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A Contribution of the OECD Program *Definition and Selection of Competencies: Theoretical and Conceptual Foundations*

Definition and Selection of Key Competencies

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Background

Introduction

The importance of knowledge, skills, and competencies to individuals and society is widely accepted among policymakers in OECD countries. At least at the discourse level, a well-educated, knowledgeable, highly qualified citizenry is seen as playing an eminent role in facing the challenges of the present and the future in an increasingly interdependent, changing, and conflictual world.

To date, the major impetus in OECD countries for efforts in the area of key competencies has come from the business sector and from employers. From a purely economic viewpoint, competencies of individuals are seen as important because they contribute to

- boosting productivity and market competitiveness;
- developing an adaptive and qualified labor force; and
- creating an environment for innovation in a world dominated by global competition.

From a broader social perspective, knowledge, skills, and competencies are important because they contribute to

- increasing individual understanding of public policy issues and participation in democratic processes and institutions;
- social cohesion and justice; and
- strengthening human rights and autonomy as counterweights to increasing global inequality of opportunities and individual marginalization.

Partly due to a recognition that both human and social capital are important factors for the functioning of society and the economy, there has been in recent years an increased interest in information about knowledge, skills, and competencies. Consequently, new indicators of education outcomes beyond the traditional measures (such as number of years of education or highest degree earned) are seen as relevant and important. This includes indicators not only of what individuals know and can do in school subjects but also of their capability to respond to the demands of everyday life.

If, in the 1980s, OECD countries adopted a pragmatic approach using available outcome-related data on education systems, in recent years they have moved towards a more systematic, long-term data collection strategy for education indicators programs. At the same time, OECD constituents have realized that additional theoretical and conceptual inputs would benefit the development of such programs and the interpretation of data. An analysis of previous competency-related large-scale studies within the OECD[1] confirmed the absence of an explicit, overarching conceptual framework to guide the work.

The OECD Program, *Definition and Selection of Competencies: Theoretical and Conceptual Foundations (DeSeCo)*, was initiated to work towards filling this gap. Under the leadership of the Swiss Federal Statistical Office (SFSO) and with the support of the United States Department of

[1] Laura H. Salganik, Dominique S. Rychen, Urs Moser, John W. Konstant (1999), *Projects on Competencies in the OECD Context: Analysis of Theoretical and Conceptual Foundations*, SFSO, OECD, ESSI, Neuchâtel.

Education National Center for Education Statistics (NCES), DeSeCo seeks, through an interdisciplinary approach in collaboration with ongoing OECD assessment programs, to

- advance the theoretical foundation of key competencies;
- provide a reference point for indicator development and interpretation of empirical results;
- encourage an iterative process between theoretical and empirical work; and
- respond, eventually, to information needs of policymakers.

Guiding Research Questions

The DeSeCo Program[2] is concerned with a number of wide-ranging issues relating to competency determination. The following list provides a few examples of the kinds of research questions developed to guide the program's activities:

1. What is meant by the notions of competence, key competencies, skills, etc.? How can these terms be conceptualized and described?
2. Which notions concerning the nature of human beings and society should serve as a starting point for the definition and selection of key competencies? Why do we need competencies? What are the premises for the adequate functioning in society and the attainment of so-called successful life from the perspective of both the individual and society?
3. How can the perspectives of different academic disciplines contribute to the understanding and construction of a set of key competencies? What are the theoretical models, concepts and arguments put forward by these various disciplines?
4. Which key competencies are necessary for understanding and acting in different fields of life – including economic, political, social, and family domains, public and private interpersonal relations, individual personal development, etc.? How can these competencies be described and theoretically justified, and what empirical evidence does available research provide of their importance? Do key competencies operate independently, or should they be viewed as an interdependent set or constellation of competencies? In either case, how do the identified key competencies relate to each other?
5. To what extent are key competencies immutable with reference to social, economic, and cultural conditions? To what extent are they then generally valid, or to what extent does their importance vary by country or region according to particular socio-economic and cultural contexts?
6. To what extent is it possible to identify key competencies independent of age, gender, status, professional activity, etc.? Are certain competencies particularly important in the various phases of life, and if so, which ones? Do we need the same basic, universal key competencies when we are young, join the workforce, establish a family, advance in our professional or political career and retire?
7. What does this scientific discussion contribute to policy-making and practice? Do the perspectives and concepts developed match those resulting from experience in policy-making and practice? Or do representatives from different fields of social activity have completely different criteria and visions for what is important to them? Is it at all possible for a dialogue between theory and practice to develop?
8. What is the role of policy and practice in defining, selecting and describing skills as "key competencies"? What are the political, social, and economic factors that influence the

