aware than teachers of how globalization is shaping school policies and curricula. In **Japan**, for example, the study results indicated that school leaders had far higher levels of awareness compared to teachers regarding how the 2008 Courses of Study was geared towards preparing students for a globalized world, and how globalization was influencing daily lessons.

The study also found that teachers often lack awareness of the change in their role in response to a more 'globalized' curriculum. In **Viet Nam**, for example, almost a third (31 per cent) of teachers indicated that they did not know how their role would change as a result of globalization. A similarly low level of recognition of how teacher roles would change was identified by the researchers in the **China (Shanghai)** study.

Many teachers who were interviewed were hard pressed to provide examples of school activities that developed students' transversal competencies. However, teachers were able to list some subjects and topics related to developing transversal competencies in a globalized world. Teachers interviewed in the **Republic of Korea**, for example, explained that topics such as world citizenship and cultural diversity were being incorporated into social studies and ethics classes and that, in addition to standalone 'globalization' subjects, transversal competencies were integrated into traditional subject classes and as part of extra-curricular activities. In **Hong Kong SAR, China**, teachers remarked that globalization is part of the six modules of the Liberal Studies secondary school subject, while in **Beijing, China**, teachers noted that the concept of globalization is being taught in geography classes. Teachers interviewed in **Japan** identified activities such as the introduction of English education and international exchange events as subjects linked to globalization. Similarly, teachers in **Malaysia** provided examples of 'school linkages and networking programmes' as being linked to globalization.

In **Shanghai, China,** the 'international understanding' curriculum being implemented in schools of Pudong District was provided as an example of programmes relating to building students' 'global vision', 'global awareness' and respect for different cultures. In contrast, many of the teachers interviewed in **Hong Kong SAR and Beijing** felt that while the skills that enabled students to succeed in a globalized world are important, these skills are currently not being promoted or prioritized in their schools. However, the interview responses suggest that the subjects for which teachers have responsibility is a key determinant of the way they see and understand globalization and transversal competencies.

Box 1: Thailand - Transversal competencies related to regional integration

The Thailand country case study compiled in-depth survey and interview data relating to the key questions about regional integration.

Under the critical thinking and innovative thinking domain, Thai teachers felt that **application skills** were the most important in enabling students to succeed in the context of economic integration through ASEAN. This was followed by creativity. Under the interpersonal skills domain, Thai teachers rated **communication skills** as being the most necessary for Thai teachers to have, followed by **sociability**. The lowest rated competencies were organizational skills and compassion. The highest-rated competency under the media and information literacy domain was the **ability to obtain and analyse information through ICT**.

These perceptions of teachers' needs reflected the competencies that teachers viewed as highest and lowest priorities for students in regard to regional integration.

With regard to how teachers perceive their level of preparedness to support students to develop the competencies that will enable them to prosper within the context of regional integration, more than half (56 per cent) of Thai teachers felt that they had a 'high' or 'very high' level of preparedness. Two thirds (66 per cent) felt that their roles had changed to a 'high' or 'very high' degree because of policy and curriculum changes introduced to prepare students for ASEAN integration.

Responses in interviews with teachers indicated that schools now place greater emphasis on English and other ASEAN languages in the curricula, and now have a requirement to increase the amount of ASEAN-related issues in their lesson content. Some teachers felt, however, that although school curricula, plans and policies were being modified to accommodate the education demands of regional integration, the 'actual implementation has not been successful'. The majority of teachers felt that transversal competencies have 'high' or 'very high' significance in preparing students for regional integration, a view expressed thoughtfully by one Thai teacher who noted that, 'TVCs are not only necessary for successful ASEAN integration, they are necessary for living and working successfully in the globalized world. I believe TVCs would make the world more developed and peaceful'.

Source: Sinlarat and Thadphoothon, 2015

Teachers' skills in facilitating transversal competencies

Understanding teachers' perceptions regarding how equipped they are to facilitate the learning of transversal competencies is important in order to identify gaps in professional skills. The study findings indicate that majority of the surveyed teachers in the region felt that they have a strong passion for and love of teaching, and see this passion as crucial in enabling them to integrate transversal competencies into their teaching practice. Teachers in seven countries listed this as one of the most important attributes. This indicates there are high levels of motivation among teachers in the Asia-Pacific

region, which could be drawn upon to push for changes in teachers' roles in regard to developing students' transversal competencies.

Most teachers from **Australia, China (Hong Kong SAR and Beijing), India** and the **Republic of Korea** felt that they were also equipped with communication skills, while teachers in **Malaysia, Mongolia** and **Viet Nam** felt that they were equipped with 'a comprehensive knowledge of subject matter and student development'. **Table 9** provides a summary of the competencies teachers feel most equipped with.

Table 9: Top three competencies teachers feel equipped with, by country

Country	Competencies
Australia*	• Passion/love for teaching • Fairness • Communication skills etc.
China: Beijing and Hong Kong SAR✿	• Communication skills • Organizational skills • Use of appropriate & effective teaching methodologies and teaching approaches, etc.
China: Shanghai◇	
India	• Communication skills • Assessment skills • Passion/love for teaching
Japan	• Passion/love for teaching • Collaboration • Empathy
Republic of Korea	• Communication skills • Respect for diversity • Empathy • Passion/love for teaching
Malaysia	• Passion/love for teaching • Comprehensive knowledge of subject matter and student development • Inspiring respect and trust among students
Mongolia	• Comprehensive knowledge of subject matter and student development • Collaboration • Listening skills
Thailand	• Passion/love for teaching • Fairness • Tolerance
Viet Nam	• Passion/love for teaching • Comprehensive knowledge of the subject matter and student development • Respect for the environment

* In Australia, teachers ranked several competencies equal third: communication and organizational skills, creativity, maintaining leadership by encouraging enthusiasm, motivating self and students, inspiring respect and trust amongst students, continuous and organized self-learning, use of appropriate teaching methods, comprehensive understanding of subject matter, and adapting curriculum to learning context.

✿ In Beijing and Hong Kong SAR, China, teachers ranked comprehensive knowledge of the subject matter and student development as equal third among competencies they felt equipped with; and ranked continuous and organized self-learning, decision-making skills and facilitation skills as competencies they felt least equipped with.

◇ The Shanghai study did not collect data on teachers' perceptions of the competencies they are equipped with.

Teachers in eight[11] of the nine countries felt that they possessed communication skills to 'some' or to 'a great' extent – an important result given that teachers identified communication skills as one of the most important skills needed to facilitate the learning of transversal competencies in (Table 7).

Majority of teachers in eight of the nine countries felt that they had skills in the 'use of appropriate and effective teaching methods'. In **Japan**, however, a large percentage of respondents (60 per cent) felt they possessed very few skills or no skill at all in this area. Furthermore, only around half (51 per cent) of the respondents in **Japan** felt they had skills in the ethical use of ICT, and fewer than half (49 per cent) felt they had skills in critical thinking which could suggest potential skill area that needs to be developed. A significant percentage of teachers in **Viet Nam** (38 per cent) and **India** (25 per cent) felt they were least equipped with critical thinking skills.

A quarter of respondents in the **Republic of Korea** and **India** felt that they had very little skills in the 'effective use of ICT'. Similarly, few teachers in the **Republic of Korea** felt they were equipped with very little skills in creativity (25 per cent), facilitation (21 per cent), ethical use of ICT (20 per cent) and organizational skills (19 per cent)

Flexibility in teaching practice also received a lower response from teachers in **China (Beijing and Hong Kong SAR)** and almost half (46 per cent) of the surveyed teachers in **Japan** felt that they were not very skilled in this area. This may reflect the perception many teachers have that the curriculum is already overloaded and heavily weighted towards the teaching of traditional academic subjects, and as a result they have difficulty in responding to the demands to integrate transversal competencies into their lessons; or it could reflect a need for teachers to develop the ability to flexibly integrate transversal competencies into practice.

Overall, these findings reflect the importance placed on certain competencies. The use of effective teaching methods, the ethical use of ICT, critical thinking and effective use of ICT, for example, were not listed by respondents from these countries as being in the top three essential skills for facilitating transversal learning and were also not skills held by many teachers. Further investigation is needed to ascertain whether there is a direct connection between the perceived importance of these competencies and teachers' capacity to facilitate the learning of these competencies.

Teachers' confidence in facilitating transversal competencies

The study results indicate that the majority of the surveyed teachers in six of the countries (**Australia, India, the Republic of Korea, Mongolia, Thailand** and **Viet Nam**) are moderately confident in their abilities to support the learning of competencies (Table 10). Some teachers in these countries have a high level of confidence, ranging from 12 per cent in **Thailand** to 39 per cent in **Australia**. But a noteworthy percentage of teachers have low confidence, ranging from 3 per cent in **Mongolia** to 19 per cent in the **Republic of Korea**.

---

11 Australia, China [Beijing and Hong Kong, SAR), India, Republic of Korea, Malaysia, Mongolia, Thailand, Viet Nam

Table 10: Teachers' levels of confidence in teaching transversal competencies, by country

Country	Teacher confidence in teaching transversal competencies		
	Very low/Low (%)	Medium (%)	High (%)
Australia	6	55	39
China: Beijing and Hong Kong SAR*	-	-	-
China: Shanghai	-	-	-
India	18	46	36
Japan	-	-	-
Republic of Korea✿	19	75	-
Malaysia✦	-	-	-
Mongolia	3	72	25
Thailand	6	59	12
Viet Nam◇	4	53	47

* For the China (Beijing and Hong Kong SAR) country case study, a comparison of overall confidence between teachers and principals was given, but no breakdown of teacher confidence levels.

✿ The 'medium' level here combines 'medium' and 'high' teacher confidence, as no further breakdown was given in the Republic of Korea country case study.

✦ No statistics were provided regarding teacher confidence levels in the Malaysia country case study, however interview responses indicate considerably high confidence among teachers.

◇ These are mean percentages.

Analysis by the researchers provides further insight into teacher confidence levels. Researchers in the **Republic of Korea**, for example, suggested that confidence levels among teachers from schools that did not participate in the study were likely to be lower than among teachers from surveyed schools, as the surveyed schools were those proactively engaged in pilot programmes to improve the integration of transversal competencies into the classroom.

In **Australia**, responses to interviews revealed high levels of confidence among teachers and school leaders, as most interviewees said they were comfortable with their understanding of what transversal competencies are and therefore felt confident in facilitating the learning of them in their classrooms. Teachers' confidence appears to stem from an inherent belief in the ethos of holistic learning that transversal competencies promotes, as one teacher explained, 'I think education is about the whole child as a learning and thinking person within a society, who is going to go on with lifelong learning. … That is what I think schooling is about, it is about making the world a better place'. In **Australia**, teachers who indicated they did not feel confident also indicated that they were overwhelmed by the enormous demands on their time, not least by the need to use numerous mandated learning frameworks in their practice.

In **Malaysia**, the responses to interviews and results of classroom observations also indicated high levels of teacher confidence in facilitating transversal competencies in their practice. According to some teachers, confidence was also on the rise, due to the provision of specialized pedagogical support. In some cases, however, although the teachers were confident, they said they were not motivated to facilitate the learning of transversal competencies as there was an over-emphasis on high achievement in examinations of traditional subjects in their schools and they therefore lacked classroom time to encourage the learning of TVCs; and they also had heavy workloads as a result of increasing administrative responsibilities.

In **India**, researchers found that teachers had high awareness of transversal competencies, but low confidence in handling them. They identified a time lag in the provision of support to teachers to improve their skills in implementing transversal competencies in their practice. In **Thailand**, researchers examined whether gender affected teachers' confidence levels, but found no statistically significant results.

4.2 Professional development of teachers

Understanding the perceptions of teachers regarding the effectiveness of their pre-service and in-service training helps to identify optimal practices, challenges and areas for improvement.

Pre-service training

Seven of the nine country case studies[12] examined the extent to which teachers felt that pre-service training was relevant for teaching and learning transversal competencies. In most cases, teachers were asked to assess the effectiveness of specific components of their pre-service training, including practicum teaching, course work and induction programmes. Overwhelmingly, teachers in six of the seven countries identified practicum teaching as being the most relevant to their learning of how to facilitate the acquisition by students of transversal competencies. The exception was the **Republic of Korea**, where teachers felt that course work was more relevant.

In the **Republic of Korea**, the study found that 60 per cent of teachers felt their pre-service training was 'very much' or 'to some extent' relevant in terms of enabling teachers to facilitate the learning of TVCs. The researchers noted that it is not surprising that around 40 per cent of the teachers did not find the pre-service training to be relevant to TVCs since the notion of 'transversal competencies' did not exist when many of the surveyed senior teachers undertook their pre-service training. The researchers who implemented the **India** case study came to a similar conclusion.

In **Australia**, around 60 per cent of teachers who had undergone pre-service training in recent years felt that that their practicum teaching experience was relevant to facilitating their learning of transversal competencies, and around 30 per cent felt their course work had been relevant. A senior leader responsible

---

12   Australia, China [Beijing and Hong Kong SAR], India, Malaysia, Mongolia, the Republic of Korea and Thailand.

for a new teacher induction programme noted during interview that new teachers 'come with an approach' that includes transversal competencies, while a new teacher stated that transversal competencies had been embedded implicitly within his pre-service training, but that most of the training relevant to teaching transversal competencies was occurring on the job, in school.

Many teachers interviewed in **Malaysia**, as in **Australia** also indicated that their pre-service training had been relevant 'to some extent' for providing them with the skills to foster learning of transversal competencies, noting their pre-service training had included implicit and/or explicit reference to transversal competencies. Most of the teachers interviewed cited that they had been, at some point in their pre-service training, exposed to materials and information relating to the concept of transversal competencies, though these competencies were referred to using different terms. Furthermore, they had been made aware of the importance of assisting students to develop into well-balanced people who possess a command of the knowledge, skills and values essential in a world that is highly competitive, challenging and globalized.

Some teachers in **Malaysia** felt that their pre-service training had not been sufficient to equip them with the skills required to facilitate the learning by students of transversal competencies, and felt that, rather, teaching practice in schools had been more important in the development of these skills. As one teacher explained, 'I feel that my pre-service training was not sufficient for me to teach transversal competencies, whereas I have learned a lot from my experience at school' (Nordin, 2015).

Box 2: Malaysia – Transversal competencies in pre-service teacher training

During teachers' training years, transversal competencies are taught as a separate subject or are embedded into other subjects. The courses and programmes relating to transversal competencies include ethnic relations, character building for teachers, behaviour and classroom management, technology in teaching and learning, teachers and current challenges, culture and learning, leadership and teachers' professional development, politeness in Malaysian society, challenges and current issues of the world, English for effective communication and learning skills.

All of the courses furnish teacher trainees with various transversal competencies, including creativity, resourcefulness, reasonableness, collaboration, compassion, discipline, flexibility, tolerance, responsibility, communication skills, organizational skills, skills in reflection and perseverance, self-motivation, integrity, global awareness and respect for diversity.

The main objective of the course 'character building for teachers', for example, is to ensure the holistic development of teachers and produce teachers who are knowledgeable, progressive and resilient.

This course is carried out in six phases across the training years, and includes activities such as out-of-college camping, workshops, team-building exercises, community service and benchmarking visits. The various activities are designed to nurture the characteristics and the art of being a teacher, to build teachers' self-esteem, to encourage teachers to develop a competitive spirit, to enable them to face challenges in the teaching profession and to equip them with fundamental skills to thrive in society. The training and exposure enable teacher trainees to consolidate transversal competencies in their lessons and foster such competencies in their students.

Source: Nordin, 2015

In-service training

The researchers analysed in-service training in the nine countries/economies with the aim of to better understanding how relevant the current training programmes were in developing teachers' skills in integrating transversal competencies, and what additional training may be needed or what challenges must be overcome to deliver relevant in-service training.

Box 3: Republic of Korea – Professional development and training plan

The table below presents an example of a yearly plan for training, workshops and consultation programmes at a middle school in the Republic of Korea that was designated as a 'curriculum research school facilitating core competencies' for the 2013/14 academic year.

Month	Activity	Person responsible	Source
Mar.	Plans for running research school	Research director	Within school
Mar.	Training on facilitating core competencies	Principal	Within school
Mar.	Reorganization of curriculum for interdisciplinary classes	Research director	Within school
Apr.	Training programme for facilitating core competencies in Korea	Principal	Invited lecturer
Apr.	Understanding of core competencies and their application in research school	Researcher from KICE	Invited lecturer
Apr.	Lessons from visiting other research schools	Research director	Within school
Apr.	Reorganization of research tasks and responsibilities of research school	Research director	Within school
Apr.	Plans for bloc time classes for the 2013 academic year	Research director	Within school
May	Plans for interdisciplinary classes	Research director	Within school
May	Introduction of bloc time for facilitating core competencies Writing lesson plans for interdisciplinary classes	Research director	Within school
May	Plans for the implementation of free semester curriculum	Teaching director	Within school
May	Training for the implementation of free semester elective programs	Teaching director	Within school
Sept.	Promotion and evaluation of research school	Research director	Within school
Sept.	Lessons from visiting other research schools	Research director	Within school
Sept.	Happy class designed for facilitating core competencies	Professor/ Head teacher	Invited lecturer
Oct.	Writing a report on the outcome of research school	Research director	Within school
Oct.	Career path education for raising future talents	Career path director	Within school
Oct.	Conference for reporting the outcome of research school	Research director	Within school
Nov.	Project-based class for the 2014 academic year	Research director	Within school

Source: Cho et al., 2015

Five countries[13] examined the overall level of **teacher satisfaction** with current in-service training in enabling them to facilitate the learning of transversal competencies. The findings indicate that the surveyed teachers in these countries were, in general, satisfied to 'some extent' or 'very much' with the in-service training they were receiving. However, a substantial minority of the surveyed teachers reported having 'very little' satisfaction or 'none at all' with the current training they were receiving. Researchers in **Thailand** investigated gender dimensions to in-service training satisfaction levels, but found no major differences in levels of satisfaction between male and female teachers.

An analysis of interview responses sheds some light on why some teachers are dissatisfied. In **Australia**, for example, some teachers described the school-level training as being 'person dependent', because if a school-level training coordinator has an interest in transversal competencies then training in TVCs is provided. Thus, when coordinators do not have an interest in transversal competencies education, training in TVCs is not provided. Other teachers noted 'a bit of a vacuum' within in-service training relating to TVCs, resulting in teachers undertaking self-directed learning about how to facilitate the learning by students of transversal competencies, drawing guidance from curriculum documents.

In **Malaysia**, half of the teachers surveyed were satisfied with the in-service training they received, with some acknowledging helpful assistance from school administrators in integrating transversal competencies into their lessons. The other half were dissatisfied. This was generally because in-service training discussions relating to TVCs typically only focused on aspects of testing and evaluation, rather than on how to teach TVCs.

The researchers in the **Republic of Korea** concluded that, given that the surveyed teachers were from research schools and receive more support for in-service training than teachers from other schools, more effective in-service training is needed for all teachers in every school in the country. This reflection is salient and may be relevant to all of the countries that participated in the study, but particularly those that used selective sampling methods.

