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Coll, C. (2009). Competency-based approaches to education and the personal value of school learning

The widespread adoption of competency-based approaches to education is largely due to the firm belief that they are a good way of meeting the educational challenges of our day, especially the fact that it is no longer entirely clear what the meaning or purpose of school education is. But is competency-based education really an adequate response to these challenges? The argument I will set out here has two parts. My claim in the first is that although competency-based education *could be* a good instrument for meeting these challenges, *it generally is not* because it most often reflects a superficial and confused conceptualization of competence, resulting in technocratic and supposedly neutral proposals that devalue or ignore the ideological and ethical dimension of education. I will then argue that, although they should not be regarded as *the sole response* to the educational challenges we face, approaches to the curriculum that are based on a *constructivist, situated, and sociocultural view* of competencies offer a useful platform from which to consider and address some of the key challenges derived from the fact that the meaning of school education is no longer clear.

In order to present the two parts of my argument I have organized this paper into four sections. The first considers the loss of meaning of school education, including some of the forms this takes and the challenges it poses for education systems. I will then discuss the concept of competence in order to highlight its interest from the point of view of curriculum design and development, and also to identify its main ingredients and what it can contribute to our understanding of school education. The following section looks at some of the defining features of a constructivist, sociocultural, and situated view of competencies, as opposed to other theoretical viewpoints and interpretations of the concept. Finally, I will return to the question posed at the outset and, drawing on the considerations and viewpoints discussed in the previous three sections, seek to justify the two parts of my argument regarding the extent to which competency-based approaches are capable of meeting the challenges arising from the loss of meaning of school education.

The loss of meaning and doubts about the '*what*' and '*for what*' of school education

Why is it, we may ask, that with education being seen as playing a vital role in what is now referred to as the information and knowledge society, we are questioning more than ever its purpose, its ends, its adequacy and efficacy, the very meaning of school. Far, however, from being a purely media-driven or passing phenomenon or one limited to poorly functioning education systems, the debate regarding the meaning of school is being conducted in broadly similar terms across most of the world's countries. Furthermore, the scope and importance of this phenomenon are obvious if we consider that school education has been and will — in the opinion of many, including myself — continue to be an essential tool for helping people to develop and engage with society, as well as for promoting social and economic development and for achieving greater levels of equality and social cohesion.

As I have argued elsewhere (Coll, 2009), the loss of meaning of school education has fundamentally to do with the fact that our education systems were designed in response to a very different social, economic, political, and cultural scenario to the one we inhabit today. The broader causes of this phenomenon are to be found in a series of factors and processes associated with this new scenario that have already been the object of much analysis (see, for example, Tedesco, 2000; 2009), and it is not therefore necessary to describe them in detail

here; I am referring, of course, to factors and processes such as the globalization of trade and the economy, mass migration and demographic changes, the multicultural and multilingual diversity of contemporary societies, structural changes in the labor market (precarious work, mobility, predominance of the service sector, etc.), the triumph of the culture of the spectacle, the shift from a consumer economy and a society of producers to a consumer society, the speed with which changes occur in economics, science, technology, and politics, and the absence of stable reference points in what Bauman (2007a; 2007b) refers to as liquid modernity.

Closer to the educational sphere we find another set of phenomena and processes that may also account for the loss of meaning of school education. Once again we can cite several examples that have been analyzed on numerous occasions: the progressive abandonment of broader social responsibility and the tendency to regard schools as being responsible for ensuring the development, socialization, and training of new generations (Coll, 2000); the emergence and consolidation, alongside schools, of other educational contexts and agents with an increasing influence on processes of personal development and socialization (Coll, 2003); the growing suspicion that much of the knowledge and many of the skills that are taught and acquired in schools do not equip students to engage fully with today's society, whereas some knowledge and skills that do have this potential are either absent from the curriculum or are given rather limited attention (Coll & Martín, 2006); and the crisis in relation to the transfer of knowledge, specifically, the questioning of schools' and teachers' legitimacy for fulfilling this role (Laïdi, 2000).

As a result of all these factors and processes the meaning of school education has become increasingly unclear in recent decades, such that questions are now being raised at almost all levels, both organizational and operational, of the education system. In terms of issues related to the curriculum, one need only think of how certain sectors of society have criticized what they consider to be the inability of the education system to satisfactorily meet the expectations that have traditionally been placed on it (criticisms consistent with the aforementioned tendency to place limitless expectations and responsibilities upon schools). Then there are the difficulties schools face in achieving, simultaneously, both equality and excellence, and the debates about which of the two should be given priority in policies designed to improve the quality of education. Another issue is that large numbers of students, especially at secondary level, lack interest in curricular content that they regard as bearing little or no relationship to their daily lives, and which they fail to see as being useful for their life project or professional future; importantly, this difficulty of finding meaning in what is taught at schools also affects students with acceptable or even high levels of academic achievement. And then there are the complaints of some teachers over what they perceive to be a substantial extension or modification of their responsibilities, tasks, and functions as educators.

