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The Survey of Adult Skills (PIAAC) and "Key Competencies"

This chapter discusses the evolution of the concept of "key competencies" and how the Survey of Adult Skills (PIAAC) defines the term.

Over the past 30 years, there have been many exercises, at both national and international levels, that have identified sets of competencies (or skills)[1] that are considered to be essential for successful participation in the labour market and/or should be developed by education and training systems to prepare individuals for working life and for participation in education and training and civic life.

At the international level, examples of key competency frameworks include those developed by the DeSeCo[2] project (Rychen and Salganik, 2003), the European Union (European Commission, 2007) and the ATC21S[3] group (Binkley et al., 2010). Among the many national frameworks that have been developed, there are those of the Secretary's Commission on Achieving Necessary Skills in the United States (SCANS, 1991), Conference Board of Canada (n.d.), the Mayer Commission (Mayer, 1992) and Employability Skills Framework in Australia (DEEWR, 2012), among others.

As discussed in Chapter 1, the competencies assessed in the Survey of Adult Skills (PIAAC) are conceived as "key information-processing competencies". Given this shared terminology, it is important to clarify the relationship of the Survey of Adult Skills to the work on defining and identifying key competencies. Two points are made in this respect:

- The Survey of Adult Skills shares a similar conceptualisation of competencies/skills with much of the work on key competencies.

- There is considerable overlap between the skills/competencies identified in key competency frameworks and those that are the focus of the Survey of Adult Skills.

THE DEFINITION OF KEY COMPETENCIES

What is competency?

Most of the work on key competencies (or skills) conceives competency in "functional" terms. Competency is the capacity to generate appropriate performance: to marshal the resources (tools, knowledge, techniques) in a social context (which involves interacting with others, understanding expectations) to realise a goal that is appropriate to the context. Commonly, competency is described in terms of the application and use of knowledge and skills in common life situations as opposed to the mastery of a body of knowledge or a repertoire of techniques. To this end, competencies are commonly conceived as encompassing three dimensions: knowledge, skills and attitudes (beliefs, dispositions, values).

At this point, a comment on terminology is appropriate. The use of the terms "competency" and "skill" as described in the previous paragraph is by no means universally shared. Many frameworks use "skill" in both a broad sense (the capacity to act appropriately in context) and in a more narrow sense (e.g. as a technical capacity). The ACT21S framework (Binkley et al., 2010), for example, identifies a number of 21st-century skills ("skills" in a broad sense) described in terms of "knowledge", "skills" (in the narrow sense) and "attitudes/values/ethics". Additionally, the concept of "competency" is used in different ways in different contexts, sometimes by the same author or organisation. An example is provided by the European Commission. In the European Key Competencies for Lifelong Learning framework (European Commission, 2007), "competency" is defined as encompassing or combining "knowledge" and "skill" – i.e. "skill" is a dimension or aspect of "competency". In the European Qualifications Framework (European Commission, 2008), "knowledge", "skills" and "competency" are treated as distinct categories of learning outcomes – i.e. "skill" is not conceived as a component of "competency". In this chapter and the one that follows, a pragmatic approach is adopted regarding the use of these two terms. "Competencies" and "skills" are used interchangeably except where the authors or frameworks referred to use them in a specific sense.

What is a key competency or skill?

There are four main features common to key competencies. Key competencies:

- constitute a prerequisite for achieving the desired outcome or outcomes, e.g. for a "successful life and a well-functioning society" (Rychen and Salganik, 2003), as preparation for the (emerging) labour market (Mayer, 1992), or for "personal fulfilment, active citizenship, social cohesion and employability in a knowledge society" (European Commission, 2007);

- are relevant to all individuals;[4]

- can be learned; and

- are generic or highly transferable competencies that are relevant to multiple social fields and work situations, as opposed to competencies that are of relevance in specific occupations, industries or types of activity.