When teachers were asked what types of professional development activity were **available** to them, the majority listed 'lectures'. This was particularly the case among teachers in **China (Beijing**, **Hong Kong SAR and Shanghai)**, **India**, **Thailand** and **Viet Nam**. The next most-available form of training activity was 'exchanging ideas with colleagues', followed by lesson study and peer coaching. Among the least available activities identified by teachers were 'opportunities and funding assistance to enrol in university' and 'other types of in-service training'. While the teachers in most countries ranked 'self-directed professional learning' in the middle range of available activities, teachers in **Australia** and the **Republic of Korea** ranked it among the most available activities. Table 11 provides a summary of the availability of in-service training for teachers.

---

13   Australia, Republic of Korea, Malaysia, Mongolia and Thailand.

Table 11:Ranking of the availability of in-service training related to transversal competencies, as perceived by teachers, by country and type of training

Type of in-service training	Country (rank of type of training on scale of 0 to 9)										
	Australia	China, Beijing and Hong Kong, SAR	China, Shanghai	India		Japan	Republic of Korea	Mongolia	Thailand	Viet Nam	Overall Ranking
				GS	PS						
Lectures (school-based, regional, national)	4	1	1	1	2	2	3	4	1	1	**1**
Exchanging ideas/ consultation with colleagues	2	2	4	2	1	5	2	6	2	1	**2**
Lesson study (including demonstration lessons)	6	1	2	4	3	1	4	1	7	3	**3**
Peer Coaching	3	2	3	3	2	3	-	2	3	2	**4**
Visiting other schools to observe and learn	5	3	5	4	2	4	-	3	5	4	**5**
Self-directed professional development	1	5	6	2	3	6	1	5	6	-	**5**
Participating in leadership roles (coaching and data analysis)	5	4	-	4	2	-	-	7	4	4	**7**
Opportunity and funding assistance to enrol in university	7	4	-	5	-	7	-	2	8	-	**8**
Others	8	-	7			8	-	-	-	-	**9**
No professional development opportunity is available	-	-	-	-	-	-	-	8	9	-	**10**

GS – Government School; PS- Private School
* Rank of 1 is perceived as most available.
  Rankings are distributed as such: 1 is given a weighted value of 10, 2=9, 3=8, 4=7, 5=6, 6=5, 7=4, 8=3, 9=2 & 10 = 1
- No response

When asked to list the most **relevant** type of activity of in-service training in relation to TVCs, most teachers, overall, listed 'exchanging ideas with colleagues', followed by 'lectures', 'lesson study' and 'peer coaching'. However, in half of the countries in which teachers were asked this question, namely in **Australia**, **Japan** and **Mongolia**, teachers considered lectures as among the least relevant professional learning activity related to TVCs.

Overall, the teachers considered the least relevant activities to be 'the opportunity and funding assistance to enrol in university', 'self-directed professional development', 'visiting other schools to observe and learn' and 'participating in leadership roles'. **Table 12** shows the ranking given to the relevance of each type of in-service training for six countries.

Table 12: Ranking of the relevance of in-service training, as perceived by teachers, by type and country

Type of in-service training	Country (rank of type of training on scale of 0 – 9)							Overall Ranking*
	Australia	China, Beijing, and Hong Kong, SAR	India		Japan	Mongolia	Viet Nam	
			GS	PS				
Exchanging ideas/ consultation with colleagues	1	1	2	1	2	4	2	**1**
Lectures (school-based, regional, national)	4	2	1	2	4	6	1	**2**
Lesson study (including demonstration lessons)	5	1	4	3	1	2	4	**2**
Peer Coaching	2	3	3	2	-	1	3	**4**
Participating in leadership roles (coaching and data analysis)	6	4	4	2	-	5	8	**5**
Visiting other schools to observe and learn	3	5	4	2	3	7	6	**6**
Self-directed professional development	1	6	2	3	5	3	5	**7**
Opportunity and funding assistance to enrol in university	7	7	5	-	6	8	7	**8**
No professional development opportunity is available	-	-	-	-	-	-	-	
Other	-	-	-	-	-	-	-	

GS – Government School; PS- Private School
* Rank of 1 is perceived as most relevant. Rankings are distributed as such: 1 is given a weighted value of 8, 2=7, 3=6, 4=5, 5=4, 6=3, 7=2, & 8=1
- No response

Teachers were asked to indicate the **frequency** of the in-service training they received. The responses indicate that most teachers receive professional development training once or twice a semester, with the next common frequency once or twice per month. Greater frequency of training is not necessarily related to more effective teaching, however. In **Japan's** Akita Prefecture, education authorities are attempting to shift teacher training from a focus on quantity to quality. Thus, training frequency has been reduced and they are encouraging teachers to engage in more on-the-job training in the classroom. **Table 13** below shows the ranking of the responses from teachers in seven countries.

Table 13: Frequency of in-service training, by country

Frequency of in-service training	Country								
	Australia	China: Beijing, and Hong Kong, SAR	China: Shanghai$^\diamond$	Japan	Republic of Korea	Mongolia	Thailand	Viet Nam	Overall Ranking*
Once or twice a semester	3	1	-	1	1	1	1	3	**1**
Once or twice per month	1	2	-	2	2	2	2	1	**2**
More than once a week	2	-	-	4	3	4	4	2	**3**
Once per academic year	-	2	-	3	-	3	3	4	**4**
Did not participate in training last year	-	-	-	5	-	5	5	-	**5**

* Rank of 1 is the highest frequency. Rankings are distributed as such: 1 is given a weighted value of 5, 2=4, 3=3, 4=2, 5=1
$\diamond$ China, Shanghai is not included in the over-all ranking but reported that more than half of teacher respondents participated in school-based training 1-2x per month
- No response

There is a high degree of similarity between the modes of training that are considered most available and those that are considered most relevant. Furthermore, the types of training that are considered most available and relevant are the types that are typically conducted in school. There is also similarity between the least available and least relevant activities. It is not clear to what extent these findings represent cause and effect. Is, for example, 'visiting other schools to observe and learn' of limited availability because of its low relevance? Or is it perceived as having low relevance because it is not readily available or accessible to teachers?

Although the responses to the questionnaire indicate that existing modes of training are considered relevant to facilitating learning about TVCs, responses to interviews indicated that the relevance and quality of in-service training is an issue of considerable concern among teachers. In **China (Beijing and Hong**

Kong SAR), for example, some teachers expressed concern over the quality of training provided by the Education Bureau, observing that the workshops and courses dealt with transversal competencies in a superficial way. Similarly, in **Malaysia** teachers acknowledged that they received substantial in-service training opportunities, but felt that none of the training was specifically related to transversal competencies. This issue is explored further in the school and system-level support section below.

In several cases, where gaps are felt, teachers are proactively engaging in their own learning activities. In **China (Shanghai)**, for example, interviewed teachers reported that professional learning communities are being established, including teaching and study groups, lesson preparation groups and grade groups, in which teachers can discuss the problems they encounter. Similarly, in **India** teacher learning communities are gaining in popularity, facilitated by the use of smart phone technology.

Box 4: India – Teaching transversal competencies and effective teacher training

Jnana Prabodhini Shala school

Jnana Prabodhini Shala (JPS) is a primary school (grades 5 to 10) with 450 students. It is open to gifted children. The medium of instruction is English, though the cultural environment is essentially Marathi (of Maharashtra State). Entry into the school is dependent on passing an entrance exam. Children come from a variety of socio-economic backgrounds; those that do not have the ability to pay the fees can get scholarships.

The underlying philosophy of the school is that gifted children should be given opportunities to gain the abilities needed to solve society's complex problems. The school teaches children self-study, reading, memory, creative thinking and communication skills through a variety of curricular and co-curricular activities. Group tasks and teamwork are the norm in this school, not only for projects but in all activities that they do. This, the school believes, enables students to learn to appreciate other viewpoints and also to take risks and collectively perform to a higher standard. Every class has a mentor teacher (for six years) who knows each child very well. Mentors seek to resolve social conflicts that arise among the children.

Teachers are trained in the school regularly. At the time of joining, the teachers participate in a two–week, intensive training programme. Thereafter, teachers participate in sessions every Tuesday, Wednesday and Friday. The principal is involved in conducting these sessions.

The strong philosophy that the school espouses binds the children together, perhaps for life, and the support given by the alumni is one of the key features of the school. This is not monetary support but support in giving classes or special sessions for students. The principal of the school is also an alumnus. The school employs only 22 teachers, but each week 70 teachers visit the school to conduct sessions.

Source: Prakash and Sharma, 2015

Limited availability of in-service training related to TVCs was not raised as a major concern by the teachers in interviews, but in some cases training availability was viewed as being closely linked to the availability of resources at the school and local education administration levels. In **Viet Nam**, for example, education officers from the Department of Education and Training and school managers remarked that there were limited resources (both in terms of budget and time) to provide teachers with a variety of types of professional development activities. This could explain why one of the most popular in-service training opportunities identified by teachers surveyed in **Viet Nam** is 'exchanging ideas with colleagues and with specialists within and outside the school', which presumably has minimal cost implications.

Box 5: Republic of Korea – Types of professional development for TVCs

The following table presents several types of professional development programmes implemented in the Republic of Korea that are considered by teachers to be effective in developing skills in facilitating the learning of TVCs.

Programme	Content
Curriculum expert	Explaining the content of the national curriculum in detail. Effective implementation of the curriculum in school.
Classroom observation and analysis	Discussions based on actual classroom observations and analyses.
New methods of teaching	Introducing new teaching methods and models designed to facilitate core competencies that can be applied in schools.
Workshop on facilitating core competencies	Hands-on workshop in which teachers assume the role of students in class.
Consultation	Diagnosing problems faced by teachers and suggesting possible solutions.
Teachers' study group	Sharing experiences with each other and offering advice.

Source: Cho et al., 2015

The researchers in seven countries examined the perceived relevance of in-service training to teachers' needs.[14] The majority of the surveyed teachers in four countries (**Australia, India, Thailand** and **Viet Nam**) either 'agree' or 'strongly agree' that in-service training is based on their needs. In **China** (Beijing and Hong Kong SAR), however, many teachers strongly disagreed, and there was moderate disagreement among teachers from **Mongolia** and **Japan**.

In **Australia**, the majority of the interviewed teachers called for more specific training on how to incorporate transversal competencies into their teaching and learning programmes, particularly through more opportunities for

---

14   Australia, China [Beijing & Hong Kong, SAR], India, Japan, Mongolia, Thailand and Viet Nam.

professional conversations with other teachers, to reduce feelings of professional isolation experienced by teachers and to enhance related learning opportunities. Teachers in **Australia** also suggested that peer learning should be coupled with access to specific learning materials, such as examples from other teachers.

In **China** (Beijing), some of the interviewed teachers noted that the in-service training they received was very helpful, but insufficient. They also believed that for the training to be effective, it should be tailored to individual teachers' personalities, characteristics and teaching situations.

In **Japan**, teachers had a positive perception of the school-based training that they were receiving, and considered it necessary for increasing transversal competencies among their students but, like teachers in **Australia**, felt there was a need for enriched teaching materials relating directly to transversal competencies. Similarly, teachers in the **Republic of Korea** suggested that trainers provide teachers with specific models for teaching transversal competencies as part of in-service training, and specific training in how to measure and evaluate students' attainment of transversal competencies. These views reflect those of respondents in Thailand. When asked to select from ten training areas which ones were most necessary in enabling teachers to facilitate the learning of TVCs, the respondents (teachers) identified the top three as: (i) instructional techniques, (ii) use and development of instructional materials and (iii) measurement and evaluation (Sinlarat and Thadphoothon, 2015).

The majority of teachers in four of the countries (**Australia, India, Thailand** and **Viet Nam**) felt that their in-service training was necessary to improve student learning and acquisition of transversal competencies. However, some teachers in **China** (Beijing and Hong Kong SAR) and **Mongolia** disagreed with this statement.

Compulsory in-service training is often part of minimum service standards, which define the minimum level of training that teachers must undertake per academic year to ensure high-quality teaching services. When asked whether in-service training is compulsory and is part of school policy, the majority of teachers responded positively, but a small proportion of teachers in **Australia, India, Japan, Mongolia, Thailand** and **Viet Nam** did not feel this way.

In the **Republic of Korea**, teachers said in-service training was more effective when they participated in training programmes voluntarily rather than obligatorily. Similarly in **Viet Nam**, an education officer noted that teachers were obligated to attend in-service training courses in summer holidays but these courses were too short and too theoretical, thus failing to attract active participation from teachers.

When asked about the cost of in-service training, the majority of teachers responded that they 'agree' or 'strongly agree' with the statement that their in-service training is conducted free of charge, but a small proportion of respondents in **Australia** and **India**, and a larger proportion in **Japan** and **Thailand**, disagreed with this statement. Teachers from all countries felt that in-service training was provided regularly, with the exception of teachers in **Mongolia** who were in strong disagreement with this statement.

When teachers were asked whether in-service training is used as an incentive for promotion and salary increase, the majority of teachers in **Thailand, Viet Nam** and **India** agreed with this statement, while most teachers in **Australia** and **China** (Beijing and Hong Kong SAR) disagreed.

4.3 School-level and systemic support

This section examines the effectiveness of professional development with specific reference to key components of the school as an institution and its broader operating environment. The implications for the teaching and learning of transversal competencies are then discussed.

School plans relating to TVCs

A review of the survey responses indicates the majority of teachers in the participating countries agree that transversal competences are reflected in **school plans**, including plans for professional development in transversal competencies. The highest levels of positive responses among teachers were in **Viet Nam, China** (Shanghai) and **Japan**, with 93 per cent, 91 per cent and 80 per cent respectively. In **Australia** and the **Republic of Korea,** the percentages were lower at 69 per cent and 66 per cent respectively.

In **Japan and China (Beijing and Hong Kong SAR),** school principals who were asked whether transversal competencies were reflected in school plans all responded positively, but in **China (Beijing and Hong Kong SAR)** only 35 per cent of teachers felt this way. The majority of teachers in this case instead indicated that professional development relating to transversal competencies was in fact undertaken only on the initiative of teacher groups or by individual teachers, rather than being guided by school plans.

Budgets for teaching and training in TVCs

On the matter of **budgets** to support the implementation of school plans, interviewed teachers in the **Republic of Korea** expressed the view that education relating to transversal competencies requires a larger budget than traditional teaching, and noted that there was a need for large quantities of teaching materials to support the teaching of TVCs, and it was a significant cost. In their opinion, there is currently insufficient school budget to purchase the necessary teaching and learning materials, and they feel this is a major hindrance to the teaching of transversal competencies. Interviewed teachers suggested that a specific budget allocation for purchasing materials be made, and that schools be given greater leeway to spend allocated budgets in accordance with their specific needs.

The responses to interviews with teachers and school principals in **Japan** indicated that the budget for teacher training is not always specifically allocated at the school level. According to the interviewees, this has led to cases in which teachers have invested their own money to undertake training that would enable them to better facilitate the learning of transversal competencies. The interview responses also indicate a disconnect in some cases between the views of teachers and school principals/local education authorities. The responses to interviews with school principals indicate that they do not consider a lack of financial support for training a critical issue, even if a budget

for training was not specifically allocated to their schools. This view was echoed to some extent by a local administrator who felt that schools were used to managing teacher training with their own resources.

While teachers in **Japan** may be able to afford to cover training costs themselves when there are no available school funds, a lack of school budgets for training has consequences in terms of reducing **access to professional development** among teachers who are not in a position to cover their own training costs. In **Mongolia,** for example, teachers are less willing to participate in training if they have to pay for it themselves, since they are simply unable to afford it. They therefore face a serious obstacle to improving their teaching practice.

School curriculum and assessment frameworks

When asked whether schools have guidelines to include **transversal competencies in the curriculum,** all of the teachers interviewed in **Australia** responded positively, noting that they used the Australian curriculum guidelines and achievement standards in planning their lessons and in guiding their integration of transversal competencies into lesson plans (see Box 6). Teachers in the **Republic of Korea** likewise reported having guidelines and methods in curriculum implementation plans. Conversely, teachers in **Thailand** and **Malaysia** noted an absence of clear guidelines. In the case of **Thailand** this was perceived by teachers to be due to inconsistent and unclear national policies.

Box 6: Australia – TVCs in the curriculum

The Australia case study offers examples of good practice for integrating transversal competencies into lesson plans and assessment. Table 14 shows an example of how a primary school geography teacher can document content descriptors from the Australian Curriculum (AC), the Achievement Standards (AS) and transversal competencies ('general capabilities').

Table 14: Example of TVCs in geography lesson

Topic: People are connected to many places
Key Concepts:
• What is a place?
• How are people connected to their place and other places?
• What factors affect my connections to places?

Geographical inquiry and skills	Geographical knowledge and understanding
Observing, questioning and planning **AS** Pose questions about familiar and unfamiliar places and collect information to answer these questions. **CD** Pose geographical questions about familiar and unfamiliar places.	**CD** The location of the major geographical divisions of the world in relation to Australia. **AS** Recognize that the world can be divided into major geographical divisions.
Collecting, recording, evaluating and representing **AS** Collect information to answer their questions. **CD** Collect and record geographical data and information, for example, by observing, interviewing, or from sources such as photographs, plans, satellite images, storybooks and films. **AS** Represent the location of different places and their features in tables, plans and on labelled maps. **CD** Represent data and the location of places and their features by constructing tables, plans and labelled maps.	**CD** The definition of places as parts of the Earth's surface that have been given meaning by people, and how places can be defined at a variety of scales. **AS** Identify the features that define places. **AS** Recognize that places can be described at different scales.
Interpreting, analysing and concluding **AS** Interpret geographical information to draw conclusions. **CD** Draw conclusions based on the interpretation of geographical information sorted into categories.	**CD** The ways that Aboriginal and Torres Strait Islander Peoples maintain special connections to particular country/place. **AS** Explain why places are important to people.
Communicating **AS** Present findings in a range of texts and use simple geographical terms to describe the direction and location of places. **CD** Present findings in a range of communication forms and describe the direction and location of places, using terms, such as north, south, opposite, near and far.	**CD** The influence of purpose, distance and accessibility on the frequency with which people visit places. **AS** Describe how people in different places are connected to each other. **AS** Identify factors that influence these connections.
Reflecting and responding **AS** Suggest action in response to the findings of their inquiry. **CD** Reflect on their learning and suggest responses to their findings.	