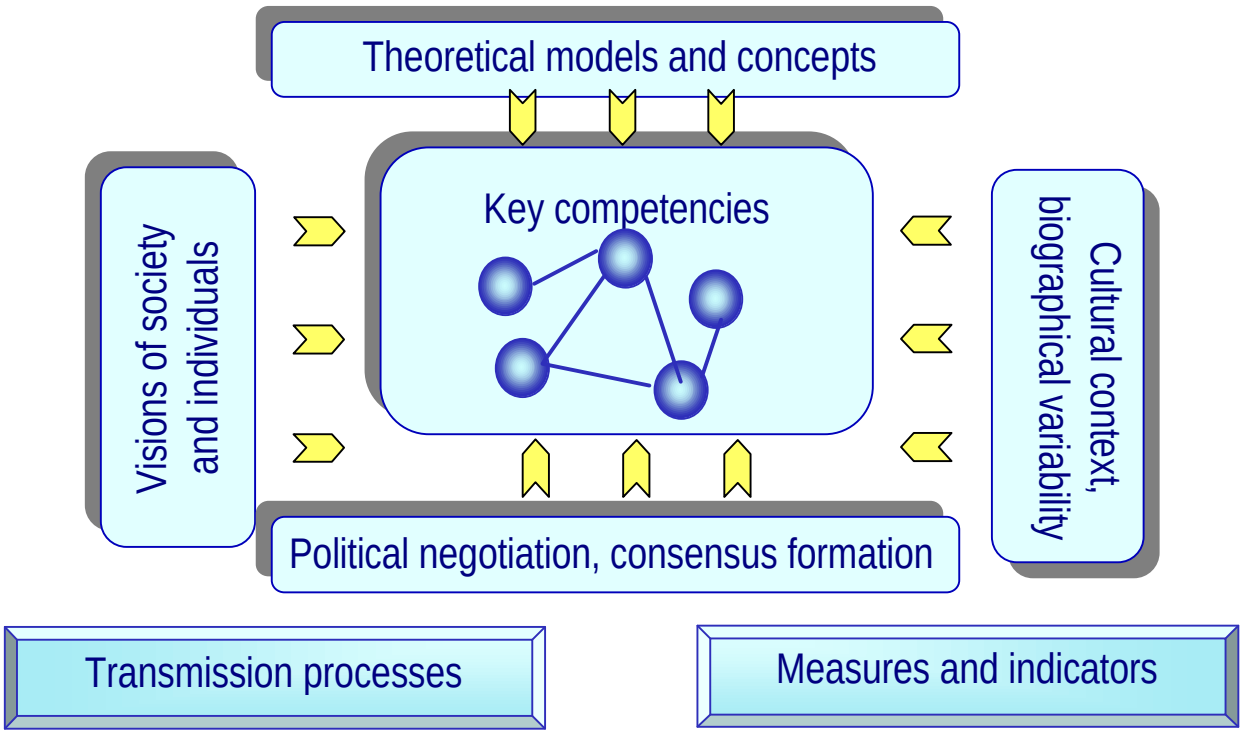
[2] Swiss Federal Statistical Office (1999*), Definition and Selection of Competencies: Theoretical and Conceptual Foundations (DeSeCo),* September, 1999, Neuchâtel

definition and selection processes of key competencies in different socio-economic and cultural environments, and how is this influence exercised?

9. What is the role of social institutions in transmitting competencies to the population? What is the role of education, with its specific institutions and processes – schools and teaching – in the development of key competencies? What is the role of other potential sources for acquiring competencies, such as friends, parents, the working environment, media, religious, and cultural organizations? To what extent can the transmission patterns be altered? In other words, to what extent can the transmission of key competencies be controlled by policies?
10. What is the relevance of the emerging ideas on key competencies for the development and interpretation of indicators designed to measure competencies among the population? How could these issues be addressed and developed by future research? What are the potential approaches for conceptualizing abstract competencies at a more concrete level?