Key competencies are thus "general" competencies in the sense of being relevant to all members of the working population and across all fields of economic and social activity. While the economic and social importance of "specific" competencies (skills related to specific rather than general-use technologies, discipline-specific or occupation-specific skills) is not denied, they are intentionally defined to be outside the scope of key competency frameworks.

The main area in which frameworks differ concerns the treatment of personal qualities, attributes and attitudes. Some frameworks include individual dispositions and attitudes either as a dimension of competency or as a type of competency. For example, SCANS includes the personal qualities of individual responsibility, self-esteem, sociability, self-management, and integrity as part of its "foundation". The European Key Competencies for Lifelong Learning define appropriate attitudes in respect of each of its constituent domains of competency.[5] Other frameworks explicitly exclude personal qualities, values and attitudes. For example, the Australian Mayer Committee excluded personal qualities from the list of the key competencies it identified on the grounds that the key competencies had to be able to be developed through education and training, should not be based on innate predispositions or adherence to any particular set of values, and could be measured by credible assessment (Mayer, 1992). The DeSeCo framework excluded personal qualities and values on the basis that they are not competencies in themselves but rather conditions of the development of competency (Rychen and Salganik, 2003).

The classificatory schemas used to present key competencies also vary. Some frameworks establish hierarchies of competencies. For example, SCANS differentiates "competencies" from "foundations" in its framework of "workforce know-how". The foundations (basic skills, thinking skills and personal qualities) represent the pre-conditions for the acquisition of the competencies. The framework developed for the ALL study distinguishes between foundation skills and other skills built on this foundation by differentiating "fully portable" skills from "largely portable" skills (Murray et al., 2005, p. 67). Others, such as the European Key Competencies for Lifelong Learning (European Commission, 2007) do not establish a hierarchical relationship between groups of competencies. Frameworks also differ in whether or not they establish performance levels. The frameworks of SCANS and Mayer define performance levels, for example, whereas DeSeCo, EC and ATC21S do not.

Despite differences in terminology and classification, there is considerable convergence between frameworks. Four broad groups of competencies are identified by most frameworks: cognitive competencies, interpersonal skills, intrapersonal competencies, and technological skills (usually related to the use of ICTs as a general use technology).[6] Within these broad groupings, subgroups are often identified. Table 7.1 provides an overview of the broad groupings of competencies and their constituent subcategories, and illustrates the subcategories with specific examples drawn from existing frameworks.

Table 7.1
Competency groups and examples of specific competencies in competency frameworks

Competency groups	Examples of specific competencies cited in frameworks
Cognitive competencies	
Communication	Reading, writing, oral communication, proficiency in foreign languages.
Information processing	Thinking skills, managing information.
Problem solving	Recognising problems and devising and implementing a plan of action, discovering a rule or principle underlying the relationship between two or more objects and applying it when solving a problem.
Learning	Learning to learn, reflexivity, effective management of one's own learning.
Mathematics	Using numbers, reasoning mathematically, communicating in mathematical language.
Interpersonal competencies	
Interpersonal	Team work, cultural sensitivity, working with others, relating to customers, negotiating, participate in projects and tasks.
Intrapersonal competencies	
Self-regulation	Self-awareness, reflexivity, meta-cognition, adaptability, coping with stress.
Management	Planning (self and others), organisation, responsibility.
Creativity/entrepreneurship	Initiative, creativity, ability to assess and take risks.
Technological competencies	
ICT	Work with a variety of technologies, use IT to organise data.

THE SURVEY OF ADULT SKILLS (PIAAC) AND KEY COMPETENCIES

How do the skills about which information is collected in the Survey of Adult Skills relate to the competencies commonly identified as "key competencies"?

First, the Survey of Adult Skills and most key competency frameworks share a functional conception. The focus of both is on generating performance that is appropriate to context.

Second, the skills directly assessed in the Survey of Adult Skills comprise core components in classifications of key competencies. Reading, numeracy and problem solving as well as the use of ICTs are explicitly identified as key skills (or competencies) in all competency frameworks. Table 7.2 provides a summary of the coverage of the broad domains of competency identified in Table 7.1 above, by both the direct measures and the questions relating to the use of skills in work and everyday life in the Survey of Adult Skills.