Moving on from its causes and symptoms to the challenges it poses, I believe that the loss of meaning of school education impacts strongly on what, in my view, are the three basic dimensions of traditional education, and it is here, therefore, that efforts need to be concentrated to counteract the negative effects. The first concerns the question of *for what*, in other words, the purpose and functions of school. This dimension is central to the meaning of education, and it is also where schools most clearly experience, to paraphrase Tedesco, the repercussions of being responsible for passing on cultural heritage to new generations and preparing them for the future in a context marked by uncertainty, one in which long-term perspectives are lacking and where the direction we wish to take is far from clear. The second dimension relates to the *what* of school education, which to some extent concretizes the first dimension in that it implies decisions about the cultural capital that schools must pass on to

new generations in order to prepare them for the future, as well as about the knowledge and competencies that should ideally be taught and acquired as part of basic education. The third and final dimension concerns the *how* of school education, which takes different forms at different levels of the education system. At the structural and organizational level it has to do with governability and management (decentralization, distribution of resources, management of equipment and infrastructure, rendering of accounts and evaluation, support programs, etc.), whereas at the classroom level it concerns the planning and implementation of teaching and learning activities, in other words, issues of teaching methodology and practice.

The lack of clarity over what school education now means poses challenges for all three of these dimensions and obliges us to take steps to counteract its negative effects across all levels of our education systems. With regard to the curriculum, many of these challenges relate to the debate about what aims should prevail and guide the work of teachers and schools, in other words, decisions related to the *for what* and, especially, the *what* of school education. What knowledge, skills, attitudes, and values do individuals need to acquire in order to develop and engage fully with society? What are the things that all students need to learn as part of their basic education?

The current debate about the content of the school curriculum is thus, in many respects, an attempt to face some of the most important challenges associated with the loss of meaning of school education. The problem, however, is that these challenges seem to demand actions that pull in different or even opposing directions. On the one hand, the emergence of an information and knowledge society would seem to make it imperative to incorporate new content into the core curriculum so as to meet the learning and development needs of students. On the other hand, large numbers of teaching professionals in many countries now consider that it is almost impossible for them to teach, and for students to learn, all the content that already features in existing curricula. The fact that this is a widespread view suggests that we should be looking for ways of reducing, rather than increasing, the content of school curricula.

Clearly, then, the problems posed by the loss of meaning of school education cannot be solved merely by adding new content to existing curricula. Rather, we must also analyze and weigh up the relevance and suitability of their current contents, not least because existing curricula at different levels of education are manifestly too broad and unwieldy, which only hampers attempts to improve the quality of education and restore meaning to the experience of school. It is in this context, and under the guise of different terms (core training, basic shared culture, basic skills or abilities, core competencies, core learning, etc.) and from a range of ideological and pedagogical perspectives, that the need to redefine the core components of basic education has come to be seen as an urgent task within contemporary educational thought (Gauhier & Laurin, 2001; Coll, 2004; 2006; Coll *et al.,* 2007). Consequently, it is now accepted that the core curriculum cannot cover everything we would like children and young people to learn, nor, in all probability, what it would be beneficial for them to learn. Choices and decisions need to be made. If we wish to expand upon existing content or add new material to the core curriculum, then other areas will need to be reduced or omitted. Any approach to curricular design that fails to acknowledge this becomes an obstacle to meaningful and useful learning, as well as a source of frustration for teachers and students, not least as it makes it nigh on impossible for them to give meaning to the work they do together in the classroom.

However, and as is clear from the proposals put forward by different authors, commissions, and official bodies, both nationally and internationally, reaching a consensus definition regarding the core components of basic education is far from easy. Or to be more specific, it is relatively easy when the proposal is formulated in generic terms (e.g., in the form

of general objectives or key or transferable competencies), but differences of opinion emerge as soon as we seek to define these objectives and competencies in terms of content, learning experiences or classroom activities.

With the above in mind, let us return to the supposed suitability of competency-based approaches as a response to the challenges posed by the loss of meaning of school education. It is certainly the case that in the context of basic education, competency-based approaches are closely linked to attempts to reform the curriculum and adapt it to the new educational and development needs of students living in an information and knowledge society. The argument is familiar and has been repeatedly set out by authors and institutions in favor of competency-based education (see, for example, Eurydice, 2002; Monereo & Pozo, 2001; NCREL & Metiri Group, 2003; OECD, 2005; Rychen & Salganik, 2000, 2003). As we have seen, however, the challenges we face cannot be met simply by adding or removing content or by shifting the emphasis placed on different aspects. Rather we need to debate and establish a set of criteria which enable us to identify what is truly 'basic' in basic education, and to make decisions in accordance with these criteria.