General capabilities (transversal competencies)	Cross-curriculum perspectives	Other learning areas (Achievement Standards)
literacy • numeracy • intercultural understanding • personal and social capabilities • ethical understanding •critical and creative thinking	Aboriginal and Torres Strait Islander Histories and Cultures • Asia and Australia's engagement with Asia • Sustainability	English • Maths • Science • History • The Arts • Languages • Health and PE • Technology
ICT capabilities		

Source: Vonney and Westwell, 2015

On the question of whether **assessment frameworks** are available to teachers at their schools to enable them to measure the learning of transversal competencies, teachers in **Australia** and the **Republic of Korea** responded that although they use lesson plans that incorporate transversal competencies, there is no separate assessment framework to measure transversal competencies. Rather, these skills are measured as part of assessments for traditional subject areas. Some teachers in **China (Shanghai)** expressed frustration regarding the limitations of current assessment frameworks in adequately assessing students' transversal competencies, and over one third of the surveyed teachers' felt that the current assessment mechanisms need improvement so as to better measure students' TVCs. Similar views were expressed by teachers interviewed in other countries.

School leaders

Analysis of the findings of the country case studies indicates that **school leaders are generally supportive of teachers' efforts to integrate transversal competencies** into their classrooms, and are supportive of teachers undertaking professional development training to improve their capacities in this area. Similarly, a majority of teachers in almost all of the participating countries feel that school leaders actively support their professional development training. **Mongolia** was the only country in which many of the surveyed teachers reported very little satisfaction with the level of support from their school principals.

A review of the interview data provides a more nuanced understanding of the kinds of support provided by school principals. In **Australia**, for example, interviewed teachers explained that they received practical support from school principals for integrating transversal competencies, through the provision by principals of comprehensive curriculum documents and through supervision and monitoring by principals of teacher performance plans. Teachers felt that the inclusion of transversal competencies in teacher performance plans, and regular reviews by school leaders, sent a strong message to teachers that the school valued transversal competencies.

In **Malaysia**, majority of the interviewed teachers expressed that they felt supported by school leaders to undertake professional development. School leaders likewise expressed willingness to support the professional growth of teachers. However, the responses to the interviews with school leaders indicated that some leaders lack appreciation for the changing role of teachers with regard to transversal competencies and the additional skills that TVCs demand. Some school principals felt that there is nothing fundamentally new about transversal competencies and they therefore dismissed the notion that teachers face major challenges in integrating transversal competencies into their practice, with one school leader saying that 'when one becomes a teacher, one automatically becomes an educator'.

With regard to the role of school leaders in establishing a school culture that is conducive to the teaching and learning of transversal competencies, interviewed school leaders saw this role as being fundamental. In **Thailand,** a school leader observed that in order to teach transversal competencies effectively it was necessary to create a favourable learning atmosphere. Similarly, in **Japan** a school leader identified as a priority the need to create

an environment that encourages teachers' professional development, and felt this could be achieved through promoting a culture of learning within the school and creating an atmosphere in which teachers feel they can freely express their opinions. Similarly, teachers felt that a crucial role for school leaders is in balancing the school environment such that it is no longer oriented only towards examinations but also provides space for the introduction of new curriculum elements, such as transversal competencies.

Overall, in assessing how well school leaders support teachers to integrate transversal competencies, the survey responses indicate that the majority of teachers in seven countries[15] felt that the application of their professional development activities is monitored by school leaders. There were some teachers in all of the countries who did not feel this way, but the feeling that leaders are not supportive was particularly strong among teachers in Japan and Mongolia.

It is interesting to note that countries in which teachers have expressed high levels of both satisfaction and dissatisfaction with school leaders' support for their efforts to integrate transversal competencies, also have high percentages of teachers who set their own goals.

Table 15 provides a summary of how teachers set their professional development goals in the participating countries. We can conclude from this that the extent to which school leaders set teachers' goals does not appear to be a significant factor in influencing teacher satisfaction with supervision. It may be that there are more complex issues that are more influential in this matter, such as cultural norms and organizational hierarchies (e.g. Thailand) and gender issues, but these are less understood.

Table 15: How teachers set their professional development goals, by country

How teachers set their professional development goals	Country (% of teachers)							
	Australia	China (Beijing, and Hong Kong, SAR)	India	Japan	Rep. of Korea	Mongolia	Thailand	Viet Nam
In collaboration with the school management e.g. school leader or direct supervisor	26	14	50	60	-	11	20	49
In collaboration with expert teachers or head of subject cluster	19	36	39	8	34	43	61	72
Set own goal	48	43	36	30	52	46	13	37
Do not set own goal	0	7	-	2	-	-	3	1
Other	7	-	-	1	-	-	3	-

---

15 Australia, China [Beijing and Hong Kong, SAR], India, Japan, Mongolia, Thailand and Viet Nam.

The study findings indicate that the level of school leaders' knowledge and appreciation of transversal competencies could have a significant impact on the quality of supervision they provide to teachers. Researchers from the **Republic of Korea, Thailand** and **Japan** highlighted this issue and recommended that tailored training be provided to school leaders on transversal competencies. Such training may also help to address other challenges related to teaching transversal competencies, including large class sizes and difficulties in securing approval from some school leaders to release teachers for self-directed professional development opportunities, particularly tertiary study.

Box 7: Japan - Akita Prefecture teacher achievement goals

The Akita Prefecture Public School Teaching Professionals Achievement Goals were established in 2003 with the introduction of the 'Ten years of in-service training based on teaching experience', which defines the standards expected of a teacher. Currently, the competency standards for the first and eleventh years are based on themes such as subject teaching, classroom management and student guidance. Teachers who have completed 'Beginning' and 'Ten years' training are evaluated in at least 21 aspects. The following table is an example of how teachers in Akita set their achievement goals.

Theme	Subject teaching
Sub theme	Designing and Planning
Aspect	Lesson planning
Beginning teachers training	One can make a teaching plan for each course unit based on the annual teaching plan, as well as a lesson plan.
10 years training	In order to realize the education goals of the school, one can make an annual teaching plan that considers aspects of other academic and non-academic subjects, as well as a unit teaching plan and a lesson plan. Moreover, one can provide advice to colleagues regarding the design of the course unit or lesson planning.

The Achievement Goals are used mainly by four agents: 1) local district officials, 2) management staff at the school, 3) head teachers and 4) individual teachers. The local school districts and the management staff use the evaluations to provide appropriate guidance to individual teachers. The head teachers employ them as a reference for designing school-based trainings and to evaluate colleagues. Individual teachers use them to proactively work on their own goals (Akita Board of Education, 2011a).

Source: Yamaguchi et al., 2015

School community

The study findings indicate that the receptiveness of **parents and students** to the integration of transversal competencies into schools is a determining factor of success. In **China** (Shanghai) for example, the researchers noted that teachers felt that student interest and parental support were among the most influential factors in enabling the effective teaching of transversal competencies in schools.

The study found that while a large proportion of teachers in six of the countries[16] felt that students and parents understand the importance of transversal competencies, a notable proportion of teachers neither agree nor disagree with this view. Teacher perceptions about parental views were particularly diverse in **India and Thailand**. The interview responses indicate that teachers were concerned about the lack of understanding among parents and students of the importance of transversal competencies and considered this lack of understanding a significant challenge to teaching TVCs in their classrooms. In India, surveyed teachers stated that lack of parental support is one of the impediments to student's acquisition of transversal competencies. Teachers observed that some parents had an 'old school' approach to education, valuing success in examinations of traditional subjects over success in non-assessed and non-traditional areas of learning. This view was supported by the responses of interviewed students in **India**, who observed that their parents would support the learning of transversal competencies only as long as the students continued to perform well academically. The **India** case study suggested that a lack of support for TVCs among some parents maybe because those parents are not educated, or even literate, so are not aware of the benefits of TVCs.

In **Thailand,** almost half of the teachers who were surveyed were undecided as to whether parents and students understand the importance of transversal competencies. A small proportion (less than 6 per cent) of teachers suggested that parents and students do not understand the importance of TVCs at all.

A lack of parental support was perceived by interviewed teachers in **Malaysia** who face dilemmas when trying to overtly incorporate transversal competencies into their lessons. While the teachers all strongly agreed that transversal competencies are of equal importance to cognitive skills, they felt that parents and other stakeholders placed an emphasis on the latter. Some of the interviewed teachers in **Malaysia** and **Thailand** also observed that parents do not give enough time or support to their children's education in general, and this leads to children not caring about their learning in school.

Another challenge to teaching TVCs that was identified by teachers is the lack of receptivity by students to the topic. A teacher in **Malaysia**, for example, felt that some students are not 'ready to change or accept new ideas'. Similarly, in **China (Beijing and Hong Kong)** teachers felt that some students view TVCs as a 'waste of their studying time'. The teachers felt that this lack of understanding among students of the benefits of transversal competencies coupled with academic pressure can lead students to prioritize learning of traditional assessed subjects. A more contentious issue raised by some teachers is the influence of culture on perceptions of the benefits of transversal competencies. Teachers in **Malaysia**, for example, felt that students' levels of understanding of, and receptiveness to, the learning of transversal competencies depended on the students' cultural backgrounds.

---

16   (Australia, China [Beijing & Hong Kong, SAR] Republic of Korea, Mongolia, Thailand)

Education authorities

The findings of the study indicate that if **local education authorities** do not have a progressive vision of education, then it is more challenging for the schools and teachers under them to implement progressive education practices, such as the teaching of transversal competencies.

Several of the country case studies gave examples of the kinds of supportive visions and policies that guide local education authorities to support teachers' endeavours to integrate TVCs into their practice. In **China (Shanghai)**, for example, the Shanghai Municipal Education Commission's vision for building a progressive education environment is supportive of progressive education as it states that schools are a place for the 'common growth of teachers and students' and seeks to make schools into learning organizations. Similarly, in **Japan** several municipalities recognize the importance of schools as learning organizations. Furthermore, these two cases view school-based teacher training as the most useful form of training because it can 'address local needs'. In addition, they recognize the importance of strong school leadership for the effective professional development of teachers and they understand the importance of training school leaders to provide meaningful advice to teachers.

5. Achievements and challenges

This section presents a summary of the factors identified in the study that are supportive of the integration of TVCs into teaching practice (i.e. 'achievements') and also presents a summary of the challenges that need to be overcome if TVCs are to be learned by students in Asia-Pacific schools. As highlighted earlier in the report, this analysis is based on small sample sizes, and therefore cannot be considered reflective of the experience of all teachers who participated in Phase III research nor representative of all teachers in the Asia-Pacific region. Nevertheless, the achievements and challenges identified are evidenced-based, are consistent with those identified in other international research, and therefore are important to articulate before contemplating policy implications and advocacy opportunities flowing from Phase III research.

5.1 Achievements

Awareness and understanding of the value of TVCs

Transversal competencies are considered by many educators in the Asia-Pacific region as being important for producing 'productive citizens', who are knowledgeable, competent and capable of contributing positively to the well-being of their families, societies and countries.

Many teachers have a comprehensive understanding of what transversal competencies are, and recognize the inherent value of implicitly and/or explicitly teaching transversal competencies to their students. Such understanding is typically underpinned by adherence to the notion of holistic learning, and a willingness to embody transversal competencies in their interactions with students.

Many teachers are aware that the teaching and learning of transversal competencies demands a change in their role as teachers from transmitters of knowledge to facilitators of learning, and they are proactively implementing new teaching methods to support this change.

Skills in facilitating the learning of TVCs

The majority of teachers are moderately confident in their ability to support the learning of transversal competencies, and they identify the provision of specialized **pedagogical support** by schools and local education authorities as an important tool for building their confidence.

Many teachers have an understanding of the main skills required to facilitate the learning of transversal competencies, and feel that they are moderately equipped with those skills, particularly a passion for teaching and communication skills.

Professional development

Pre-service training is providing teachers with useful foundation knowledge and an understanding of transversal competencies, with the practicum training component considered more useful than course work and induction programmes.

The majority of teachers are satisfied with the in-service training they receive and they feel it provides them with some support to develop skills based on their needs.

Teachers consider school-based training as the most accessible and most relevant form of training for the acquisition of the skills required to teach transversal competencies.

Some teachers have pro-actively launched school-based professional learning mechanisms, involving peer to peer learning, including learning communities, open lessons and self-directed learning.

In-service training is readily available, with teachers most commonly receiving in-service training at least once a semester. Furthermore, this training is generally conducted free of charge.

Most school plans incorporate transversal competencies implicitly or explicitly, and include reference to professional development for teachers.

School environment and system level support

Curriculum guidelines exist in some countries to support teachers to integrate transversal competencies into their classes. Lesson plan templates are in use in some countries to enable teachers to integrate the learning of transversal competencies within classes on traditional subjects.

School leaders are generally supportive of teachers' efforts to integrate transversal competencies into their teaching practice, and of teachers undertaking professional development training to improve capacities in this area.

Most school leaders feel that they have a fundamental role to play in establishing a school culture that is conducive to the teaching and learning of transversal competencies, and they highlight their role as supervisors in monitoring and supporting quality improvement in teaching practice.

Substantive efforts are underway by local education authorities in some countries to make improvements in the quality of in-service training. These efforts indicate a shift from increasing the quantity of in-service training to improving its quality.

5.2 Challenges

Awareness and understanding the value of TVCs

Many teachers lack a practical and operational definition of transversal competencies as well as clear guidelines with regard to teaching transversal competencies in the classroom.
Social and cultural factors may influence how well students learn transversal competencies in the classroom.

There is a lack of uniformity in the definition of transversal competencies within and across countries of the region, which can complicate policy dialogue and advocacy activities. Country-level definitions are formed with reference to the social values and political structures particular to each country. For example, a country that has a political system that emphasizes order and social obedience, with less emphasis on individual independent and critical thought, may adopt a definition of transversal competencies that does not emphasize critical thinking, assertiveness and reflective thinking; while a country that has a social and political system in which independent critical thought and/or social disobedience are norms, may include these skills as core components of its definition of transversal competencies.

School leaders appear to be more aware than teachers of how globalization is shaping school policies and curricula at the school level, including regarding how globalization is influencing daily lessons. Divergent views between school leaders and teachers in regard to school planning hints at hierarchies that create barriers to effective communication.

Some parents and students lack an understanding and appreciation of the benefits of transversal competencies. Teachers feel that most parents and students value success in examinations for traditional academic subjects over non-assessed and non-traditional areas of learning, such as transversal competencies.

Skills in facilitating the learning of TVCs

Some teachers have very little skills in the areas of critical thinking, flexibility in teaching practices and effective/ethical use of ICT **to support the learning of transversal competencies.**

Professional development

There is room for improvement in pre-service training programmes, particularly course work and induction programmes, and especially in terms of ensuring that transversal competencies are explicitly addressed in these programmes.

A substantial number of teachers are dissatisfied with the in-service training that they receive with regard to transversal competencies. There are few training programmes that specifically promote an understanding among teachers of transversal competencies, particularly in the context of globalization and regional integration, and enable teachers to develop practical skills for teaching TVCs. Teachers require more examples of good practice, including teaching methods and lesson plans for teaching transversal competencies.

Efforts are needed to both ensure the quality of teaching services, through the implementation of minimum service standards, particularly in reference to the minimum requirements for professional development, and to **optimize the effectiveness of in-service training.** Teachers feel that training that is compulsory often does not yield optimal learning results.

Access to training is a challenge for some teachers as training is not always conducted free of charge, and many schools do not have a specific budget allocation to cover professional development costs.

Not all countries have established quality standards for professional development related to the facilitation of transversal competencies. This may be difficult, as the type of training required may depend on the way that transversal competencies are integrated. For example, in some countries 'integration' means that transversal competencies exist as a distinct element within the school curriculum and are taught as separate subjects; while in other countries transversal competencies are taught as part of academic subjects. These different approaches to integration may be influenced by a country's definition of transversal competencies, which may be more broadly linked to specific social and political structures.

School environment and system level support

Some education systems are not actively seeking a balance between examination-oriented learning and 'holistic' learning. Accordingly, teachers continue to face pressure to prioritize preparation for examinations in traditional subjects over fostering learning in transversal competencies.

Some school leaders provide supervision that is poor quality and of limited relevance to teachers in their efforts to integrate transversal competencies into their practice. In some cases, teachers' feel 'over supervised' and feel they are constantly critiqued in ways that are not constructive. In other cases, school leaders do not provide sufficient supervision, including in the setting of teacher professional development goals and in supervision of teaching practice.

School leaders in some cases give low priority to supporting self-directed professional development opportunities for teachers, particularly tertiary study, and therefore restrict teachers' access to such learning opportunities; for example, by refusing to allow teachers the time to study and refusing to authorize financial support.

Teachers are struggling to manage competing priorities in school, as they are finding it difficult to strike a balance between the demands of teaching traditional academic subjects, which form the basis of student academic assessment, and the need to ensure students also learn transversal competencies, which some say takes more time than teaching traditional subjects. At the same time, teachers also face other demands on their time connected with administration and management activities.

Some teachers have low confidence in their abilities to teach transversal competencies, and some are unmotivated to facilitate the learning of transversal competencies. This low confidence and lack of motivation appear to be influenced by an over-emphasis in the school culture on good examination results in traditional academic subjects, and by teachers being overwhelmed by work demands.

Teachers have insufficient teaching materials to support the teaching and learning of transversal competencies. This is viewed by teachers as a major hindrance to the integration of transversal competencies into education.

Some countries lack curriculum guidelines for the integration of transversal competencies, which is identified by teachers as a significant challenge for the teaching of transversal competencies in classrooms.

There is no separate assessment framework with which to measure transversal competencies, so these skills are not directly evaluated as part of established assessments of traditional subjects.

6. Conclusions

The Phase III study found that many teachers in the Asia-Pacific region feel they have considerable understanding and knowledge of the holistic education that transversal competencies represent, and are committed to pursuing it. On the whole, teachers feel they understand why it is important to pursue this type of education in the context of an increasingly globalized and interconnected world.

While teachers express confidence in several skills that are critical for the integration of transversal competencies into their classrooms, such as communication skills, a passion for teaching and knowledge of traditional subject matter, the study results indicate a need to focus more efforts on developing teachers' competencies in areas such as critical thinking and flexibility in teaching practices.

The Phase III study has increased understanding of the aspects of the existing professional development programmes that are helpful in supporting teachers to develop the essential skills to integrate transversal competencies into their practice, and also the areas where improvements are needed.

For pre-service training, the study found that practicum teaching is the component most valued by teachers in building their capacity to teach transversal competencies, while teachers consider course work and induction programmes less useful in this regard. For in-service training, the study found that the majority of teachers feel satisfied with the training they receive but many have called for improvements in the relevance and effectiveness of in-service training as regards TVCs, including through (i) the provision of specific training programmes that provide practical guidance on methods teachers can use to integrate transversal competencies into teaching practice, and through (ii) increasing the availability of teaching and learning materials that specifically target transversal competencies.

The Phase III study has also helped deepen understanding of why and how school- and system-level support is vital in enabling teachers to improve their skills in teaching transversal competencies. The study found that transversal competencies are prioritized in a strategic planning sense at the school level in the majority of cases, but that some schools still lack such a priority. Furthermore, the study found that more realistic and specific budget allocations are needed by schools to support the teaching and learning of TVCs. In addition, the study found gaps between policy and practice in terms of access by teachers to detailed curriculum guidelines and assessment frameworks to assist in the teaching and evaluation of transversal competencies.