Table 7.2
Key competencies and skills covered in the Survey of Adult Skills (PIAAC)

Key competencies	Measured directly in the Survey of Adult Skills (PIAAC)	Measured indirectly (through self-reports) in the Survey of Adult Skills (PIAAC)
Cognitive competencies		
Communication	Literacy (reading)	Reading and writing (work and personal life)
Information processing		
Problem solving	Problem solving in technology-rich environments	Problem solving (work)
Learning		Learning activities (work) Deep learning
Mathematics	Numeracy	Numeracy activities (work and personal life)
Intra and interpersonal competencies		
Interpersonal		Collaboration, influencing (work) Trust in others
Self-regulation		Learning style
Management		Organisation/planning (work)
Creativity/entrepreneurship		
Technological competencies		
ICT	Literacy (digital reading), problem solving in technology-rich environments, ICT core test	ICT use (work, everyday life)

While the skills assessed in the Survey of Adult Skills feature in most key competency frameworks, they nevertheless represent a subset – albeit an important one – of the skills and competencies identified in competency frameworks. For example, the communication skills identified in competency frameworks go well beyond reading to encompass oral communication, written communication, and sometimes communication in a second language. The intra- and interpersonal competencies included in competency frameworks go well beyond the relatively narrow set of skills about which the Survey of Adult Skills collects information.

The Survey of Adult Skills was not designed to operationalise elements of any particular competency framework. The selection of the skills that are assessed in the survey, the definition of constructs, and the selection of skills about which information on use is collected are not based on the use or acceptance of any single framework.[7] In fact, the relationship between the reflection on key competencies and 21st-century skills that has been ongoing since the late 1980s, and the development of large-scale assessments of adults that has culminated in the Survey of Adult Skills, is a complex one. On the one hand, both the interest in measuring cognitive skills and the interest in identifying key competencies can be seen as having a common origin in the reflection on the direction and speed of technological change and economic restructuring and the growing importance of cross-cutting cognitive and non-cognitive skills in a high-skilled, service-based economy. On the other hand, work on key competencies and the development of skills assessments have not proceeded in isolation from each other; in fact, there has been considerable mutual influence.

For example, the experience of large-scale international assessments of adults (in particular that of the International Adult Literacy Survey) and school students (PISA) and the approach to the definition of literacy competency in these studies provided an influential backdrop to the development of the DeSeCo framework. The DeSeCo framework was, in turn, influential in developing the Adult Literacy and Life Skills Survey, particularly in terms of exploring the possibility of extending the assessment beyond the domains of literacy and numeracy (OECD/Statistics Canada, 2005, p. 26). More recently, both PISA and the Survey of Adult Skills have provided points of reference for the work of the ATC21S group, particularly given the emphasis ATC21S places on IT skills and on assessment as an essential component of a framework defining 21st-century skills and describing 21st-century learning outcomes in a form that can facilitate measurement.

Notes

1. The nomenclature varies – "key competencies", "core skills", "essential skills", "21st-century skills" and "employability skills", for example, have all been used in different exercises. Despite attempts to distinguish "competencies" from "skills", the terms are used more or less interchangeably in practice.

2. Definition and Selection of Competencies.

3. Assessment and Teaching of 21st-Century Skills.

4. The Mayer Committee, for example, took the view that the key competencies that it identified were competencies that were so important that they "should be acquired by all young people in their preparation for work" (Mayer, 1992, p. ix).

5. As an example, "an entrepreneurial attitude is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals, or aims held in common with others, including at work" (European Commission, 2007).

6. This draws on meta-classifications of the skills identified by key competency frameworks in Curtis and McKenzie (2001), Murray et al. (2005, pp. 54-57), and Pellegrino and Hilton (2012, pp. 2-12–2-14).

7. Nor, might it be added, only in work relating to key competencies.

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