The question I posed at the beginning can thus be reformulated as follows: Are competency-based approaches a useful instrument for redefining the core components of basic education and for making decisions about what students should learn at this stage, such that school education can regain at least some of its meaning? Before attempting to answer this question, it will be helpful to consider the concept of competence and its main ingredients.

The incorporation of competencies into school education: Origins, scope, and contributions

Competency-based approaches to education and their associated pedagogical proposals clearly dominate the current educational scene and for several years now they have formed the basis for almost all attempts at curricular reform in various countries around the world. However, any careful observer will also note that this dominance goes hand in hand with an enormous range of definitions and uses of the concept of competence. There are undoubtedly many factors at play here, but two in particular are of interest to my argument: the first is the coexistence of distinct traditions in relation to the origin of the concept and its incorporation into the field of education and training; the second is the fact that both the concept of competence and competency-based teaching and learning allow for diverse interpretations and have distinct implications depending on what their proponents regard as the purposes of education and on the psychological and educational theories they draw upon in making their case. I will return later to this second issue, but now let us look briefly at the first.

The introduction of the notion of competence into school education can be linked to at least two distinct traditions. One has its roots in structural linguistics and cognitive psychology, and specifically the notion of *linguistic competence* that was introduced by Chomsky (1965) within the framework of his distinction between *competence* and *performance*. It is not, however, the concept of linguistic competence itself that has had a major impact on school education, but rather its reinterpretation by Hymes (1972) through the notion of *communicative competence*. According to Hymes, Chomsky's notion of linguistic competence cannot explain how individuals come to make effective use of language in a given social context, with specific interlocutors and for specific ends. To achieve this, a person needs to acquire specific communicative competencies (grammatical, pragmatic, discursive, strategic, etc.), all of which may be learned and taught. It is this notion of competence that has been incorporated into formal and school education, initially through mother-tongue teaching, from where it subsequently spread to other areas of the curriculum (mathematical competencies,

science competencies, etc.) and other spheres of human activity (social competencies, emotional competencies, etc.).

However, the introduction of the concept of competence into school education is primarily the result of approaches and proposals whose roots are to be found in a quite different tradition, one originating in the world of work, business, and professional training (De Blas, 2007). At the heart of these approaches lies the progressive substitution of the *logic of qualifications* by the *logic of competencies* that took place in the business world during the final two decades of the twentieth century (Bronckart & Dolz, 2002). The logic of qualifications rests on the principle of a stable correspondence between the demands of a particular job and the type and level of training that is validated by a diploma certifying the bearer's qualification. The fundamental argument in this respect is that in a world characterized by rapid technological, economic, and organizational change, it is impossible to sustain the principle of stable correspondence between qualifications and the demands of a job, since the latter are constantly evolving. Thus, it is argued, it makes no sense to continue to design training programs solely on the basis of the logic of qualifications, in other words, based on a detailed analysis of the specific demands of a given job. Rather, it is more important to identify the competencies that enable workers not only to meet the existing demands of their job but also to adapt quickly and effectively to the inevitable changes in them. It is these competencies, it is claimed, which should comprise the core of training.

This brief account of the concept's origins suffices to illustrate how the notion of competence has distinct meanings in the different traditions in which it is employed, despite their using the same term. For Chomsky, linguistic competence is an innate, universal, and ideal potential that manifests in the performance of language in accordance with the specific characteristics of speakers and the context of production. For Hymes, on the other hand, communicative competencies are not innate but, rather, have to be developed and learned — indeed, they are amenable to educational intervention. In both cases, however, and as Bronckart and Dolz (2002) rightly point out, we are concerned with individual abilities that are projected onto the environment through specific performative acts. By contrast, in those approaches which originate in the world of work the movement is in the opposite direction: beginning with the demands of a job or task, we then infer what competencies are needed to respond effectively to them in a context that is subject to constant change and transformation.

In light of the above, it is not surprising that the concept of competence has been incorporated into school education with a variety of definitions that emphasize different aspects. And the same can be said for the variety of different approaches to competency-based education that are currently to be found within schools. Despite these differences, however, the rapid spread and growing acceptance of the notion of competence suggest that it is tapping into real concerns and deep-rooted intuitions among educational policy makers and professionals regarding how to address the problems and challenges that school education is now facing (Coll, 2007).