As represented by Figure 1 below, the underlying hypothesis for this work is that any particular set of key competencies is the result of multiple factors. At the most fundamental level, the underlying vision of the world, including assumptions about society and individuals, affects the identification of key competencies. Different theoretical and conceptual perspectives also have a profound effect on which competencies are identified as key as well as how the problem is approached. Factors such as culture, gender, age, and social status influence the forms that abstract key competencies take in specific contexts. Finally, the definition and selection of key competencies is a result not only of scientific analysis but also of a political negotiation process and consensus formation. Each of these aspects should be taken into account when considering how key competencies are transmitted and developed, and when constructing and interpreting indicators.

Figure 1: A Conceptual Overview



Activities

The initial undertaking of the DeSeCo program was an analysis of previous competence-related work in the OECD context[3]. The second activity was an analysis of existing theoretical and conceptual approaches to concepts of competence[4]. The third activity, undertaken in 1999, was the production of five expert reports, each detailing a proposed set of competencies from a different theoretical background and academic discipline. The authors[5] were to expound fully on their conceptualization of competence and justify their approach theoretically, taking into account any available empirical research providing evidence for the importance of the proposed set of competencies. A commenting process followed, wherein the expert reports were distributed among the authors, other academics, and participating leading representatives from various fields (e.g., economic, social, educational, and cultural sectors)[6]. In October 1999, an international symposium was held in Neuchâtel, Switzerland, fostering an exchange of ideas between the authors of the scientific reports and other scientists, representatives of leading economic and social institutions, and policymakers. The symposium was the culmination of the program to date, as it was an opportunity to reflect on the DeSeCo Program's aforementioned first three main activities.

At this stage, DeSeCo is still focused on developing and refining a conceptual and theoretical approach to key competencies that draws on multiple disciplinary perspectives. In its future activities, it will continue the development work by focusing on

a) the identification and description of key competencies with regard to important specific fields of activities,
b) the mechanisms that operate nationally in defining and selecting key competencies, and
c) the role of policy and practice in defining competencies.

These are all crucial steps towards determining the potential for developing a conceptualization of key competencies that can be used to guide development of indicators.

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[3] Laura H. Salganik, Dominique S. Rychen, Urs Moser, John W. Konstant (1999), *Projects on Competencies in the OECD Context: Analysis of Theoretical and Conceptual Foundations*, SFSO, OECD, ESSI, Neuchâtel.

[4] Franz E. Weinert (Max-Planck Institute for Psychological Research) (1999), *Concepts of Competence*, DeSeCo Expert Report. Swiss Federal Statistical Office. Neuchâtel. (downloadable at www.deseco.admin.ch)

[5] The authors are:
Monique Canto-Sperber, Centre National de la Recherche Scientifique, France, and Jean-Pierre Dupuy, Ecole Polytechnique, Centre de Recherche en Epistémologie Appliquée, France, representing a philosophical perspective;
Jack Goody, St. John's College, University of Cambridge, United Kingdom, representing an anthropological perspective;
Helen Haste, University of Bath, United Kingdom, representing a psychological perspective;
Frank Levy, Massachusetts Institute of Technology, United States, and Richard J. Murnane, Harvard University, United States, representing an economic perspective; and
Philippe Perrenoud, University of Geneva, Switzerland, representing a sociological perspective.
(cf. 5 *DeSeCo Expert Reports* downloadable at www.deseco.admin.ch)

[6] The commentators included:
Carlo Callieri, Confindustria, Italy;
Jacques Delors and Alexandra Draxler, Task Force on Education for the Twenty-first Century, UNESCO;
Jean-Patrick Farrugia, Le Mouvement des Entreprises de France (MEDEF), France;
Bob Harris, Education International;
Robert Kegan, Harvard University, United States;
George Psacharopoulos, University of Athens, Athens, Greece (formerly with the World Bank);
Cecilia Ridgeway, Stanford University, United States;
Laurell Ritchie, Canadian Auto Workers, Canada;
M. Boediono, Ministry of Education and Culture, Indonesia; and
Leonardo Vanella, Centro de Estudios e Investigacion del Desarrollo Infanto Juvenil, Argentina.
(cf. *Comments on the DeSeCo Expert Opinions* downloadable at www. deseco.admin.ch)

What follows is an attempt to delineate several common and relevant features among the different proposed approaches to defining and selecting key competencies. It represents a provisional, but significant step towards developing a common conceptual frame of reference for identifying key competencies[7].