The gaps related to evaluation merit further examination and will be studied in detail in a study conducted under the Network on Education Quality Monitoring in the Asia-Pacific (NEQMAP), UNESCO Bangkok's platform for information sharing and collaborative efforts to improve the quality of learning.

The study will examine the current policies, practices and challenges relating to assessing transversal competencies in the Asia-Pacific region.

Another theme examined in the Phase III study was the extent to which school leaders are creating enabling environments for teachers to teach transversal competencies. The study found that school leaders are generally supportive of efforts by teachers to integrate transversal competencies into their classrooms, and of teachers undertaking professional development training. However, the findings indicate that improvements in school leadership are needed, particularly in regard to enhancing school leaders' knowledge and understanding of transversal competencies and improving the quality of supervision.

Finally, perhaps the most salient finding of the Phase III study is that although teachers are confident and motivated and are making efforts to teach transversal competencies, they are hindered by the priority placed by schools on success in examinations for traditional subjects. If teachers' efforts are to have an impact, they need support to adjust learning environments to become inclusive of transversal competencies. To achieve this, school and system level stakeholders must help to create 'space' for transversal competencies within school curricula. The study findings suggest that teachers feel that the lack of support for TVC learning among parents and students is an important issue that needs to be resolved urgently in order for teachers to facilitate the learning of TVCs by their students. Leaders must therefore take a more proactive role in advocating the benefits of transversal competencies education with school community stakeholders, including parents and students. They should also help to provide unhindered access to the critical professional development support that teachers need to do the best job that they can in helping to create 'productive citizens' for the twenty-first century.

7. Policy recommendations

The findings of the Phase III study indicate that teachers are committed to integrating the teaching of transversal competencies into their practice, but that they face various challenges in doing so. The following four policy recommendations have been developed for policy-makers and school leaders and seek to improve the context for teaching transversal competencies.

1. **Expand opportunities for the professional development of teachers in transversal competencies.**
   - Work with teacher education institutions to improve the quality of pre-service teacher training by ensuring that transversal competencies are explicitly taught and assessed as part of induction, course work and practicum programmes.
   - Create specific in-service training programmes that provide support through (i) fostering teachers' understanding of what transversal competencies are and how their roles need to change to effectively implement them; (ii) supporting teachers to develop the skills that are essential for transversal competencies teaching and (iii) providing teachers with examples of good practice in how to teach transversal competencies.
   - Create specific in-service training programmes that provide intermediate and advanced support to teachers to integrate transversal competencies in their planning, pedagogy and assessment, including through fostering peer learning, such as by establishing professional learning communities.

2. **Enhance school environments to better enable teachers to implement transversal learning in their practice.**
   - Provide professional development training to school leaders to build their understanding of what transversal competencies are and their knowledge of optimal ways transversal competencies education should be implemented, and to enable them to fulfil their role in creating school environments that are conducive to teaching and learning transversal competencies.
   - Make school leaders accountable through performance appraisal processes for establishing school environments conducive to the teaching and learning of transversal competencies and for the quality of supervision that they provide to teachers.
   - Encourage and facilitate teachers' access to peer and school-based learning opportunities. For example, set up school-based and/or online community or support groups for teachers in which they can discuss subject specific issues, and provide school-based, practical in-service training in TVCs for teachers.
   - Ensure schools have a balance between teaching students the required knowledge for success in examinations of curriculum content and teaching transversal competencies, so that learners are equipped with the skills necessary to flourish in real-world contexts.

3. **Provide system-level support to enhance support for transversal competencies, and to guide their integration in schools.**

   - Ensure that teachers have access to professional development in TVCs.
   - Ensure that sufficient budget is allocated, either by schools or education authorities, to cover training costs.
   - Conduct a curriculum review to identify how the teaching of transversal competencies can be incorporated into the curriculum, and to more realistically balance teacher workloads.
   - Create curriculum guidelines to assist teachers to integrate transversal competencies into their practice.
   - Develop assessment frameworks, with advice from teachers and teacher education institutions, to ensure that learning of TVCs is assessed.
   - Ensure teachers are provided with adequate and sufficient teaching and learning materials to effectively incorporate TVCs into their practice.
   - Establish partnerships between institutions and teachers to better understand barriers to teaching and learning transversal competencies, particularly on issues that are not well understood, such as gender and cultural dynamics.
   - Establish partnerships between institutions and schools to apply research findings through piloting good practice models of transversal competencies education.

4. **Build understanding of the value of transversal competencies within the school community**

   - Conduct advocacy for transversal competencies with national and local education officials, school administrators, school leaders, teachers and policy-makers.
   - Ensure the entire school community, including students and parents, understands the importance of transversal competencies and how they are integrated into the curriculum. Equip school leaders with resources so that they can effectively advocate, among parents and students, the importance of transversal competencies.
   - Assist school leaders to hold open discussions with parents about shifting the school priorities from being focused on success in examinations towards being inclusive of transversal competencies.

8. Recommendations for future research

The quantitative and qualitative data collected in the Phase III study identified issues that teachers face in integrating transversal competencies, including issues that are not well understood, particularly in relation to teachers' professional development. It is therefore recommended that future research focuses on developing a better understanding of: (i) effective teacher training (both pre- and in-service) for facilitating the learning of transversal competencies; (ii) how transversal competencies can be incorporated and assessed within exam-oriented curricula; (iii) how social or cultural dynamics affect the ability of teachers to integrate transversal competencies into their classrooms; and (iv) how transversal competencies affect the development of learners at different stages (i.e. primary vs secondary).

The first two suggestions are a continuation of research that has already been undertaken (for example by ERI-Net and others) and continued research of this kind would examine the significant questions and issues that still remain. The third suggested area of future research should be focused on cultural and social dynamics, including gender. In particular, it would be interesting to examine how culture, particularly organizational culture, affects the viewpoints of the various stakeholders, such as teachers and school leaders, and how these viewpoints affect a teacher's ability to integrate transversal competencies into their practice. In undertaking this research it will be important to investigate the roles of teachers, principals, district officials and central authorities and to determine the nature of communication between these groups and the types of supervision and leadership offered.

As regards the fourth suggested area of research, given that learning varies by age and grade level, this research should examine which transversal competencies are appropriate for each development stage (age group) and how TVCs can be incorporated at each stage. For example, researchers could seek to determine which teaching methods are most effective in ensuring students acquire TVCs at the primary level and which methods are most effective at the secondary level.

Bibliography

Ananiadou, K. and Claro, M. 2009. 21st century skills and competencies for new millennium learners in OECD countries. EU Working Paper No. 41. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=EDU/WKP (2009)20&doclanguage=en (Accessed 16 January 2016.)

Barnett, H. 2003. Technology Professional Development: Successful Strategies for Teacher Change. ERIC Digest ED477616. http://files.eric.ed.gov/fulltext/ED477616.pdf (Accessed 16 January 2016.)

Bernhardt, P. E. 2015. 21st Century Learning: Professional Development in Practice. The Qualitative Report, Vol. 20, No. 1, pp. 1-19. http://www.nova.edu/ssss/QR/QR20/1/bernhardt1.pdf (Accessed 16 January 2016.)

Cho, J., Park, S., Park, T. and Kim, M-J. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: Republic of Korea (Phase III). Prepared by the Korean Institute for Curriculum and Evaluation, for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

Choo, S., Sawch, D. and Villanueva, A. 2012. Educating for twenty-first century global capacities: Summary of report. New York, Studies in Educational Innovations. http://globalsei.org/WP/wp-content/uploads/2012/07/Educating-for-Twenty-First-Century-Global-Capacities.pdf (Accessed 16 January 2016.)

Cradler, J., Freeman, M., Cradler, R. and McNabb, M. 2002. Research implications for preparing teachers to use technology. Learning and Leading with Technology, Vol. 30, No. 1, pp. 50-54. http://www-tc.pbskids.org/island/brochure/powerpoint/30_1.pdf (Accessed 16 January 2016.)

Dede, C. J. 1992. Education in the twenty-first century. The Annals of the American Academy of Political and Social Science. Vol. 522, pp. 104-15. http://www.jstor.org/stable/1047423 (Accessed 16 January 2016.)

Eisner, E. W. 1995. Preparing teachers for schools of the 21st century. Peabody Journal of Education, Vol. 70, No. 3, pp. 99-111. http://www.jstor.org/stable/1492899 (Accessed 16 January 2016.)

ERI-Net. 2015. Research framework for integrating non-cognitive/transversal competencies in education policy and practice (Phase III), Bangkok, UNESCO. Unpublished.

Fullan, M. 2009. Introduction to the challenge of change: Purposeful action at work. M. Fullan (ed.), The challenge of change: Start school improvement now! 2nd edn, Thousand Oaks, CA., Corwin. pp. 3-8. https://us.corwin.com/sites/default/files/upm-binaries/28661_Fullan_Ch1.pdf (Accessed 17 October 2016.)

Hipkins, R., Boyd, S. and Joyce, C. 2005. Documenting learning of the key competencies: What are the issues? A discussion paper. Wellington, New Zealand Council for Educational Research.

Hrabowski, F. A., Lee, D. M. and Martello, J. S. 1999. Educating teachers for the 21st century: Lessons learned. The Journal of Negro Education, Vol. 68, No. 3, pp. 293-305. http://www.jstor.org/stable/2668102 (Accessed 16 January 2016.)

Kay, K. 2009. Middle schools preparing young people for 21st century life and work. Middle School Journal, Vol. 40, No. 5, pp. 41-45. http://www.jstor.org/stable/23044494 (Accessed 16 January 2016.)

Kennedy, K.J., Zhiyong, Z., King, H. F., Hui, L., Wai Man, C., Gartz, W. L. 2015. ERI-Net Phase III report: Combined case studies of Beijing and Hong Kong SAR, China. Prepared for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

Kopcha, T. J. 2010. A systems-based approach to technology integration using mentoring and communities of practice. Education Technology, Research and Development, Vol 58, No. 2, pp.175-90. http://www.jstor.org/stable/40603155 (Accessed 16 January 2016.)

Kong, S. C., Chan, T. W., Griffin, P., Hoppe, U., Huang, R., Kinshuk, Looi, C. K., Milrad, M., Norris, C., Nussbaum, M., Sharples, M., So, W. M. W., Soloway, E. and Yu, S. 2014. E-learning in school education in the coming 10 years for developing 21st century skills: Critical research issues and policy implications. Journal of Educational Technology and Society, Vol. 17, No. 1, pp. 70-78. http://www.jstor.org/stable/jeductechsoci.17.1.70 (Accessed 16 January 2016.)

Kreider, H. and Bouffard, S. 2006. A conversation with Thomas R. Guskey. The Evaluation Exchange, Vol. XI, No. 4, pp. 12-14. http://www.hfrp.org/var/hfrp/storage/original/application/1ef9f773781dd0b1e2d237 f6c8af939e.pdf (Accessed 16 January 2016.)

Kudo, F. 2013. Kyoin Yosei no Kaizen ni Kansuru chosa Kekka: kyouin yoseitou no arikata ni kansuru chousa kenkyu (kyouin yousei kaizen han) houkokusho [Report on the improvement of teacher trainings: Research study on the way of teacher trainings] Tokyo, National Institute for Education Policy Research. (In Japanese.)

Lieberman, A. and Pointer Mace, D. H. 2008. Teacher learning: The key to educational reform. Journal of Teacher Education, Vol. 59, No. 3, pp. 226-34. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.465.6897&rep= rep1&type=pdf (Accessed 16 January 2016.)

Lieberman, A. and Miller, L. 2011. Learning communities: The starting point for professional learning is in schools and classrooms. Learning Forward, Vol. 32, No. 4, pp. 16-20. http://learningforward.org/docs/august-2011/lieberman324.pdf?sfvrsn=2 (Accessed 16 January 2016.)

Marlow, L. and Inman, D. 2002. What pre-service teacher professional development must become in the 21st century. Journal of Thought, Vol. 37, No. 3, pp. 45-51. http://www.jstor.org/stable/42589711 (Accessed 16 January 2016.)

McLaughlin, M. W. and Talbert, J. E. 2010. Professional learning communities: Building blocks for school culture and student learning. Annenberg Institute for School Reform. VUE, Spring 2010, pp. 35-45.
http://web.stanford.edu/group/suse-crc/cgi-bin/drupal/sites/default/files/Professional_Learning_Communities.pdf (Accessed 16 January 2016.)

Nguyen Thi, H. Y., Luong Viet, T., Mac Thi, V. H., Vuong Hong, H., Thieu Trung, H., Nguyen Le, T. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: Viet Nam (Phase III). Prepared by the Viet Nam Institute of Educational Sciences, for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

Nordin, I. N. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: Malaysia (Phase III). Prepared by the Malaysia Ministry of Education, for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished. OECD. 2010. TALIS 2008 Technical Report: Teaching and Learning International Survey. Paris, OECD Publishing.
http://www.oecd.org/edu/school/44978960.pdf (Accessed 28 January 2016.)

Pacific Policy Research Center, 2010. 21st century skills for students and teachers. Honolulu, Kamehameha Schools, Research and Evaluation Division.
http://www.ksbe.edu/_assets/spi/pdfs/21_century_skills_full.pdf (Accessed 16 January 2016.)

Partnership for 21st Century Skills. 2009. Assessment: A 21st Century Skills Implementation Guide. Tucson, AZ., Partnership for 21st Century Skills.
http://www.p21.org/storage/documents/p21-stateimp_assessment.pdf (Accessed 17 October 2016.)

Plomp, T. and Voogt, J. 2009. Pedagogical practices and ICT use around the world: Findings from the IEA international comparative study SITES2006. Education and Information Technologies, Vol. 14, pp. 285-92.
http://link.springer.com/article/10.1007%2Fs10639-009-9090-3#page-1 (Accessed 16 January 2016.)

Poon, C. L., Tan, S., Cheah, H. M., Lim, P. Y. and Ng, H. L. 2015. Student and teacher responses to collaborative problem solving and learning through digital networks in Singapore. P. Griffin and E. Care (eds), *Assessment and Teaching of 21st Century Skills*, Dordrecht, Springer. pp. 199-212.
http://link.springer.com/chapter/10.1007%2F978-94-017-9395-7_9#page-1 (Accessed 17 October 2016.)

Prakash, A. and Sharma, D. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: India (Phase III). Prepared by the Learning Links Foundation, for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

Rotherham, A. J. and Willingham D. 2009. 21st century skills: The challenges ahead, Educational Leadership, Vol. 67. No. 1, pp. 16-21.
http://www.ascd.org/publications/educational-leadership/sept09/vol67/num01/21st-Century-Skills@-The-Challenges-Ahead.aspx (Accessed 17 October 2016.)

Saavedra, A. R., and Opfer, V. D. 2012a. Learning 21st-century skills requires 21st century teaching. The Phi Delta Kappan, Vol. 94, No. 2, pp. 8-13.
http://www.jstor.org/stable/41763587 (Accessed 16 January 2016.)

Saavedra, A. R. and Opfer, V. D. 2012b. Teaching and Learning 21st Century Skills: Lessons from Learning Sciences. New York, Asia Society and RAND Corporation.
http://asiasociety.org/files/rand-1012report.pdf (Accessed 10 October 2013.)

Schleicher, A. (ed). 2012. Preparing teachers and developing school leaders for the 21st century: Lessons from around the world. Paris, OECD Publishing.
http://www.oecd.org/site/eduistp2012/49850576.pdf (Accessed 16 January 2016.)

Silva, E. 2009. Measuring skills for 21st-century learning. The Phi Delta Kappan, Vol. 90, No. 9, pp. 630-34.
http://www.jstor.org/stable/27652741 (Accessed 16 January 2016.)

Sinlarat, P. and Thadphoothon, J. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: Thailand (Phase III). Prepared for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

So, K. and Kang, J. 2014. Curriculum reform in Korea: Issues and challenges for twenty-first century learning. The Asia-Pacific Education Researcher, Vol. 23, No. 4, pp. 795-803.

Sukhbaatar, J. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: Mongolia (Phase III). Prepared by the Institute of Finance and Economics, for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

Trier, U. P. 2003. 12 countries contributing to DeSeCo: A summary report. D. S. Rychen, L. H. Salganik and M. E. McLaughlin, Contributions to the Second DeSeCo Symposium, Neuchatel, Swiss Federal Statistical Office, pp. 27-60.
http://www.oecd.org/edu/skills-beyond-school/41529505.pdf (Accessed 17 October 2016.)

Trilling, B. and Fadel, C. 2009. 21st century skills: Learning for life in our times. San Francisco, CA., Jossey-Bass.
https://yasamboyuogrenme.wikispaces.com/file/view/21st+CENTURY+SKILLS.pdf (Accessed 16 January 2016.)

UNESCO. 2014. The Asia and Pacific Regional Bureau's Education Support Strategy 2014-2021: Learning for Peace and Sustainable Development. Paris and Bangkok, UNESCO.
http://unesdoc.unesco.org/images/0023/002310/231083e.pdf (Accessed 13 January 2015.)

UNESCO. 2015. Transversal competencies in education policy and practice: Regional synthesis report. Paris and Bangkok, UNESCO. http://unesdoc.
http://unesdoc.unesco.org/images/0023/002319/231907E.pdf (Accessed 17 October 2016.)

UNESCO. 2016. School and teaching practices for twenty-first century challenges: Lessons from the Asia-Pacific region. Paris and Bangkok, UNESCO.
http://unesdoc.unesco.org/images/0024/002440/244022E.pdf (Accessed 17 October 2016.)

Voogt, J. and Roblin, N. P. 2012. A comparative analysis of international frameworks for 21st century competencies: Implications for national curriculum policies. Journal of Curriculum Studies, Vol. 44, No. 3, pp. 299-321.
http://www.tandfonline.com/doi/abs/10.1080/00220272.2012.668938 (Accessed 16 January 2016.)

Vonney, K. M. and Westwell, M.S. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: Australia (III). Prepared for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

Voogt, J. and Pelgrum, H. 2005. ICT and curriculum change. Human Technology, Vol. 1, No. 2, pp. 157-75.
http://www.humantechnology.jyu.fi/articles/volume1/2005/voogt-pelgrum.pdf (Accessed 16 January 2016.)

Xu, J. and Yan, J. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: Shanghai, China (Phase III). Prepared by the Shanghai Normal University and Shanghai Academy of Educational Sciences, for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

Yamaguchi, S.Y., Yamamoto, Y., Ueno, A. and Enomoto, N. 2015. Integrating transversal competencies in education policy and practice: How are teachers prepared/supported to facilitate acquisition of transversal competencies? Country Case Study: Japan (Phase III). Prepared by the Tokyo Institute of Technology, for the Inclusive Quality Education Unit of UNESCO Bangkok. Unpublished.