Normative Assumptions – Visions of Society and Individuals

Any conceptual or theoretical foundation for defining and selecting key competencies is inevitably influenced by conceptions about individuals and society and by what is valued in society and in life under particular socio-economic and political conditions. Today, we are confronted with important and complex challenges such as rapid social and technological changes, economic and cultural globalization, increasing uniformity, and at the same time, increasing social diversity, instability of norms, large-scale value changes, substantial global inequality of opportunities, increasing marginality of certain segments of the population, and ecological pressures. Given that there are many different social and individual responses to these changes, it is important to ask: to what kind of world do we aspire? Defining key competencies raises questions such as what for? in support of which objectives? according to which criteria?

Key competencies are consistent with the principles of human rights and democratic values
A number of international texts and agreements form a solid basis for describing the universal principles governing a modern, democratic society[8]. This literature emphasizes, among other things, democratic values: respect for the law and for the rights of others; the importance of education for imparting knowledge, skills, and competencies to the population; and learning as a lifelong endeavor.

Defining key competencies in a manner that is consistent with these principles is a political and ethical challenge for countries and societies. For example, key competencies should be determined and developed in a way that is consistent with the values of autonomy and liberty. Yet at the same time, they should also be consistent with ideals of social justice so that they contribute to egalitarianism (rather than fostering the interests of an elite). The commitment to democratic values and human rights is reflected in the conceptualization of key competencies as being learned rather than innate, and as necessary for and attainable by everyone.

Key competencies give individuals the capacity for a good, successful life
Key competencies should reflect a notion of what constitutes a good and successful life for individuals beyond the satisfaction of elementary personal needs. Consistent with any major moral theory[9], a good and successful life includes close relationships with other people, an understanding of oneself and one's world, autonomous interaction with one's physical and social environment, and a sense of accomplishment and enjoyment. This broad and rich conception of a successful life represents an alternative to approaches that consider key competencies predominantly from the perspective of productivity and competitiveness.

Key competencies are not incompatible with social and individual diversity.
The concept of key competencies assumes that individuals and societies share some basic characteristics beneath the variety of approaches to life, life styles, and customs. For instance, the

[7] The analysis presented in this contribution draws heavily on the commissioned reports and comments.
[8] E.g. UN Declaration of Human Rights
[9] Monique Canto-Sperber and Jean-Pierre Dupuy, (1999), *Competencies for the Good Life and the Good Society*, A Philosophical Perspective, DeSeCo Expert Report. Swiss Federal Statistical Office. Neuchâtel.

importance of social influences and the capacity for autonomous action are elements of the human condition, not dependent on any society or culture. Yet, social and individual diversity is an undeniable fact. Thus, it is important to construct key competencies at a relatively abstract level, recognizing that their development and application may take many forms depending on social and individual factors.

The Concept of Competence

Generally speaking, concepts are socially constructed notions that facilitate the understanding of reality while also constructing it. Notions such as "key competencies" and "core skills" have become very fashionable in social policy discourse. However, these terms often have very vague meanings. Therefore, their clarification was considered a necessary prerequisite for defining and selecting key competencies. However, based on a recent commissioned report[10], we recognize that in social sciences there is no unitary use of the concept of competence, no broadly accepted definition or unifying theory. In fact, the meaning of such terms varies largely depending on the scientific perspective and ideological viewpoints involved and on the underlying objectives associated with their use, both at scientific and political levels. As such, DeSeCo adopts a pragmatic conceptual approach, limiting the use of the concept with criteria which are more or less explicit, plausible, and scientifically acceptable.