Annex A: Summaries of the case studies

Australia

Martin Westwell and Kristin M. Vonney of Flinders University

Overview

The focus of the Phase III study was to assess teachers' preparedness in facilitating the learning by students of transversal competencies and to assess their views of the globalization of education. The research was based on the analysis of results from the UNESCO ERI-Net questionnaire and interviews. A total of 37 teachers and one principal participated in the online survey, and ten teachers and two senior leaders were interviewed. The interviews were conducted over a seven-week period in six Department of Education and Child Development Schools (two high schools and four primary schools). These six schools were of different sizes and were located in rural and urban sites, catering to a wide range of pupils, including students from non-English speaking backgrounds, from low socio-economic areas and with learning disabilities. The ten classroom teachers who participated in the interview were the same teachers who took part in the Phase II study classroom observations.

Australia's response to globalization was to incorporate it into three distinct areas: relevant parts of the curriculum, the General Capabilities and the Cross Curriculum Priorities. The economic changes brought about by globalization were a driving force for the development of the current national curriculum in Australia and the impact of those changes is implicit throughout. Education policy and practice in Australia are guided by the Melbourne Declaration on Educational Goals for Young Australians and given structure through the nationally mandated Australian Curriculum, which explicitly addresses globalization and global connectivity through the General Capabilities and the Cross Curriculum Priority of 'Asia and Australia's engagement with Asia'.

Highlights

- The responses to the questionnaire and interviews indicated that all of the participating teachers and leaders see value in explicitly and/or implicitly teaching transversal competencies, which are known in Australia as the General Capabilities.[17] The respondents indicated that these competencies are necessary in order for students to be able to function successfully in all facets of their lives in the twenty-first century.

- The top three skills that teachers believed were essential for teaching transversal competencies were: 1) communication skills, 2) reflective thinking skills and 3) listening, critical thinking, respect for diversity and maintaining leadership by encouraging students (ranked equal third).

- The top three skills and competencies that teachers believed they are very much equipped with in facilitating TVCs were: 1) listening and passion/love for teaching (ranked equal first); 2) communication skills, fairness and inspiring respect and trust among students (ranked equal second); and 3) flexibility.

---

17 In the Australian context, transversal competencies are referred to as the General Capabilities, which are a key dimension of the Australian curriculum. As of 2016, the curriculum covered Foundation to Year 10. The General Capabilities are also part of the senior secondary curricula as defined by the South Australian Certificate of Education (SACE).

- The interviewed teachers felt that some General Capabilities are easier to incorporate into lessons than others (e.g. ethical understanding and creative thinking are easily developed in a Year 10 unit on the global system and how humans impact it). Capabilities such as critical and creative thinking require learning opportunities to be intentionally designed for students, however. Almost all of the participants in the interviews and online survey feel either 'highly' or 'to some extent' confident in facilitating TVC learning.

- Just over half of the online respondents felt that their practicum teaching experience was relevant in facilitating their learning of the general capabilities, while around a quarter indicated that their course work at university and induction programme had been relevant this way. All of the teachers had some sort of training on how to facilitate the learning of TVCs and incorporate the General Capabilities into their teaching, and this had been crucial to their confidence. However, the type of training varied greatly from person to person and from school to school.

- The teachers were highly cognizant of capabilities that they may have lacked in terms of their own knowledge or skills and they were actively seeking help from colleagues or through training and development. It was noted that the majority of the teachers continuously develop themselves through self-directed study and by exchanging ideas and consulting with colleagues within or outside school, which presumably does not involve much cost.

- Teachers varied in their levels of satisfaction with the current support provided to them. Some felt that there was no support from either their school or the Department of Education and Child Development, while other teachers could not speak highly enough of the level and type of assistance they were receiving. Half of the participants in the online survey indicated that they felt supported 'to some extent', while just under a fifth of respondents felt that they were receiving a lot of support.

- Many of the surveyed teachers felt that their professional development plan was clearly mentioned in the school document and was organized by the school. A few of them said it was not clearly indicated in their school plan, but they organized professional development activities on their own or with a group of teachers. Around half of them responded that they either 'strongly agree' or 'agree' that the professional development activities that they had attended were conducted free of charge.

- The majority of the surveyed teachers responded with either 'strongly agree' or 'agree' when presented with a statement saying that the professional development activities they had participated in were supported by their school heads. However, only half of them felt that application in the classroom was monitored by their superiors. The teachers were also engaged in self-development activities and many of them reported that they had sought advice from the management and senior leaders.

- A large majority (80 per cent) of the participants in the online survey responded that there were no specific policies, strategies, plans or projects corresponding to globalization in their schools. However, the teachers were cognizant that students must have set of skills to navigate in a globalized and interconnected world. The key skills identified were creativity, entrepreneurship, resourcefulness, reasoned decision-making, teamwork, collaboration, the ability to critically evaluate information and media content and the ethical use of ICT.

Conclusions and recommendations

In general, the surveyed teachers and leaders felt that they had the necessary skills and abilities to be able to provide rich and engaging learning opportunities that would enhance the development of the General Capabilities (i.e. transversal competencies) in their students. Teachers who felt that they did not have sufficient skills considered that their schools provided training and development in these areas.

According to the teachers, the levels of support they receive from schools to help facilitate the learning of the General Capabilities varies a great deal. While some schools provide curriculum documents that detail how the General Capabilities can be incorporated into teaching and learning, other schools provide no such support and neither does the Department of Education and Child Development. While information is available on the Australian curriculum website and on that of the Department of Education and Child Development about the General Capabilities, some teachers feel there is a gap in information regarding how to use the available resources, and teachers suggest that training and development are necessary in this area. Some interviewees felt that a useful means of support and training would be observing or learning from other teachers who are successfully teaching the General Capabilities to their students.

China: Beijing and Hong Kong SAR

Kerry Kennedy, Hui Fai King, Chan Wai Man, Wai Ling Gartz of Hong Kong Institute of Education, Zhou Shiyong of Beijing Normal University, and Li Hui of University of Guangzhou

Overview

Five secondary schools in Beijing and four secondary schools in Hong Kong SAR participated in this Phase III study. Seven principals (two in Hong Kong and five in Beijing) and 14 teachers (in Hong Kong) with experience and involvement in teaching of 'generic skills'[18] completed the UNESCO ERI-Net questionnaire, which had been translated into Chinese. Focus group discussions were conducted with 17 teachers from Hong Kong and 25 teachers from Beijing using an interview protocol (based on the questionnaire) to guide the discussions.

Highlights

- The most important skills for teachers in facilitating the learning of the generic skills were listed by the questionnaire respondents as: (1) communication skills, (2) reflective thinking, (3) organizational skills, (4) facilitating skills and (5) motivating self and students. The study participants believed that they were well equipped with (1) communication skills, (2) organizational skills and (3) motivating self and students, but were relatively weak in terms of (1) decision-making skills, (2) creativity and (3) the ethical use of ICT. Teachers felt relatively well prepared and were confident about teaching transversal competencies. Principals appeared to see the task as somewhat more demanding than teachers.

- Overall, the surveyed principals felt that students understood the importance of generic skills, but they believed that parents might not share the same view. On the issue of whether the acquisition of TVCs among students was time consuming, the two groups (Hong Kong principals and Beijing principals) disagreed. While principals in Hong Kong SAR felt that it was time consuming, Beijing principals did not feel this way. The principals from both Beijing and Hong Kong SAR believed that their efforts to facilitate the learning of generic skills were well understood and supported by parents, but the teachers' achievements were only moderately reflected in their appraisals. In general, principals felt moderate satisfaction regarding the level of support for facilitating the learning of generic skills.

- The responses to the survey indicated that opportunities for professional development are available to teachers, although they may not be school-based. The respondents reported that professional development tended to be off-campus and lecture-based. The principals from both Beijing and Hong Kong SAR felt that professional development is clearly mentioned in the school documents and is organized by schools, but many teachers gave a different response, saying that professional development is not clearly mentioned in school documents and is organized by teachers or conducted by individual teachers. The teachers

---

18   This term is used synonymously with transversal skills.

tended to set their goal themselves or in collaboration/consultation with master teachers, heads of training sections, head teachers, subject supervisors, peers, etc.

- Lectures, lesson study and peer coaching were listed as the three most-available professional development opportunities, and teachers believed that these were moderately relevant to facilitating the learning of generic skills. Teachers in Hong Kong SAR reported that they usually participate in professional development activities once or twice per semester; much less frequently than the Beijing teachers. The most common training topics for teachers were teaching methods, subject knowledge and content, classroom and behaviour management, and the use and application of ICT in teaching.

- They were conscious of their inadequacies in terms of training in TVCs. Teachers and principals moderately agreed that the professional development activities in their schools were helpful in improving their skills, but had slightly different views on which forms of professional development were most relevant for developing skills relating to teaching TVCs. Principals cited peer coaching as the most relevant type of training, while teachers cited lesson study and exchanging ideas with colleagues/specialists within or outside schools. The least-endorsed form of professional development in terms of relevance to TVC teaching was formal study (e.g. enrolling in university).

- In Hong Kong SAR, the respondents felt there were no special policies, strategies, plans or projects relating to globalization in schools, except as part of the Liberal Studies curriculum, but 60 per cent of the participating principals in Beijing reported that such policies, etc. existed. These principals cited seminars and face-to-face consultation conducted by experts on educational reform, an international exchange programme and the enhancement of teachers' knowledge on globalization.

- None of the teachers thought transversal competencies were unimportant.

- The respondents felt that communication skills were the most important generic skills that students should gain in terms of enabling them to successfully navigate an increasingly interconnected society. The next most important competencies were listed as creativity and the ability to obtain and analyze information through ICT.

- Although the principals felt that the role of teachers had changed to a large extent since the introduction of generic skills learning, the teachers felt that the extent of change in the learning environment was only moderate; and they had little awareness, overall, of education policies that promote generic skill learning and developing global citizens.

- Teachers in Hong Kong SAR felt that globalization had only a moderate impact on school activities and felt that the importance of preparing students for globalized world was only moderately emphasized.

- Teachers view both generic skills and globalization through the lenses of their respective subjects.

- In general, Beijing principals showed a higher degree of consciousness than Beijing teachers regarding developing globally-competent students in their daily education practice. The topic of globalization does not seem to be well-understood by teachers and they do not feel that they know how it should be taught.

- The subject, Liberal Studies, was perceived as the most appropriate subject in which to explicitly teach globalization and generic skills, while the module on Social Issues, which is part of the English subject, was seen as an opportunity for teaching global citizenship.

Conclusions and recommendations

Despite the emphasis placed by schools on traditional subjects and the focus on performance in examinations, as well as the need to cover the curriculum, the study found that many teachers in Hong Kong SAR and Beijing still find ways to incorporate teaching about transversal competencies into their practice.

The study identified three challenges: 1) the topic of globalization does not seem to be well understood by teachers; 2) insufficient time and manpower hinder the teaching and learning of generic skills and 3) students' attitudes towards generic skills are not always positive in an examination-dominated environment.

China: Shanghai

Jinjie Xu of Shanghai Normal University and Jiaping Yan of Shanghai Academy of Educational Sciences

Overview

This study was conducted through classroom observations, interviews and the UNESCO ERI-Net online questionnaire. A total of 1,563 respondents, including 73 school principals and 1,490 teachers, participated in the online survey. Participants were from 73 of the 93 'new quality schools' (primary and middle schools).[19]

Highlights

- According to the Shanghai Medium and Long Term Education Reform and Development Plan (2010-2020), major tasks include implementing reforms to recognize the complex and profound changes in the world, especially globalization, the information age and the internationalization of education. Shanghai's overall strategy for compulsory education in the coming decade emphasizes a commitment to lifelong development for every student, with a focus on equality in access to education and equity in education (Shanghai Municipal Education Commission, 2010).

- The study found that over two-thirds of teachers have a positive attitude towards the effectiveness of pre-service teacher training in enabling them to develop students' transversal competencies. However, a sizeable proportion thinks otherwise.

- Over 90 per cent of teacher respondents felt that professional development is clearly mentioned in the school documents and is organized by the schools. A similar percentage (87 per cent) of teachers and principals believed that improving subject teaching knowledge and competencies was a major reason for them to engage in ongoing professional development activities, and over 80 per cent felt that students' overall development was a major reason. Over half of them felt that recognition from parents and community was the major reason and over 40 per cent believed students' academic progress and acknowledgement from school were a major reason. Factors such as conformity and career promotion were considered less important.

- More than two-thirds of teachers reported being engaged in a wide variety of school-based professional development activities[20] and about 40 per cent reported attending national

---

19 The "new quality school" project by the Shanghai Municipal Education Commission was launched in 2011. New quality schools are Shanghai's ordinary public schools (rather than high performing or model schools) and represents major part of compulsory education. School leaders are open to changes and eager for transforming their education concepts and teaching practices to make schools more attractive and competitive for students. with great expectations for promoting happy and all-around development of every child.

20 In Shanghai, teachers' in-service trainings are implemented and evaluated through credit system. School-based training occupies about 50% of total learning credit for each teacher. Well-structured and organized school-based training are included as core tasks in school's 3-year development plan and in yearly school working plan.

regulated training. A little over one third of teachers were engaged in self-directed professional development.

- In general, the respondents felt that school-based training, mentorship and peer learning were the most effective ways to improve teaching abilities. Other methods considered by teachers to be effective were subject group training, lesson study, exchanging ideas with colleagues and mentorship.

- Primary school teachers perceived professional development opportunities to improve their teaching abilities as being more effective than teachers from middle schools did.

- The majority of teachers (80 per cent) reported attending training on the topics of pedagogy and subject content knowledge. Over half of the teachers also reported attending training on teaching of TVCs and the use of ICT in teaching.

- Teachers felt that skills such as 'a passion for teaching' and 'affection for students' were more important skills for teachers to have in fostering transversal competencies than pedagogy or knowledge of subject content. The least important skills in this regard were considered to be teaching techniques and effective use of ICT in teaching.

- When asked about the most important skills for students in an increasingly connected world, the respondents listed the following five skills: 1) creativity, 2) teamwork, 3) communication, 4) reflective thinking and 5) resourcefulness. On the other hand, they felt that 1) empathy, 2) ethical use of ICT, 3) compassion, 4) ability to critically evaluate information and 5) media content were the least essential skills for establishing external relationships and adapting to a changing world. Teachers were not highly concerned with how students deal with value issues derived from conflicts related to multiculturalism.

- Teachers were less aware than school principals of the impact of globalization on school policy, school activities and the roles of teachers.

Conclusions and recommendations

- The teaching of transversal competencies needs to be clearly stated in teachers' professional development plans at all levels.

- The reasons why a third of teachers feel that pre-service training does not enable them to adequately teach TVCs need to be further explored, and the required changes need to be made to pre-service training courses.

- Teachers' engagement in teaching of transversal competencies needs to be strengthened.

- The reasons for differences in opinion between primary and middle school teachers regarding the effectiveness of professional development for teaching TVCs need to be further studied.

- The visions, policies and strategies that promote transforming schools in the context of globalization need to be more embedded and better implemented at the classroom level.

- Examples of good practice in teaching transversal competencies and models for transversal competencies assessment need to be collected and shared among teachers.

India

Anjlee Prakash and Deepika Sharma of Learning Links Foundation

Overview

The study was framed by four key overarching issues that surround teachers' preparedness for teaching transversal competencies in their classrooms, namely the preparedness of teachers to facilitate the learning of such competencies, the support available to teachers to enhance their skills in facilitating the TVCs, the influence of globalization on TVCs and the policy requirements to ensure teachers are well prepared and supported to fulfil their role in teaching TVCs.

The UNESCO ERI-Net questionnaire was distributed to respondents both electronically and in hard copy form. The study analyzed responses from teachers about their preparedness to integrate transversal competencies into the classroom, the systemic support they receive and their professional development. Eleven teachers from private schools and 17 teachers from government schools participated in the study, in addition to teacher educators who answered a host of questions on their preparedness to handle twenty-first century competencies. In addition, focus group discussions were held with 30 students from two private schools.

Highlights

- The study found that, in general, the teachers feel that the most important competency for them to have is communication skills, followed by assessment, cultivating creativity and motivation. Assessment is considered important by all teachers, as the system currently depends on how skills are assessed. In addition, teachers think that they need to have a passion for teaching, enthusiasm and interest in teaching.

- The study found that teachers also see communication is one of the most important skills for students to gain, particularly for those students in schools situated in small, remote towns (as is the case of many state government schools).

- Overall, 64 per cent of teachers felt extremely confident in their capacity to assess TVCs.

- While 96 per cent of teachers felt that communication skills was the most necessary competency, only 75 per cent feel they are equipped to teach this competency. Similarly, while 79 per cent of teachers felt that ICT skills were important to have, only 21 per cent felt confident in using ICT for teaching and learning.

- Not many teachers think that pre-service training course work and induction programmes are relevant to a significant extent in facilitating the learning of TVCs. This may be because the majority of teachers surveyed, who had between 21 and 30 years of experience, did not take part in training under the current pre-service curriculum, which includes training relating to TVCs. Therefore, the teachers that participated in the study only learned how to facilitate the learning of TVCs on the job, through in-service training and/or via peer support in schools.

- Almost a third (32 per cent) of the surveyed teachers felt that professional development is clearly positioned in school documents and is organized by schools. Around half of them felt that regardless of whether professional development is in school documents or not, their professional development is usually self-initiated.

- The respondents felt that the most popular topics of training subject knowledge and teaching methods (including methods for teaching TVCs), followed by classroom and behaviour management techniques.

- While only 18 per cent of private school teachers felt that training on the use and application of ICT in teaching was an important topic for in-service training, over half (53 per cent) of government school teachers perceived it as one of the most important topics. This difference in responses could reflect the differences in ICT skills between the two sets of teachers. The responses in the focus group discussions with students indicate that students of private schools use ICT to a great extent for their learning and that their teachers are at ease with ICT use. Given that private school teachers are already familiar with how to use ICT in education, this is not a topic they consider as being important in ongoing in-service professional development.

- When asked which transversal competencies they feel they are equipped with, the students listed listening and communication skills, creativity, flexibility, maintaining leadership in the classroom, respect for diversity and effectively using ICT for learning. Other competencies mentioned by the students included critical thinking, reflective thinking, empathy, collaboration, tolerance, assertiveness, continuous and organized self-learning.

- The students felt that competencies such as collaboration, critical thinking and synthesizing information were learned effectively through project work. More specifically, they mentioned the Model United Nations (MUN) as an activity in schools that provided them with an opportunity to develop skills relating to respecting divergent views, collaborating with students from different schools, influencing others, thinking about conflicting views, synthesizing information and building consensus on a common solution agreeable to all.

- Students felt that their classrooms provided them with opportunities for discussions and group study, which also helped them in developing TVCs, including skills in resolving conflicts within groups and in building consensus. Interestingly, the students did not understand 'collaboration' as only meaning working in groups, but also as visiting different types of communities and groups (e.g. the Model United Nations; rural communities) and learning about their needs, working with them and identifying solutions.

- Teachers felt that although their superiors in schools understand and appreciate the importance of facilitating the learning of TVCs, students and, to some extent, parents, do not understand the importance of it.

Conclusions and recommendations

The teachers' responses corroborate the findings of the studies in Phases I and II, which indicated that the reforms have taken root and teachers are well aware of the importance of twenty-first century competencies.

Teachers are only moderately happy with the support provided to them by the system in facilitating the teaching of TVCs – they would like more support. It appears that some competencies have not been well developed in teachers, leading them to lack confidence in teaching them. The study found that not all teachers feel confident in facilitating TVCs in their classrooms as they are not equipped with the skills to do so.

The tendency for teachers to rely on their own efforts to initiate professional development is of concern as it places responsibility systematically on individuals. Some schools rely on individual or group in-house teachers' efforts to engage in professional development and do not have a specific plan for it. It is recommended that schools establish a system of continuous support for teachers, including establishing support groups. For example, Karnataka has developed a model for supporting teachers by establishing subject support groups using technology, so teachers can be continuously in touch with their peers. The support network for in-service training needs to include both public and private schools and the support should become

seamless and continuous, available when the teachers need it. ICT can be leveraged in many ways to facilitate this.

Although students who participated in this research study said they knew of the importance and relevance of TVCs, this needs to be clearly communicated to both parents and students.

Japan

Shinobu Yume Yamaguchi, , Yukiko Yamamoto, Akina Ueno and Naoko Asano Enomoto of Tokyo Institute of Technology

Overview

The Japan country study examined teachers' perceptions of professional development with regard to TVCs and education in a globalizing society, and used the following four data collection methods: 1) a desk study of policy documents and other related documents provided by the local education board and the sampled schools; 2) observations of school-based training in one primary school and one junior high school in Akita Prefecture; 3) structured interviews with 15 education leaders and 4) a questionnaire, administered to 23 school principals and vice principals and 164 teachers in 12 primary schools and seven junior high schools in two areas of Akita Prefecture.

Highlights

- The study found that the surveyed schools have provided comprehensive professional development opportunities to all teachers, including substitute teachers. Although most of the teacher training activities were not designed to improve teachers' skills specifically with regard to fostering students' transversal competencies, the training activities often include discussions and activities related to enhancing TVCs, since such competencies are often included in the education goals.

- In the survey, school leaders and teachers identified interpersonal skills and qualities such as openness and passion for teaching as the most important in enabling them to facilitate the learning of transversal competencies. Most of these competencies are consistent with those that teachers identified in the previous study as being important for students to learn.

- The study results indicate that teachers do not always feel they have the skills that are important in enabling them to develop students' transversal competencies.

- School principals and teachers feel that professional development is clearly indicated in their school policies.

- Teachers feel that school-based training, lesson study, and national and local government training are the most commonly-available professional development opportunities, and teachers consider these commonly-available opportunities to be effective. School-based training is seen as the core of teachers' professional development in Akita. It is appreciated by teachers because it is practical, needs-based and allows for prompt feedback to improve lessons. Specifically, lesson study contributes towards creating collaborative learning communities in schools because it is consultative and conducted collaboratively with peers.

- Teachers value informal communication among teachers on a daily basis as an important means of professional development, and teachers are engaged in different kinds of self-directed learning opportunities to enhance their knowledge and teaching skills, in addition to mandatory training programmes. The most popular activities are participating in after-school study groups and seeking advice from senior teachers and colleagues.

- The responses indicate that the main motivation for self-directed learning by teachers is to improve their knowledge and skills, while peer-pressure and status promotion are considered least motivating.

- School principals and teachers have a largely positive view of the professional development opportunities provided at the prefectural, municipal and school levels. Thus, the efforts of national, prefectural and local governments are well recognized by these educators.

- The survey findings suggest that teachers are highly motivated and make continuous efforts to provide good quality lessons for their students. This supports the findings of the previous study.

- Teachers felt that professional development in Akita could be improved by national and local authorities in the following areas: Teachers want more practical and experience-based training, including role play and model lessons; support to arrange their schedules to attend more teacher training activities; a budget for research, teaching materials and transportation or participation fees for self-directed professional development activities; and specific teaching material relating to TVCs.

- The study found that the impact of globalization was not evident at the school level. The questionnaire responses indicated that few teachers recognize the influence of globalization on their school policies, but recognize it with regard to national policy (the 2008 Courses of Study). At the national and local levels, however, the importance of preparing students for an increasingly globalized world were well recognized and included in policies such as the 2008 Courses of Study.

- Teachers felt that communication skills was the most important ability for students, followed by critical and innovative thinking.

- Overall, respondents in Akita felt that communication skills was a priority competency that is essential for students to gain in order to succeed in an increasingly globalized society. Schools in Akita promote it through two activities: 1) enhancing students' ability to communicate in English and 2) improving students' ability to express themselves in their own words.

- The study found that Akita Prefecture emphasizes the ability to understand others from different backgrounds as being important in their strategy for globalization. While they rank living as member of international community highly, this is not included in their education strategy on globalization. Rather, in response to globalization they are promoting career education and hometown education, which aim to provide students with foundational knowledge and experience to establish sound relationships with people of different ages and from different areas.

Conclusions and recommendations

In Japan, teachers have professional development opportunities at the national, prefectural and municipal levels, depending on their career levels and positions. In addition to mandatory training programmes, teachers can participate in various types of training activities for the ongoing development of their skills and knowledge, including emerging education issues and school-specific topics. While implemented within the framework of the national policy, the Akita Board of Education has designed the system to reflect their local characteristics and education objectives.

There is a gap between the competencies teachers perceive as important to be equipped with and those they believe they have acquired. This indicates a need for improvement in the teacher training programme.

Teachers would like support from governments in developing the skills to teach transversal competencies to students. Specifically, support should be provided in arranging teachers' schedules so that teachers can participate in more training; and authorities should provide: practical and experience-based training, including role play and model lessons; more substitute teachers to handle classes when teachers are away on training; and teaching materials relating specifically to TVCs.

Republic of Korea

Jimin Cho, Sunwha Park, Taejoon Park, Mee-Jee Kim of Korea Institute for Curriculum and Evaluation (KICE)

Overview

The purpose of the Phase III study was to investigate how teachers in the Republic of Korea are prepared and supported to facilitate the acquisition of transversal competencies, and to put forward relevant policy suggestions in relation to this. The study involved a survey and in-depth interviews with teachers, which were carried out at six secondary and three middle schools from the 80 'free semester and curriculum research' schools, and at two middle schools and one high school from the eight 'core competencies' research schools. A total of 209 questionnaires were distributed to the schools. When selecting those schools, attention was given to their locations to ensure an even distribution across the country and make the sample more representative.

As a way of enhancing so-called 'happy education' and encouraging elementary and secondary school students' dreams and talents, the Korean government has launched the 'free semester' programme, which will be fully implemented in all middle schools from 2016. Under this programme, schools can apply the national curriculum flexibly for one semester, conduct discussion-based and practice-oriented classroom activities, offer students a variety of hands-on experiences and not administer any paper-and-pencil tests to students during that time.

Highlights

- The newly-revised national curriculum indicates that the focus of elementary and secondary education is gradually shifting from traditional cognitive skills to non-cognitive skills (transversal competencies), emphasizing the holistic development of students as responsible global citizens who are well-equipped for future challenges.

- While the majority of teachers surveyed were confident they can facilitate educational activities to promote transversal competencies, a significant number of them felt they were not well prepared for teaching transversal skills.

- While many schools do not have programmes specifically designed to promote 'globalization' per se, schools cover the core competencies deemed important for preparing their students for an interconnected world. For example, teachers regularly cover topics that encourage open thinking, a sense of community, communication, empathy and cooperative problem-solving, in classes and through hands-on activities.

- Interviews with the teachers indicated that they perceive professional development programmes such as training sessions, workshops and consultation as being effective, especially when participation in such programmes is voluntary rather than obligatory.

- All the surveyed teachers reported that detailed plans and methods for teaching students transversal skills are included in the teaching and evaluation section of their schools' curriculum implementation plans and research plans. The evaluation section includes methods and standards for measuring the extent to which students have learned transversal skills.

Conclusions and recommendations

The results of this study provide a valuable snapshot of the current state of preparedness of teachers in Korea to teach transversal competencies, as well as of teachers' perceptions regarding the most important transversal competencies and teachers' needs in terms of professional development to facilitate the learning of TVCs. The study also identified some examples of how transversal skills are being incorporated into learning in practice. Recommendations on how to further promote the transmission and acquisition of TVCs are listed below:

- The ministry of education and local departments of education need to establish concrete policies aimed at supporting the learning of transversal skills in schools, and provide the schools under their supervision with clear goals relating to such policies and specific action plans.

- Incorporate, into pre-service training programmes, methods of teaching TVCs and of evaluating them, and integrate the topic of transversal competencies into the teacher selection test.

- Expand teachers' in-service professional development to ensure teachers gain the required skills to teach transversal competencies. A variety of trainings should be offered regularly.

- Education research institutes should provide teachers with a variety of models for teaching and evaluating transversal skills and offer consultations to assist teachers if they have any problems or concerns in the use of these methods.

- Alter school environments so that teachers are able to integrate transversal competencies effectively, by reducing teachers' administrative burdens, providing sufficient budgets for materials and resources, and managing class sizes.

- Improve perceptions of the importance of transversal competencies among all stakeholders, including among students, parents, the community and educators.

Malaysia

Intan Noraiha Nordin of Ministry of Education Malaysia

Overview

The Phase III study examined teachers' perceptions regarding facilitating the learning of transversal competencies, assessed the training and support opportunities available, examined good practices and identified challenges, while also examining the impact of globalization on education, especially in the area of transversal competencies.

Data was collected from eight schools, including two primary and six secondary schools, and from 20 face-to-face interviews involving eight school heads and 12 teachers, as well as from 11 classroom observations. A questionnaire was distributed to 101 teachers in the eight selected schools. The collection and analysis of data was conducted over six weeks, between 1 September and 8 October 2015. The subjects observed in classrooms included Mathematics, Science, English, Arabic and Living Skills. A semi-structured observation guide was prepared by the researchers, focusing on aspects such as digital technology, methods, assessment and the classroom environment. The researchers also carried out analyses of school-related and teacher-training documents.

Highlights

- The study participants unanimously agreed that transversal competencies are unquestionably fundamental in developing individuals with meritorious qualities, mainly in terms of building character. While teachers were not necessarily familiar with the term 'transversal competencies', it was not a new or foreign concept. Teachers have been exposed to and trained in this topic before, with most teachers noting that transversal competencies are either embedded into other subjects as sub-topics or are complementary to a subject course during teacher training years.

- The majority of respondents regarded communication skills as being among the most important transversal competencies to be acquired by students, particularly in the era of globalization, as many perceive communication skills as a key factor to success in life, work and relationships, in addition to ICT-related skills.

- The respondents felt that it was difficult for teachers to strike a balance between delivery of subject content and imparting transversal competencies during lessons.

- Classroom observations found that teachers were facilitating the learning of transversal competencies, albeit most often unintentionally and without teachers' being aware of it. Thus, the infusion of transversal competencies often occurred spontaneously.

- Teachers were aware that their roles are varied and changing. Teachers recognized that as facilitators of learning, they need to provide students with the right knowledge and skills to master the subject and learn for themselves. Sometimes teachers acted like tutors, and worked with varied students either individually or in groups. They also played the role of evaluators, who continuously assess students' skills and abilities, and use the results to further guide the students and improve instruction. Additionally, teachers also played the role of consultant.

- Transversal competencies are embedded in the pre-service teacher training curriculum across all 27 Institute of Teacher Education (IPG) campuses in Malaysia, explicitly or implicitly.

- A course for teacher trainees titled, Character Building for Teachers, enables them to develop their transversal competencies via a hands-on approach. Their learning is derived from experience and they are expected to prepare a statement of their reflections after every activity.

- Teacher trainees get exposure to facilitation of transversal competencies through teaching practicum and internship programmes, which are under 'School Based Experience'.

- All school documents reviewed indicate that transversal competencies are recognized as critical elements in shaping and developing individuals with admirable qualities. Instances of key transversal competencies found in the documents include: leadership, patriotism, responsibility, higher order thinking skills, collaboration, teamwork, self-evaluation, knowledgeable, caring, loving, efficient, trustworthy, fair and just, respectful, open-minded and polite.

- While teachers and school heads felt that transversal competencies were important, a great emphasis was still placed on the success of students in examinations of traditional subjects.

Conclusions and recommendations

To balance examination-oriented subjects with transversal learning, the report offers the following recommendations:

- Acquisition of transversal competencies should be formally recorded and taken into account when assessing students' overall performance. The attainment of these competencies should be part of compulsory requirements for a student to be accepted into higher learning institutions.

- The curriculum for pre-service teacher training needs to be reviewed and updated, as transversal competencies have thus far not been given due importance.
- The teacher training curriculum should include a distinct course dedicated to transversal competencies, whereby teacher trainees are provided with the required skills to integrate transversal competencies into the teaching and learning process in a more structured manner.
- In-service teacher professional development programmes should explicitly address transversal competencies.

Mongolia

Javzan Sukhbaatar of Institute of Finance and Economics

Overview

In accordance with the research framework, the study analyzed teachers' preparedness to facilitate the learning of transversal competencies, assessed the current teacher training situation with regard to transversal competencies and examined what support teachers were given at the school level regarding incorporating transversal competencies into teaching and learning. The study collected questionnaire data from 60 teachers in Songinokhairkhan District of Ulaanbaatar. The surveyed teachers were from public schools, mainly primary schools. The study also included a review of major education policy documents and recent government programmes, with the aim of identifying whether any policies, strategies, plans and projects were addressing issues related to globalization at the school level.

Highlights

- The new curriculum for primary education in Mongolia has been radically changed, with transversal competencies included, and it now emphasizes developing each student holistically. The inclusion of 'activities to learn life skills' in the curriculum provides an opportunity for facilitating the learning transversal competencies learning through engaging students in a variety of activities that can help to develop their unique abilities and talents.
- Teachers are confident that they are prepared to teach transversal competencies and feel they possess the necessary skills, especially in terms of communication and listening skills, knowledge of subject matter and student development, passion/love for teaching, collaboration and empathy. However, teachers are not certain if their efforts to facilitate the learning of transversal competencies are understood and supported by management.
- Teachers gave high priority to critical and innovative thinking skills such as creativity, application, resourcefulness and reflective thinking, as being important for students to have in an interconnected society. Teachers listed communication, teamwork and compassion skills as highly important interpersonal skills for students to possess. A high percentage of teachers identified ethical use of ICT as being a very important competency for students.
- With the recent implementation of the national programmes: the 'Upright Mongolian Child' and the 'Primary Education Core Programme', the Ministry of Education, Culture and Science has begun a remarkable reform initiative towards student-centred education, which includes learning of transversal competencies.
- With the pilot implementation of the "core programme", striking changes have been observed in the role of teachers. The responses indicate teachers are now more facilitators of learning than transmitters of knowledge.

- With the development of a core programme, teachers are able to use essential guidelines for facilitating the learning of transversal competencies.
- While most teachers feel that school policies somehow reflect the issue of globalization, a review of major policies, regulations and guidelines for general education school revealed that there are no specific provisions regarding the impact of globalization or regionalization on education.

Conclusions and recommendations

The study's outcomes indicate a need for certain changes so as to enhance teachers' preparedness for facilitating the learning of transversal competencies. The recommendations, addressed to educators in local and central education authorities, are as follows:

- The Mongolian State University of Education and the Institute of Education should develop and offer short-term training programmes specifically designed to assist teachers and school principals to integrate transversal competencies into educational activities.
- Include in the school performance evaluation regulations some indicators related to the integration of transversal competencies into education practice.
- Organize trainings, workshops and conferences on the integration of transversal competencies. These should be held for training managers and teachers on a regular basis.
- Schools should encourage teachers to make efforts to integrate transversal competencies into classroom and external activities. Teachers' initiatives, efforts and performance in this area should be assessed and rewarded.
- Performance appraisal systems for both teachers and students need to be revised to include means of assessing transversal competencies.
- A more thorough study should be conducted to examine the impact of globalization on education and the way it influences education practice.

Thailand

Paitoon Sinlarat, Janpha Thadphoothon of Dhurakij Pundit University

Overview

This study investigated the extent to which Thai in-service teachers have been prepared to integrate transversal competencies into their teaching practice. It also examined teachers' perceptions of the extent of their own traversal competencies. Data were collected from three sources: questionnaires (issued to teachers), interviews with school directors and document analysis. The data were collected between July and October 2015 and were analyzed using basic descriptive statistics and content analysis.

Highlights

- The responses suggest that Thai teachers are ready to engage in facilitating the learning of transversal competencies, and the existing Thai education system is capable of handling such a challenge.
- Policy statements support the cultivation of transversal competencies in Thai students.
- Most teachers felt they were aware of the importance of transversal competencies in developing desirable characteristics in students and the capacity of students to meet the challenges of the twenty-first century, including globalization and regionalization.
- Thai teachers perceived themselves to be moderately equipped with transversal competencies, and also to be moderately effective in facilitation skills.

- When asked if they were prepared to teach transversal competencies, most teachers were confident that they had the required skills and abilities.
- Most teachers felt that transversal competencies were integrated into teacher training and the education system. They felt that courses and the induction process covered the transversal competencies to a moderate level.
- With regard to professional development opportunities, most teachers had access to them once or twice per semester, which in the teachers' perspective was a moderate level.
- Most teachers set their professional development goals with their supervisors or expert teachers.
- A high number of teachers expressed uncertainty concerning awareness among students and parents with regard to the cultivation of transversal competencies. Teachers felt that students and parents may have difficulty in understanding the importance of these competencies, since the development of these skills takes time.

Conclusions and recommendations

The results of the study suggest that there are three elements necessary for the integration of transversal competencies in the Thai context: appropriate, clear and consistent government policies; participation from society and efforts by teachers.

The study offers the following recommendations:
- Seek ways to make teachers aware of the significance of TVCs, e.g. through policy statements, seminars and conferences.
- Publish and distribute handbooks on how to implement TVCs, including methods, activities and assessment techniques.
- Recognize the success of the teachers, administrators and schools in teaching TVCs, and use them as good examples for other schools.
- Reward, with prizes and other incentives, teachers and administrators who have successfully integrated TVCs into their schools. For example, give them opportunities to further their education abroad.
- If feasible, embed the practice of TVCs as part of the formal academic promotion system.
- Set up networks of schools and teachers who are facilitating the learning of TVCs.

Viet Nam

Nguyen Thi Hoang Yen, Luong Viet Thai, Mac Thi Viet Ha, Vuong Hong Hanh, Thieu Trung Hieu, Nguyen Le Thach of Viet Nam of Educational Sciences

Overview

This study examined the extent to which teachers are prepared and supported to facilitate the acquisition of transversal competencies. It also investigated the impact of globalization and regional integration on education reforms. The research was carried out between July and October 2015 and included desk research and analysis of policy documents related to transversal competencies; individual interviews with teachers, principals and government officials; focus group discussions with educators; and a questionnaire completed by 101 teachers from two primary schools in Hanoi.