Competencies are broader than knowledge and skills

DeSeCo focuses on a functional approach[11], which places complex demands facing individuals[12] at the forefront of the concept of competence. According to this viewpoint, competencies are structured around demands and tasks. Fulfilling complex demands and tasks requires not only knowledge and skills but also involves strategies and routines needed to apply the knowledge and skills, as well as appropriate emotions and attitudes, and effective management of these components. Thus, the notion of competencies encompasses cognitive but also motivational, ethical, social, and behavioral components. It combines stable traits, learning outcomes (e.g., knowledge and skills), belief-value systems, habits, and other psychological features. In this view, basic reading, writing and calculating are skills that are critical components of numerous competencies.

While the concept of *competence* refers to the ability to meet demands of a high degree of complexity, and implies complex action systems, the term *knowledge* applies to facts or ideas acquired by study, investigation, observation, or experience and refers to a body of information that is understood. The term *skill* is used to designate the ability to use one's knowledge with relative ease to perform relatively simple tasks. We recognize that the line between competence and skill is somewhat blurry, but the conceptual difference between these terms is real.

Competencies are learned

Acquiring competencies is viewed as an on-going, lifelong, learning process. This process occurs in multiple settings. The settings and social institutions relevant for the development of competencies besides school are family, peers, work, political life, religious life, cultural life, etc.

[10] Weinert (1999), *op. cit.*

[11] This perspective contrasts with one that is focused on an *internal* mental structure for cognitive abilities and skills.

[12] Within the DeSeCo program, the focus is on the individual rather than the collective concept of competence which focuses on the prerequisites needed by a group to meet complex demands. This choice is pragmatic and implies no judgment of the two distinct theoretical-conceptual approaches.

The conception of competencies as learned contrasts with one in which competencies are considered innate, inborn characteristics.

Competency learning is not only a matter of personal effort. The development of competencies assumes a favorable social and ecological environment, which includes but goes beyond the satisfaction of basic needs (food, housing, health, etc.). It is also dependent on the quantity and quality of learning opportunities. Therefore, the structure of the economy and social institutions plays an important role in the development of competencies.

Identifying Key Competencies

This section briefly summarizes the different viewpoints of the expert authors who were asked to identify key competencies, proposes three generic key competencies, and puts forth four conceptual elements as relevant for defining and selecting key competencies.

Five Viewpoints

The sets of key competencies proposed by the authors reflect different discipline-oriented viewpoints, different models for understanding the roles of the individual and society and their relationship, and different theoretical emphases regarding the tension between status quo/continuity and change/innovation.

Monique Canto-Sperber and *Jean-Pierre Dupuy*[13] are philosophers who establish a set of values that are useful for defining a good life and are consistent with major moral theories: accomplishment, choosing one's own course through life, understanding oneself and one's world, enjoyment, and deep personal relationships. In addition, they establish the premise that the human mind cannot be reduced to a set of abstract rules or algorithms that describe the workings of a machine. Canto-Sperber and Dupuy proceed to identify five clusters of competencies needed for a good life: coping with complexity (recognizing patterns); perceptive competencies (discriminating between relevant and irrelevant features); normative competencies (choosing the appropriate means to reach a given end, appreciating various possibilities offered, making moral judgments and applying them); cooperative competencies (cooperating with others, trusting others, taking the role of the other); and narrative competencies (making sense of what happens in life to oneself and others, describing the world and one's own real and desirable place in it). These competencies can be construed as dimensions of a five-dimensional space, with sub-competencies and skills pertaining to several if not all of the five areas of key competencies.

The anthropologist *Jack Goody*[14] rejects engaging in a decontextualized discussion of key competencies on grounds that theory must always be considered in the context of practice. Recognizing that there may be some very general qualities required by modern life, Goody focuses on the intractability of specifying key competencies at a level that can span cultures, social contexts, and individuals and at a level that would also be useful for developing measures. He also cautions against limiting the work to developed countries because it is bound to be used in a larger context and have a negative, homogenizing effect.

[13] Canto-Sperber and Dupuy (1999), *op. cit*.
[14] Jack Goody (1999), *Education and Competences, An Anthropological Perspective*, DeSeCo Expert Report. Swiss Federal Statistical Office. Neuchâtel.