Highlights

- The post-2015 school curriculum is being transformed from being content-based to competency-based. These changes require the re-training of teachers, so as to give teachers the skills to foster students' holistic development and encourage students' creativity. As part of this shift, competencies related to critical and innovative thinking and global citizenship have been increasingly integrated into classrooms, and are expected to be emphasized more in the coming years. Life skills have been increasingly included in the curriculum; such skills help students deal with practical situations in their daily lives.

- The analysis indicates that education managers and teachers are aware of the importance of transversal competencies, but teachers do not encourage students to engage in critical and reflective thinking, rather they expect students to accept teachers' ideas and not question or criticize.

- The teachers feel that they have been prepared and supported to some extent to facilitate the learning of transversal competencies. However, teachers also face many challenges to integrating TVCs into classrooms, including large class sizes, lack of time and lack of examples of how to teach TVCs.

- The term 'global citizenship' is unfamiliar to education managers and teachers, though many of its components have been included in teacher training programmes and the school curriculum. For example, the competencies related to awareness, tolerance, openness, and responsibility have been introduced to teachers. Respect for environment has been particularly highlighted in many teacher training courses organized recently.

Conclusions and recommendations

The report makes the following recommendations:

- Integrate transversal competencies into education policies, teacher training programmes, curricula and assessment methods.

- The Ministry of Education and Training and/or the Department of Education and Training should provide hands-on training to: (1) help teachers become more aware of their changing role, and (2) guide teachers to gain the skills to deal with challenging issues and fulfil their duties in the new education context. Priority topics for trainings should be leadership skills, new teaching methods and pedagogical techniques, communication skills, facilitation skills and assessment methods.

- Organize public awareness and advocacy campaigns to increase awareness among parents and community members of the importance of transversal competencies. These activities will improve collaboration between schools and local communities and help teachers gain support from the stakeholders: school managers, provincial education managers, parents and local government.

- Develop teaching materials (i.e. textbooks, guidebooks) to guide teachers on how to facilitate the learning of transversal competencies.

- Provide school managers and teachers with more opportunities (annual workshops, online platforms, etc.) to connect with one another so as to foster peer coaching, knowledge sharing, mentoring, etc.

- School managers should provide teachers with guidelines and consistent support and encouragement to enable teachers to become more effective at facilitating the learning of transversal competencies.

- The Ministry of Education and Training should carry out pilot projects at selected primary schools to build good models for facilitating the learning of transversal competencies.

Annex B: Research framework and questionnaire

Research framework for "Integrating non-cognitive/transversal competencies in education policy and practice (Phase III): How teachers are prepared/supported to facilitate acquisition of transversal competencies

25 May 2015

1. Objective of the research

Overall objective: Contribute to national education reforms for enhancing education policy and practice towards improved learning and holistic development of individuals.

Objectives of Phase III:
- Collect and analyse best practices of developing teaching skills at schools from the participating countries in the region.
- Identify emerging trends, current practices and bottlenecks of teacher support in relation to teaching transversal competencies.
- Facilitate experience-sharing and build a knowledge-base on the integration of transversal competencies into education to support evidence-based policy-making and policy implementation.

2. Regional context and rationale for the research

Many countries in the Asia-Pacific region are increasingly emphasizing the importance of integrating the formation of transversal competencies in schools, in order to help develop students in a more holistic manner. This issue is particularly relevant in the Asia-Pacific region where many education systems have focused on the acquisition of knowledge and academic skills. This bias towards knowledge and academic skills is expressed in the strong focus on high-stakes examinations and the performance in international assessments. It is within in this context that UNESCO Bangkok's ERI-Net launched, in 2012, a regional study on 'Integrating Non-cognitive/Transversal Skills in Education Policy and Practice'.

The first phase of the study focused on capturing a broad picture of how countries in the Asia-Pacific region define transversal competencies and integrate them into their education policies and curriculum frameworks. The reports from the ten participating countries[21] revealed that while there is considerable variation between the countries/economies, the integration of transversal competencies is seen as critical and important in recent education reforms. Such reforms are driven by various factors, including economic factors (e.g. improving the employability of the students), social factors (e.g. reducing academic pressure), and humanitarian factors (e.g. improving character development). In addition, many of the case studies in Phase I revealed a divergence between education policies, which promote integration of transversal competencies, and what is actually taking place in schools. This suggested a need to identify 'what is happening in the classroom', which was the topic of Phase II.
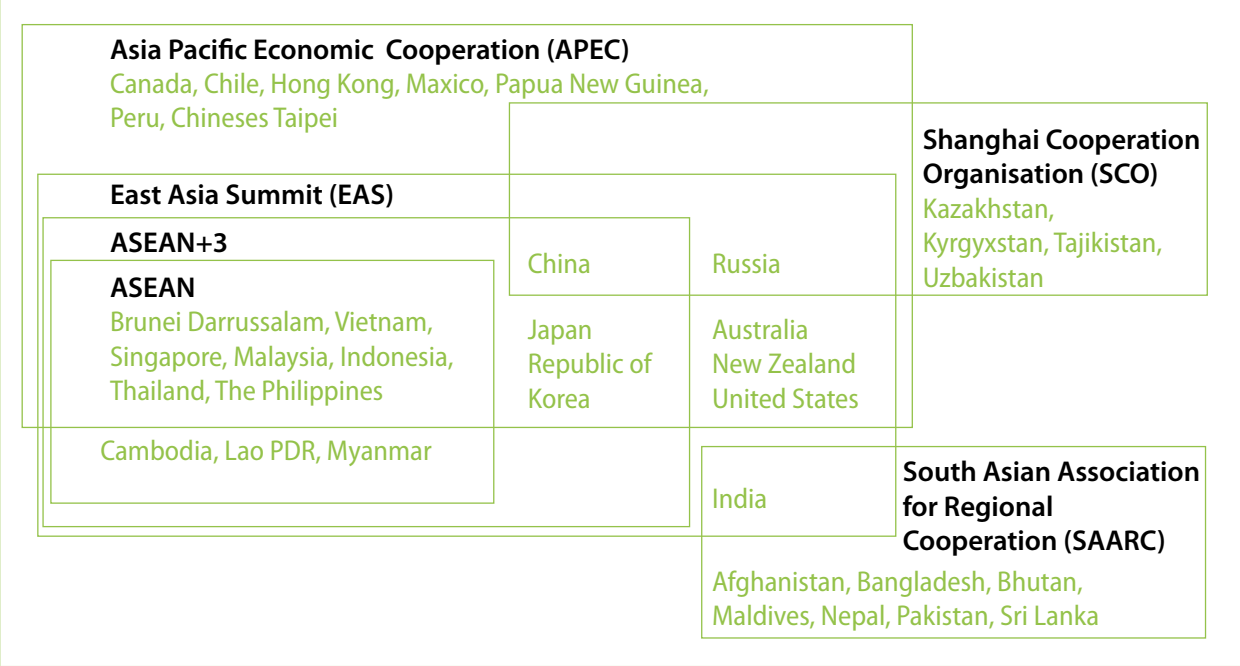
In 2014, the Phase II follow-up study looked at how the competencies were interpreted, implemented and integrated at the school level and identified the challenges faced by many

---

21   Australia, China, Hong Kong SAR (China), India, Japan, Malaysia, Mongolia the Philippines, the Republic of Korea and Thailand.

countries. The findings suggested that the role of teachers has changed, because teaching transversal competencies, such as communication skills and critical thinking, inevitably requires more interactive learning and a student-centred approach. Thus, teachers need to be not only the deliverers of knowledge but also facilitators of learning who encourage all students to actively engage in their learning. In addition, the findings of the Phase II study reiterated the importance of transversal competencies in enabling people to respond to new demands associated with changes of society, including globalization and regional integration. Given the mechanisms for sub-regional and regional socio-political cooperation (Figure 1), the trend of increasing regional integration is expected to continue. This will certainly affect education systems in the region. Countries are increasingly placing transversal competencies as the key for their youth to successfully navigate the increasingly interconnected world.

Figure 1 : Increasing regional cooperation

Asia Pacific Economic Cooperation (APEC)
Canada, Chile, Hong Kong, Maxico, Papua New Guinea, Peru, Chineses Taipei

East Asia Summit (EAS)

ASEAN+3

ASEAN
Brunei Darrussalam, Vietnam, Singapore, Malaysia, Indonesia, Thailand, The Philippines

Cambodia, Lao PDR, Myanmar

China

Japan
Republic of Korea

Russia

Australia
New Zealand
United States

India

Shanghai Cooperation Organisation (SCO)
Kazakhstan, Kyrgyxstan, Tajikistan, Uzbakistan

South Asian Association for Regional Cooperation (SAARC)
Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan, Sri Lanka

The study also revealed that many principals and teachers feel that there is a lack of adequate support for teaching (e.g. teacher training, instruction materials and information sharing among teachers) and that these educators were not very confident with their lessons. These challenges indicated a need for further research, focusing on how teachers could better be prepared and supported. Accordingly, the Phase III study (launched in 2015) will focus on investigating how teachers are prepared and supported to facilitate the acquisition of transversal competencies, while investigating the impact of globalization and regional integration on education reforms, especially the reforms related to transversal competencies. The study is under the overall ERI-Net research theme, 'Education Strategies and Responses to Globalization and Regionalization' agreed upon at the ERI-Net meeting in Hangzhou, China, in November 2014.

3. Expected outputs

1. Case studies from 10 countries/economies of the region, documenting and analysing how teachers are prepared and supported to facilitate the acquisition of transversal competencies.

2. A regional synthesis report documenting emerging trends, achievements and bottlenecks, and listing policy recommendations derived from an analysis of the country cases.

4. Analytical framework

Definition of transversal competencies for 2015 ERI-Net Study

Various terminologies are used by the international research community to refer to the 'non-academic' knowledge, skills, values and attitudes deemed necessary and integral to life in the twenty-first century. The term 'transversal competencies' was adopted (for the ERI-Net study) at the ERI-Net annual meeting in October 2013.[22] The term sought to distinguish the twenty-first century skills from 'vertical skills', which are linked to subjects or disciplines. It is recognized, however, that the terminology will need to be revisited regularly as the concept continues to evolve.

The definition of transversal competencies used in the Phase III study follows that used in Phase II. The transversal competencies encompass six 'domains' (categories) of skills and competencies. As shown in Table 1, there are five core categories and one optional category: 1) Critical and innovative thinking, 2) Interpersonal skills, 3) Intrapersonal skills, 4) Global citizenship, 5) Media and Information literacy, 6) Other: kills and competencies as defined by countries/economies (optional).

Definition of transversal competencies for the 2015 ERI-Net study

Domains	Examples of key skills , competencies, values and attitudes
Critical and innovative thinking	Creativity, entrepreneurship, resourcefulness, application skills, reflective thinking, reasoned decision-making
Interpersonal skills	Communication skills, organizational skills, teamwork, collaboration, sociability, collegiality, empathy, compassion
Intrapersonal skills	Self-discipline, ability to learn independently, flexibility and adaptability, self-awareness, perseverance, self-motivation, compassion, integrity, self-respect
Global citizenship	Awareness, tolerance, openness, responsibility, respect for diversity, ethical understanding, intercultural understanding, ability to resolve conflicts, democratic participation, conflict resolution, respect for the environment, national identity, sense of belonging
Media and information literacy	Ability to obtain and analyse information through ICT, ability to critically evaluate information and media content, ethical use of ICT
Others	Skills and competencies as defined by countries/economies

Understanding that countries can vary significantly when defining and interpreting transversal competencies, it was agreed that each domain/category would remain generic and that countries could clarify their own definitions of transversal competencies under each domain. It was also understood that each domain is not mutually exclusive and countries may place the same skills in different domains. Where applicable, countries are encouraged to add domains and clarify skills, competencies and values defined under such domains (e.g., physical and psychological health).

Because most of the case studies under Phases I and II considered the competencies of critical and innovative thinking, interpersonal skills (e.g. collaboration and communication skills), and media and information literacy as being particularly important, these domains will be given focus in the Phase III study (rather than covering all of the domains).

---

22 During the discussion at the 2013 ERI-Net annual meeting, the members agreed to use the term 'transversal competencies' instead of 'non-cognitive/transversal skills' for Phase II of the ERI-Net research.

Education for globalization and regional integration

Globalization and regional integration have a major effect on education at many levels, but recently the focus has been on how to prepare students for a globalized and regionalized society, including the skills necessary to cope with technological advancements and increasing multiculturalism, i.e. skills in ICT and in collaboration with people from different cultural, linguistic, religious and political backgrounds.

Phase I of the ERI-Net study (2013) recognized this trend. Comparative policy analysis with the ten countries and economies that participated in the Phase I study found that one of the major rationales for introducing transversal competencies into education policies was to respond to globalization and regional integration. Governments felt that comprehensive learning, beyond accumulation of academic knowledge, was the key to long-term development, and began to embrace transversal competencies as the capacities required to enable success in modern society.

A number of international education studies and initiatives have also explored what the required skills are for current and future generations. Ananiadou and Claro (2009), for example, explain that education today should help prepare learners not only for the labour market but also for a rapidly-changing and interconnected knowledge-based society. In their analysis on education programmes and initiatives for comprehensive learning, Saavedra and Opfer (2012b) identified a common focus on communication, ICT literacy and problem solving with people beyond national boundaries. Similarly, UNESCO Bangkok's Education Support Strategy emphasizes that education should play an important role in fostering values and attitudes such as compassion, openness and respect for diversity, which contribute 'to building peaceful, tolerant and inclusive societies' (2014, p. 17). In this regard, transversal competencies with the five domains: 'critical and innovative thinking', 'interpersonal skills', 'intrapersonal skills', 'global citizenship' and 'media and information literacy' can be considered as components of education for globalization and regional integration, as they are the competencies that enable learners to become globally and regionally competent, successful and responsible citizens in this rapidly changing world.

Changing roles of teachers

The Phase II study (launched in 2014) examined teachers' and school leaders' practices and perceptions of transversal competencies, and suggested that the role of teachers had changed, because teaching transversal competencies inevitably requires interactive and student-centred approaches, rather than traditional lecture-based and teacher-centred instruction. In other words, the Phase II study's findings supported the call for teachers to become facilitators of learning rather than transmitters of knowledge. Table 2 summarizes the characteristics of the two types of teachers.

Roles of teachers

Transmitters of knowledge	• Controller of learning
	• Deductive/expository lesson
	• One-way delivery of knowledge
Facilitators of learning	• Collaborator and co-learner
	• Interactive/exploratory lessons
	• Inquiry-based learning

Many researchers have noted the importance of preparing teachers for their new roles, as reflected in the following observation.

Teachers of 21st century skills will need to be experts and have expertise in teaching the same 21st century skills that they are encouraging their students to excel in. Teachers will have to take conscious efforts to communicate and collaborate with each other and with students; become flexible with managing new classroom dynamics; be able to support and enable independent student learning; and be willing to adapt their teaching styles to accommodate new pedagogical approaches to learning (Pacific Policy Research Centre, 2010).

Advocates of twenty-first century skills emphasize the necessity of using student-centred methods (e.g. problem-based learning and project-based learning) if students are to learn such skills. The use of lectures and textbooks by the teachers, methods that typically do not allow practical application and creativity, is cited as one of the reasons why many students are not learning twenty-first century skills (Saavedra and Opfer, 2012b). In short, the acquisition by students of transversal competencies requires a change in the roles of teachers. It also requires teachers to develop transversal competencies themselves and to develop skills in student-centred teaching.

Furthermore, changes are required in terms of what is taught and how it is assessed. Rotherham and Willingham (2009) have noted that for the twenty-first century skills to be taught, better teaching must be implemented in concert with a better curriculum and better assessment. In any case, teachers remain a critical factor in ensuring the acquisition of transversal competencies. The Phase III study intends to look at whether teachers are prepared with the competencies and skills they need to facilitate the learning of TVCs.

5. Research questions

Phase III of the 'Integrating Non-cognitive/Transversal Competencies in Education Policy and Practice' study aims to answer the following research questions, through analysing case studies from participating countries and economies.

Overarching questions:
- To what extent do teachers feel prepared and supported to integrate the learning of transversal competencies into the classroom?
- What are the successful/proven preparation/supports to help teachers enhance their skills to facilitate the learning of transversal competencies?
- What are the challenges in ensuring sufficient opportunities to prepare and support teachers for better learning of transversal competencies?
- To what extent is globalization influencing education reforms, especially those related to transversal competencies learning?
- What are the policy implications to ensure teachers are well prepared and supported to fulfil their role?

Country/economy case study questions

Part A: Teachers' preparedness for facilitating TVC learning

1) Teachers' perceptions
- What are the skills and competencies required for teachers to facilitate learning of TVCs?
- How confident do teachers feel about facilitating the learning of TVCs in the classroom?
- To what extent do teachers feel that their pre-service teacher training was relevant for facilitating the learning of TVCs?
- To what extent are teachers satisfied with the level of current support provided to them for facilitating the learning of TVCs?
- What additional support would the teachers need to further facilitate the learning of TVCs?

2) School-level support for teachers to facilitate the learning of TVCs
- How do school policies define teachers' professional development?
- What kind of support is currently available (e.g. training, materials, organized learning opportunities, parental involvement, and community participation) for teaching to facilitate the learning of TVCs? How are these trainings organized at the school level to support teachers? Please describe the frequency, organizing structures, past training topics, etc. (Applicable to countries that did not answer these questions in the previous study.)
- What are the challenges that teachers face in trying to teach transversal competencies (e.g. lack of support from peers and school leaders, lack of timetable support; absence of freedom to organize events, low recognition of TVC importance, lack of communication of positive aspects to parents, etc.)?
- What are the parents' views on TVCs? Are they supportive or dismissive? (optional)
- Do schools have guidelines to include TVCs in the curriculum? Are these guidelines effective? Is an assessment framework available to measure learning of TVCs?
- Are there teacher-initiated training/learning activities for facilitating the learning of TVCs (e.g. self-directed individual learning, peer review, etc)?
- Please describe any good practices of school-based teacher training in relation to promoting the learning of TVCs.

3) Student perceptions of their learning of TVCs (optional)
- Do students see any changes in their attitudes towards learning (more independent, empowered by multiple sources of information, in-charge of their learning, relevant for the work place etc)?
- Are TVCs a burden for students?
- Is TVC assessment fair and objective?
- Where do students think TVCs are acquired most (e.g. classroom, extracurricular activities, home community)?
- To what extent are students aware of the importance of TVCs?
- To what extent are their parents aware of the importance of TVCs?

Part B: TVC learning in an increasingly interconnected world

1) Teachers' preparedness to teach students to be ready to navigate in a globalized and interconnected world.
- Are there any specific policies, strategies, plans or projects (at the school level) corresponding to globalization in your country? If yes, please describe and analyse the competencies considered important, especially transversal competencies.
- What do teachers think are the key TVCs needed by students to navigate in a globalized and interconnected world?
- How are roles of teachers defined in your country in implementing school-level policies, strategies, plans and projects corresponding to globalization? (Or what are the national standards for teachers in your country?)
- Do school plans and policies reflect the national priorities?