The work of *Helen Haste*[15], a psychologist, is based on the view that humans are adaptive, social beings whose competencies both derive from these attributes and allow them to meet the demands of particular historical periods and social contexts. She emphasizes the need to look at individuals in a cultural, social, and linguistic context, and proposes creative interaction with and management of the tension between innovation and continuity as an overarching meta-competency. From this, she identifies five key competencies: to adaptively assimilate changing technologies into social practice; to deal with ambiguity and diversity; to find and sustain community links; to manage motivation and emotion; and to focus on morality, responsibility, and citizenship. She describes the competent individual as one that "is self-sufficient, able to focus attention and plan, with a future orientation, is adaptable to change, has a sense of responsibility, has a belief that one can have an effect, and is capable of commitment".

Frank Levy and Richard Murnane[16] are economists who see recent social changes related to technology and globalization as transforming the competencies needed in the workplace. They use relevant economic theory and empirical results—as well as their own research about the hiring practices of high-wage firms—to address the question of the competencies workers need to succeed in the labor market. These competencies include reading and mathematical skills (not only for their instrumental use but as the basis for lifelong learning); oral and written communication abilities; skills to work productively in different social groups; emotional intelligence and related abilities to co-operate well with other people; and familiarity with information technology. The competencies are identified in a particular field and for a specific group (e.g., employees in the labor market), but are seen as relevant across social fields and groups.

For sociologist *Philippe Perrenoud*[17], the central question to be addressed is what competencies are needed by everyone to freely exercise his or her autonomy in multiple social fields. He uses the term social field in the sense developed by Pierre Bourdieu—a structured set of social positions dynamically organized around a given set of social interests, with its own norms, power relations and capital governing social interactions[18]. In this formulation, competencies apply across all social fields and are not specific to any one field. The key competencies Perrenoud proposes are being able: to identify, evaluate, and defend one's resources, rights and limits; to form and conduct projects and develop strategies, individually and collectively; to analyze situations and relationships; to co-operate, act in synergy and share leadership; to build and operate democratic organizations and systems of collective action; to manage and resolve conflicts; to understand, apply, and elaborate rules; and to construct negotiated orders beyond cultural differences.

To summarize, the experts structure their approaches to identifying key competencies around different organizing ideas, central questions, and conceptual frameworks. With the exception of Goody, they each propose a set of key competencies needed by the individual for what the authors define as success, reflecting their overall approaches. Levy and Murnane, as economists,

[15] Helen Haste (1999), *Competencies Psychological Realities, A Psychological Perspective*, DeSeCo Expert Report. Swiss Federal Statistical Office. Neuchâtel.
[16] Frank Levy and Richard J. Murnane (1999), *Are There Key Competencies Critical to Economic Success?, An Economics Perspective*, DeSeCo Expert Report. Swiss Federal Statistical Office. Neuchâtel.
[17] Philippe Perrenoud (1999), *The Key to Social Fields: Essay on the Competencies of an Autonomous Actor, A Sociological Perspective*, DeSeCo Expert Report. Swiss Federal Statistical Office. Neuchâtel.
[18] Pierre Bourdieu (1979), *La logique du social. Introduction à l'analyse sociologique*. Hachette. For an English source on Bourdieu, see David Swartz (1997), *Culture & Power: The Sociology of Pierre Bourdieu*. University of Chicago Press, Chicago.

detail those competencies needed for success in today's labor market, while the sociologist Perrenoud identifies key competencies as those needed for the autonomous actor to successfully defend his or her rights within society. The philosophers, Canto-Sperber and Dupuy, identify the competencies needed by the individual for a good, meaningful life. Haste bases her competencies on psychological models of how individuals interact with their environment.

Three Generic Key Competencies

A number of common considerations and arguments transcend the heterogeneity of these discipline-oriented approaches. We have identified three generic key competencies, which encompass many of the key competencies identified in the five expert reports. These are

- acting autonomously and reflectively;
- using tools interactively; and
- joining and functioning in socially heterogeneous groups.

Acting autonomously and reflectively

Autonomy of individuals is a central feature of modernity, democracy, and individualism. In particular in Western societies, the value system promotes autonomy as an aspiration and basis for individual identity. Acting autonomously means that individuals can assert their own rights and interests, think and act for themselves, initiate interactions with their physical and social environment, form and conduct projects, and develop strategies to attain goals.

Reflective exercise of autonomy requires an awareness and an understanding of one's environment: how it functions and how one fits into it. This encompasses a familiarity with the knowledge, values, rules, rites, codes, language, law, institutions, etc. specific to the field—i.e. knowing the rules of the game. Further, it requires incorporating this awareness into how one plays the game. The fact that people live by internalized social norms and in the context of relationships to others is not incompatible with autonomy. Scrutinizing and reflecting on these norms and relationships is part of individual growth and the maturation of identity.

It is inevitable that in some environments, the possibility for autonomous action is quite restricted. In these cases, the challenge for society is to empower actors to become as autonomous as possible within these limits.

Using tools interactively

"Tool" is used here in the broadest sense of the term. It encompasses physical entities, language and knowledge, laws, etc. that are relevant to meeting many important everyday and professional demands of modern society. Tools are seen as instrumental for an active dialogue between individuals and their environment. Underlying this is the idea that tools shape how we make sense of our world, how we become competent in our interactions with it, and how we deal with transformation and change. Using a tool, in this sense, implies not only having the tool and being able to use it effectively, but also understanding how the tool affects the way one interacts with the environment. For example, competencies associated with information technology include awareness of the new forms of interaction made possible by computers (such as chat rooms, email exchange, and other types of virtual communication) and the ability to adapt to them, as well as the technical skills required to manipulate computers. With interactive tool using, new cognitions and new social practices become possible.

Joining and functioning in socially heterogeneous groups
The third generic key competency is related to human dependence on others for material and psychological ends. Relationships are necessary for a sense of self, identity, and social meaning. In light of the demands of contemporary democratic societies, individuals must have the capacity to form, join, and function effectively and democratically in multiple, complex, and socially heterogeneous groups. [19]

Joining and functioning in heterogeneous groups consists of a number of components. One important component is perceiving and understanding the distinctive position of the other. Other components are negotiating conflicting interests in order to find mutually acceptable solutions, operating democratically in groups, constructing negotiated orders over and above cultural differences, and the will to develop joint strategies, etc. This requires balancing commitment to the group and its norms with the capacity for autonomous action.

Future efforts in this area should consider how these generic key competencies are interrelated. This calls for both theoretical and empirical work.

Four Conceptual Elements of Key Competencies

Consistent with DeSeCo's objective of advancing the theoretical foundations of key competencies, our work focuses on discerning conceptual or theoretical elements potentially leading to the definition and selection of relevant competencies, rather than on proposing a new list of key competencies. What follows are four analytical elements, that seem to be relevant for a multidisciplinary approach to key competence in an international context. Together they form a starting point for conceptualizing and describing key competencies from a theoretical viewpoint.

1. Key Competencies are multifunctional
Consistent with the functional approach (see above), which views competencies as structured around meeting complex demands, the concept of key competence is invoked only to designate a competence that is needed to meet a range of *different* and important demands of daily, professional and social life. Key competencies are needed to achieve different important goals and to solve multiple problems in various contexts.

2. Key Competencies are transversal across social fields
The term "transversality" is used with a particular meaning. While in the educational field, transversal competencies are viewed as spanning various scientific disciplines or educational subjects (cross-curricular competencies); we refer here to competencies that transverse various sectors of human existence. Thus, key competencies are relevant for effective participation not only in school and the labor market, but also in the political process, social networks and interpersonal relations including family life, and most generally, for developing a sense of personal well-being.

This conceptualization of key competencies is based on the theory of social fields. The environment is assumed to be structured by multiple social fields, which share important aspects such as power relations, social codes, and norms. The concept of social fields is a useful analytical element for constructing key competencies in particular social contexts[20].