2) For countries going through regional integration or harmonization, how are teachers prepared to teach for regional integration (e.g. education standards, qualifications, labour market demands) (optional)
   - Are there any specific policies, strategies, plans or projects corresponding to regional integration in your country? If yes, please describe and analyse the competencies considered important, especially transversal competencies.
   - What do teachers think are the key TVCs needed by students to be successful members of the integrated region?
   - How are roles of teachers defined in your country in implementing the policies, strategies, plans and projects corresponding to regional integration? (Or what are the national standards for teachers in your country?)
   - Do school plans and policies reflect the national priorities?

6. Selection of schools

As in the Phase II study, the researchers are encouraged to visit schools for data collection (select 5 to 10 general schools, ISCED 2-3 levels). The researchers are encouraged to include the same schools as in Phase II, if possible.

7. Suggested outline of the country case studies

Part A:

   a. Background – summary of the past ERI-Net studies (Phases I & II): 3-5 pages
   b. Analysis of teachers' perceptions and needs to facilitate TVC learning: 10-15 pages
   a. Analysis of teachers' training and support opportunities: 10-15 pages
   a. (optional) Students' and parents' perceptions of TVC learning: 5-10 pages
   a. Analysis of good practices and challenges: 5-10 pages
   a. Policy implications and conclusion: 3 pages

Part B:
   a. Literature review of the impact of globalization and/or regional integration on education in the country: 3-5 pages
   b. Analysis of education policy documents addressing the issues arising from globalization and/or regional integration, especially in the area of TVC learning:
   c. 5-10 pages
   d. c. Conclusion

8. Proposed data collection and analysis

For the first part of the study (on teachers' preparedness for facilitating the learning of TVCs), the data can be collected in various ways. The proposed data collection and analysis methods include: (1) review of policy documents such as school development plans; (2) stakeholder interviews; (3) questionnaires; (4) focus group discussions; and 5) observations of teacher trainings at schools. Stakeholders will include: (1) teachers, (2) students, (3) parents and (4) community members. The ERI-Net Secretariat will develop a generic questionnaire for teachers, and the researchers are encouraged to use the questionnaire to the greatest extent possible.

For Part B of the study, data collection will be mainly through (1) review of policy documents (e.g., the constitution, national development plans, education sector plans, education laws and other policies), curriculum frameworks and related instruments. Supplementary information

can be collected through questionnaires, focus group discussions and individual interviews, as deemed necessary.

9. Expected outcomes and timeline

a. 2015 ERI-Net Expert Meeting for the School Education Group to discuss the research framework (20-21 April 2015)

b. Finalization of the concept note and the research framework (30 May 2015)

c. Drafting country case study (Autumn 2015, TBD)

d. 2015 ERI-Net Annual Meeting to share the research findings (November 2015, TBD)

e. Finalization of the country case study (Winter 2015, TBD)

f. Drafting a regional synthesis report (early 2016)

g. Publication of the regional synthesis report (mid 2016)

SCHOOL QUESTIONNAIRE

How teachers are prepared/supported to facilitate the acquisition of transversal competencies

This questionnaire was developed to facilitate data collection for the Asia-Pacific regional study on 'Integrating Transversal Competencies into Education Policy and Practice' conducted by Education Research Institutions Network (ERI-Net) in 2015.

Since 2013, UNESCO ERI-Net members have been conducting research into on transversal competencies[23] (also known as twenty-first century skills, soft skills, and the affective learning domain). The 2015 ERI-Net regional study, the third and final of three studies, examines how teachers are prepared and supported to facilitate the learning of transversal competencies by students, and also investigates the impact on education of globalization and regional integration. The results will be shared by UNESCO Bangkok and will be expected to contribute towards innovative and evidence-based education policy-making in the region.

- Information collected through this questionnaire will be kept confidential and will be used solely for the purpose of the research.
- Please answer all questions. If you do not know a precise answer, your best estimate will suffice.
- Please use additional paper if you have any additional comments.

The transversal competencies (TVCs) covered in this questionnaire are specified in the following table.

Domains	Examples of key skills , competencies, values and attitudes
Critical and innovative thinking	Creativity, entrepreneurship, resourcefulness, application skills, reflective thinking, reasoned decision-making
Interpersonal skills	Communication skills, organizational skills, teamwork, collaboration, sociability, collegiality, empathy, compassion
Media and information literacy	Ability to obtain and analyse information through ICT, ability to critically evaluate information and media content, ethical use of ICT

---

23 The term 'transversal competencies' is used in the absence of a shared agreement on a more suitable term to describe various 'competencies' (encompassing skills, competencies, values and attitudes). While 'cognitive skills' refer to academic learning measured by conventional assessment methods, 'transversal competencies' refer to other competencies, often not measured but required for the holistic development of students. Typical examples include creativity, communication skills, environmental awareness and the ability to change.

Background information

What is your gender?	Please select one
Male	☐
Female	☐
Prefer not to specify	☐

In which type of school are you currently working?	Please select one
Primary School	☐
Secondary School	☐

Which subject(s) do you teach?	Please select all that apply
National Language(s)	☐
Social Studies (Social Science, History, Geography)	☐
Mathematics	☐
Science	☐
Music	☐
Art	☐
Physical Education	☐
Foreign Language(s)	☐
Others (please specify)	

What is your current position?	Please select one
School principal	☐
School Vice-principal	☐
Teacher	☐
Others (please specify)	☐

How long have you been working as a teacher?	Please select one
Less than five years	☐
5-10 years	☐
11-20 years	☐
21-30 years	☐
More than 31 years	☐

How long have you been working as a school principal?	Please select one
Less than five years	☐
5-10 years	☐
11-20 years	☐
21-30 years	☐
More than 31 years	☐

Part A: Teachers' preparedness for facilitating transversal competencies (TVC) learning

Teachers' preparedness

1. In your opinion, which skills and competencies are important for teachers to implement [education policies/ curriculum that promote transversal competencies in your country]? Please select all that apply. If you would like to add other opinion, please specify at "Others".

1	Communication skills[1]	16	Fairness
2	Organizational skills[2]	17	Creativity
3	Listening skills	18	Tolerance
4	Assessment skills[3]	19	Openness
5	Critical thinking[4]	20	Assertiveness
6	Decision-making skills	21	Flexibility
7	Facilitating skills (facilitating active learning by the students both individually and in group)	22	Self-awareness[5]
8	Conflict resolution skills (teaching and classroom issues)	23	Maintaining leadership by encouraging enthusiasm, interest and effort in the classroom
9	Designing and modifying curricula (lesson planning)	24	Motivating self and students
10	Respect for diversity	25	Inspiring respect and trust among students
11	Reflective thinking	26	Continuous and organized self-learning
12	Empathy	27	Effectively use ICT for management and teaching – learning process
13	Collaboration[6]	28	Ethical use of ICT
14	Passion/love for teaching	29	Use appropriate and effective teaching methodologies and learning approaches
15	Comprehensive knowledge of the subject matter and student development	30	Others, please specify _____

2. To what extent do you believe you are equipped with the following skills and competencies? For each question please select the answer (1-5) that is most applicable. If you would like to add other opinion, please specify at" Others".

---

1   Ability to communicate clearly using oral, written and non-verbal languages in a diverse environment

2   Ability to plan, design lesson, manage time and classroom

3   Multiple measure of students' ability including their TVCs

4   Ability to analyze, interpret, evaluate, summarize and synthesize information (Trilling & Fadel, 2009)

5   Awareness of oneself, including one's traits, feeling and behaviors

6   Ability to work effectively and respectfully with diverse teams; assume shared responsibility and value individual contributions made by each team members (Trilling & Fadel, 2009)

	Skills and competencies	Very Much	To some extent	Very little	Not at all	Do not know
1	Communication skills	5	4	3	2	1
2	Organizational skills	5	4	3	2	1
3	Listening skills	5	4	3	2	1
4	Assessment skills	5	4	3	2	1
5	Critical thinking	5	4	3	2	1
6	Decision-making skills	5	4	3	2	1
7	Facilitating skills (facilitating active learning by the students both individually and in group)	5	4	3	2	1
8	Conflict resolution skills (teaching and classroom issues)	5	4	3	2	1
9	Designing and modifying curricula (lesson planning)	5	4	3	2	1
10	Respect for diversity	5	4	3	2	1
11	Reflective thinking	5	4	3	2	1
12	Empathy	5	4	3	2	1
13	Collaboration	5	4	3	2	1
14	Passion/love for teaching	5	4	3	2	1
15	Fairness	5	4	3	2	1
16	Creativity	5	4	3	2	1
17	Tolerance	5	4	3	2	1
18	Openness	5	4	3	2	1
19	Assertiveness	5	4	3	2	1
20	Flexibility	5	4	3	2	1
21	Self-awareness	5	4	3	2	1
22	Maintaining leadership by encouraging enthusiasm, interest and effort in the classroom	5	4	3	2	1
23	Motivating self and students	5	4	3	2	1
24	Inspiring respect and trust among students	5	4	3	2	1
25	Continuous and organized self-learning	5	4	3	2	1
26	Effectively use ICT for management and teaching – learning process	5	4	3	2	1
27	Ethical use of ICT	5	4	3	2	1
28	Use appropriate and effective teaching methodologies and learning approaches	5	4	3	2	1
29	Comprehensive knowledge of the subject matter and student development	5	4	3	2	1
30	Others, please specify _____					

3. To what extent do you feel confident about facilitating educational activities to promote *[transversal competencies]* in your classroom?

Very much	To some extent	Very little	Not at all	Do not Know
5	4	3	2	1

4. To what extent were your pre-service training relevant for facilitating TVC learning? For each question please select the answer (1-5) that is most applicable. If you would like to add other opinion, please specify at "Others".

	Pre-service training	Very much	To some extent	Very little	Not at all	Do not know
1	Practicum teaching	5	4	3	2	1
2	Course work[7]	5	4	3	2	1
3	Induction programme[8]	5	4	3	2	1
4	Others (please specify)					

Teachers' perception of TVC learning

5. To what extent do you agree with the below statements? For each question please select the answer (1-5) that is most applicable. If you would like to add other opinion, please specify at "Others".

	Statements	Strongly agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	Students understand the importance of TVCs	5	4	3	2	1
2	Parents understand the importance of TVCs	5	4	3	2	1
3	Ensuring acquisition of TVCs among students is time consuming	5	4	3	2	1
4	Ensuring acquisition of TVCs among students requires additional preparation	5	4	3	2	1
5	My effort to facilitate students' TVC learning is well understood and supported by my supervisors	5	4	3	2	1
6	My achievements to facilitate students' TVC learning are reflected in my appraisal	5	4	3	2	1
	Others (please specify)					

---

7 Work performed by student teachers for the purpose of learning and encompasses a wide range of activities including practice, experimentation, research and writing

8 A systematic form of support (orientation, training, mentor support) provided to teachers immediately prior to or after commencing the actual teaching job.

6. Over-all, to what extent are you satisfied with the current level of support provided to you in facilitating TVC learning?

Very much	To some extent	Very little	Not at all	Do not Know
5	4	3	2	1

Professional development for teachers to facilitate TVC learning

7. How is professional development positioned in your school documents (e.g. school development plan)? Please select all that apply. If you would like to add other opinion, please specify at "Others".

1	It is clearly mentioned in the school documents and is organized by the school.
2	It is not clearly mentioned in the school documents but organized by teachers.
3	It is not clearly mentioned in the school documents but conducted by individual teacher.
4	Others (please specify)

8. How do you set your professional development goal/s? If you would like to add other opinion, please specify at "Others".

1	I set my goal in collaboration/consultation with school management (e.g. school principal)
2	I set my goal in collaboration/consultation with master teacher/head of training section,/head teacher/ subject supervisor/peer etc.
3	I set my own goal
4	I do not set my goal
5	Others (please specify)

9. What kind of professional development opportunity are available? Please select all that apply. If you would like to add other opinion, please specify at "Others".

1	Lectures (school-based, region, national)
2	Lesson study[9] (including demonstration lessons and follow-up discussions)
3	Peer Coaching[10]
4	Exchanging ideas/consultation with colleagues and specialists within or outside the school (other than listed above)

---

9 'Lesson study' is a type of professional development for teachers, through examination of their teaching practices, usually including lesson demonstration and critiquing the lesson. For more detail, please refer to 'Lesson Study' at Teachers College, Columbia University. http://www.tc.columbia.edu/lessonstudy/lessonstudy.html

10 'Peer coaching' is a confidential process through which two or more professional colleagues work together to reflect on current practices, expand, refine and build new skills; teach one another; conduct classroom research; or solve problems in the workplace. For more information, please refer to How to Plan and Implement a Peer Coaching Program by Pam Robbins. http://www.ascd.org/publications/books/61191149/chapters/A-Definition-of-Peer-Coaching.aspx

5	Participating in leadership roles (coach, data analysts, curriculum specialists, trainer, etc) other than teaching				
6	Visiting other schools to observe and learn				
7	Self-directed[11]professional development (other than listed above)				
8	Opportunity and funding assistance to enrol in university to earn units/degree				
9	No professional development opportunity is available				
10	Others (please specify)				

10. To what extent are your professional development opportunities relevant for facilitating TVC learning? For each question please select the answer (1-5) that is most applicable. If you would like to add other opinion, please specify at "Others".

	Professional development opportunity	Very much	To some extent	Very little	Not at all	Do not know
1	Lectures (school-based, region, national)	5	4	3	2	1
2	Lesson study (including demonstration lessons and follow-up discussions)	5	4	3	2	1
3	Peer Coaching	5	4	3	2	1
4	Exchanging ideas/consultation with colleagues and specialists within or outside the school (other than listed above)	5	4	3	2	1
5	Participating in leadership roles (coach, data analysts, curriculum specialists, trainer, etc) other than teaching	5	4	3	2	1
6	Visiting other schools to observe and learn	5	4	3	2	1
7	Self-directed professional development (other than listed above)	5	4	3	2	1
8	Opportunity and funding assistance to enrol in university to earn units/degree	5	4	3	2	1
9	Others (please specify)	5	4	3	2	1

11. How often do you participate in professional development activities in a year? If you would like to add other opinion, please specify at "Others".

1	More than once a week
2	Once or twice per month
3	Once or twice per semester
4	Once per academic year
5	Did not participate in training last year

---

11 A process by which teachers take the initiative, with or without the assistance of others, to develop themselves by formulating their own goals, diagnosing their own teaching needs and identifying resources needed and strategies to attain those goals.

2015 ERI-Net Regional Study on Transversal Competencies in Education Policy and Practice (Phase III)

12. What are the common topics of the training at your school? Please select all that apply. If you would like to add other opinion, please specify at "Others".

1	Current trends in education [country education policies, curriculum, national standards, current researches in education]
2	Subject knowledge/content
3	Teaching methods (e.g. how to utilize various learning approaches such as group work, pair learning and class discussion; strategies related to facilitating acquisition of TVC)
4	Classroom and behavior management
5	Instructional materials preparation
6	Career counseling
7	Use and application of ICT in teaching
8	Others (please specify)

13. To what extent do you agree with the below statements? For each question please select the answer (1-5) that is most applicable. If you would like to add other opinion, please specify at "Others".

The professional development activities that I have attended are:	Strongly agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1 Clearly indicated in the school plan	5	4	3	2	1
2 Based on my needs	5	4	3	2	1
3 Provided regularly	5	4	3	2	1
4 Conducted Free of charge	5	4	3	2	1
5 Supported by school head and parents	5	4	3	2	1
6 Considered as incentive (use for promotion and salary increase)	5	4	3	2	1
7 Helpful in improving myself (knowledge, skills, values, attitudes)	5	4	3	2	1
8 Application in the classroom is monitored by school head (technical assistance was provided)	5	4	3	2	1
9 Necessary to improve student learning and acquisition of transversal competencies	5	4	3	2	1
10 Compulsory and part of school policy	5	4	3	2	1
11 Others (please specify)					

14. How often are you engaged in the following self-directed professional development activities? For each question please select the answer (1-5) that is most applicable. If you would like to add other opinion, please specify at "Others".

Self-directed professional development activities		Very often	Sometimes	Not much	Not at all	Do not know
1	Initiating school-level study group such as lesson study	5	4	3	2	1
2	Participating in training, seminar and academic conferences outside of school	5	4	3	2	1
3	Reading related magazines and books	5	4	3	2	1
4	Using information through internet and other medias to update oneself of current trends and researches in education	5	4	3	2	1
5	Seeking advice from senior teachers and colleagues	5	4	3	2	1
6	Seeking advice from managements (school head)	5	4	3	2	1
7	Exchanging information with teachers in other schools	5	4	3	2	1
8	Enrolling in universities to earn units/degree	5	4	3	2	1
9	Others (please specify)					

15. What additional professional development support would you need to further facilitate TVC learning?

Part B: TVC learning in increasingly interconnected world

16. Are there any specific policies, strategies, plans or projects corresponding to globalization in your school?

    Yes _____ No _____
    If yes, please describe _____

17. Which among the list of skills below are important for students to successfully navigate in an increasingly interconnected society? Please select all that apply. If you would like to add other opinion, please specify at "Others".

Critical and Innovative thinking Domain	
1	Creativity
2	Entrepreneurship
3	Resourcefulness
4	Application skills
5	Reflective thinking
6	Reasoned decision-making
Interpersonal Skills Domain	
7	Communication skills
8	Organizational skills
9	Teamwork
10	Collaboration
11	Sociability
12	Collegiality
13	Empathy
14	Compassion
Media and Information Literacy Domain	
15	Ability to obtain and analyse information through ICT
16	Ability to critically evaluate information and media content
17	Ethical use of ICT
(Others if any)	
18	(please specify)

18. To what extent do you think the roles of teachers have been changed since *[the education reform to introduce transversal competencies I education in your country]*?

Very much	To some extent	Very little	Not at all	Do not Know
5	4	3	2	1

19. To what extent are you aware of the *[education policies/curricula/strategies that promote transversal competencies in your country]* developing global citizen?

Very much (knew the contents)	To some extent (knew as a fact that it was included)	Very little	Not at all	Do not Know
5	4	3	2	1

20. To what extent do you feel globalization have an impact on school activities?

Very much	To some extent	Very little	Not at all	Do not Know
5	4	3	2	1

21. To what extent, does your school policy emphasize the importance of preparing students for globalized world?

Very much	To some extent	Very little	Not at all	Do not Know
5	4	3	2	1

22. To what extent are you conscious about developing globally competent students in your daily education practices?

Very much	To some extent	Very little	Not at all	Do not Know
5	4	3	2	1

23. Are there any good examples of school activities developing students' transversal competencies for globalized world?

…………………………………………….1. Yes………………………… 2. No…………………………

24. If yes, please describe the case in detail.

25. If you have any comments, please use the space below.

Thank you very much for your participation.