[19] Cecilia Ridgeway (1999), Comment, p. 76-84 in *Comments on the DeSeCo Expert Opinions*. Swiss Federal Statistical Office. Neuchâtel
[20] Philippe Perrenoud (1999), *op. cit.*

3. Key Competencies refer to a higher order of mental complexity.
When constructing key competencies, it is important to make explicit the level of mental complexity involved. Key competencies assume a mental autonomy, which involves an active and reflective approach to life. They call not only for abstract thinking and self-reflection, but also for distancing oneself from the socializing process and even from one's own values, to be the originator of one's own positions. To give a few examples, *at work* this means being self-initiating, self-correcting, and self-evaluating rather than dependent on others to frame the problems, initiate adjustments, or determine whether things are going acceptably well. *As a citizen of a diverse society*, it means resisting the tendency to make "right" or "true" that which is merely familiar, and "wrong" or "false" that which is only strange, examining at and evaluating the values and beliefs of one's psychological and cultural heritage rather than being captive of those values and beliefs. In *school*, it implies critical thinking and being a self-directed learner, taking initiative, setting one's own goals and standards, using experts, institutions, and other resources to pursue these goals.

This active and reflective approach is based on an evolutionary model of human development in which individuals can incorporate higher levels of complexity into their thinking and actions[21]. A variety of research suggests that people have the potential to gradually reach higher levels of mental complexity throughout the course of their lifespan.

4. Key Competencies are multidimensional
It is also useful in the conceptualization of key competencies to consider them as being composed of multiple dimensions, representing mental processes[22]. They are composed of "know-how", analytical, critical and communication skills as well as common sense.

These five dimensions are:
- Recognizing and analyzing patterns, establishing analogies between experienced situations and new ones (coping with complexity).
- Perceiving situations, discriminating between relevant and irrelevant features (perceptive dimension).
- Choosing appropriate means in order to reach given ends, appreciating various possibilities offered, making judgments and applying them (normative dimension).
- Developing social-orientation, trusting other people, listening and understanding others' positions (cooperative dimension).
- Making sense of what happens in life to oneself and others, seeing and describing the world and one's real and desirable place in it (narrative dimension).

The three generic key competencies identified earlier in this paper, together with the four conceptual elements, are proposed as a potentially productive avenue for exploring and studying concrete forms of key competencies as manifested in actions, behavior, and choices of individuals and groups in different social fields (such as personal, social, economic, political, and cultural life), at different stages in life, and in different cultural contexts.

[21] Robert Kegan (1999), Comment, p. 64-69 in *Comments on the DeSeCo Expert Opinions*. Swiss Federal Statistical Office. Neuchâtel. See also Robert Kegan (1994), *In Over Our Heads*. Harvard University Press, Cambridge.
[22] Canto-Sperber and Dupuy, *op. cit.*

Implications for Policy-Making and Future Research

Since the development and interpretation of policy-wise indicators is a goal of this work, we conclude with a brief discussion of policy issues relevant to the topic of key competencies and indicator development.

Given the complexity of the demands and the challenges of the modern world, lifelong learning has become a leading theme in education, economic and social discourse. In addition, the development of competencies occurs in a wide range of social institutions where formal and informal learning takes place. Although schools will continue to play a crucial role, other institutions include the family, voluntary associations, religious organizations, cultural activities, recreational activities, and the workplace. Thus, consideration of policies related to competencies raises questions regarding the objectives of education and of the role of different institutional settings in lifelong learning. Policy related to each of these institutions should consider their potential for fostering the development of competencies. Social partnerships should also be taken into consideration.

In this context, many questions arise. What is the overall level of competence in the population? What is the competency profile of different groups of people? Where should resources for competency development be targeted? Are existing policies designed to support competency development effective? What is the relationship between competencies and social, political, and economic outcomes? Indicators in these areas will improve the design and monitoring of policies about competencies.

Yet, to obtain such information, considerable effort is needed in the areas of scientific inquiry and political discussion. We need a better understanding of how different social fields operate and how this affects demands on individuals and society. Further, we need a better understanding of the relationship between general social conditions (such as globalization and new technology) and the demands on individuals and society. An iterative process between theoretical and empirical work (including the development of measurement methodologies) is key to future success in this field. Recognizing that defining and selecting key competencies is ultimately the result of a political negotiation process, in which researchers can only be partners among others, we encourage within the DeSeCo Program the dialogue between scholars, representatives of the economic world and the social sphere, as well as policy makers. As we continue to develop our ideas about key competencies, we need to work towards a conceptualization that is both theoretically grounded and relevant to the policy world.

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