Some components of the concept of competence clearly connect with concerns over efficacy and efficiency, the implementation of accounting procedures, how to improve students' performance, and the wish to adapt school-based learning to the training needs of a labor market that has been transformed by the globalization of trade and the economy, by mass migration, and by the emergence of an information society. In this respect it is significant that international or supranational institutions such as the OECD or the European Union have shown considerable backing for competency-based approaches, which have also been quickly and enthusiastically adopted as official policy by educational authorities in numerous developed and developing countries around the world. However, there are also components of the concept of competence (at times overlapping with those implied above) that tap into

ideals and concerns that have traditionally been associated with movements dating back to the beginning of the twentieth century that have sought to transform our approach to pedagogy. I am referring here, for example, to proposals to link learning more closely to everyday life, to move beyond a purely academic approach based upon textbook-led and transmissive teaching, to emphasize the active role of students in their own learning, to ensure the utility and transferability of learning content, and to promote the use of real-life, 'authentic' contexts and activities for learning and assessment, those which are meaningful to students.

The diversity of ways in which the concept of competence has been interpreted likely accounts for the speed with which it has been incorporated into school education, as well as for the ambiguities that characterize its use and the enthusiasm, criticisms, expectations, and distrust that its widespread acceptance has generated. What I wish to emphasize here, however, is that this diversity of interpretations means that we should use the concept carefully, and more to the point, we need to be clear about its scope and limitations.

In my view, there are basically two reasons why the notion of competence is of interest to school education. One is that it provides an original and highly suggestive perspective on a core yet extremely complex aspect of school-based learning, namely the identification, selection, description, and organization of learning content that reflects the goals of education. The other is that it adds important and (relatively) novel nuances to the way in which we understand the learning that we seek to promote through school education. In some form or another, and with varying degrees of clarity, these nuances are reflected in most of the definitions and descriptions of the concept of competence, a small sample of which is shown in Table 1. I will now briefly highlight and discuss some of them.

"A competence may be conceived as a functional and integrated network composed of cognitive, affective, social, and sensorimotor components capable of being mobilized in actions finalized before a family of situations." (Allal, 2002, p. 81)

"[A competence is] an integrated set of abilities that enable a person to grasp spontaneously a situation and to respond to it appropriately." (Bosman, Gerard, & Roegiers, 2000, p. 9)

"[Competence refers to] the necessary prerequisites for successfully meeting complex demands possessed by an individual or group of individuals. The (psychological) structure of a competency derives from the logical and psychological structure of the demands." (Weinert, 2001, p. 62)

"A competence is defined as the ability to meet individual or social demands successfully, or to carry out an activity or task (...) Each competence is built on a combination of interrelated cognitive and practical skills, knowledge (including tacit knowledge), motivation, value orientation, attitudes, emotions, and other social and behavioral components that together can be mobilized for effective action." (OECD, 2002, p. 8)

"Le Boterf (1994) considers competence to be the ability to mobilize a set of cognitive

resources in order to deal with a complex situation. 'Competence does not lie in the resources (knowledge, abilities [...]) that have to be mobilized but, rather, in the mobilization of these resources' (p. 16)." (Perrenoud, 2002, p. 54).
"A competence is defined as the ability to successfully meet complex demands […] through the mobilization of psychosocial prerequisites (including both cognitive and non-cognitive aspects)." (Rychen & Salganik, 2003, p. 43).
"Competence is considered to refer to a combination of skills, knowledge, aptitudes and attitudes, and to include the disposition to learn in addition to know-how." (European Commission, 2004, p. 4)

Table 1. Some definitions of the concept of competence

The use and mobilization of acquired knowledge

The first notable contribution of the concept of competence is the emphasis it places on the *use of acquired knowledge*. From this perspective, being competent in a given sphere of activity means being able to activate and apply relevant knowledge in order to deal with particular situations and problems associated with this sphere. Thus, for example, being able to communicate in one's mother tongue implies, according to the *Recommendation of the European Parliament and of the Council, of 18 December 2006, on the key competences for lifelong learning*,

> "…the ability to express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing), and to interact linguistically in an appropriate and creative way in a full range of societal and cultural contexts; in education and training, work, home and leisure." (*Official Journal of the European Union.* 30.12.2006. L 394/14)

This description clearly highlights two essential features of the concept of competence. The first is that the acquisition and mastery of a complex competence —such as being able to use one's mother tongue to communicate with others — implies the acquisition and mastery of many different kinds of knowledge (knowledge of the different facets and aspects of the language; knowledge of the contexts in which it is used, their characteristics and demands; knowledge of the topic about which one is speaking, etc.) and of various social, communicative, and linguistic skills and abilities (listening, speaking, reading, writing), in addition to the development of certain attitudes towards one's interlocutors and the capacity to adopt the point of view of others and make attributions regarding their aims and intentions. The second is that it is not enough for a person to acquire and master in isolation the different kinds of knowledge, skills, attitudes, and abilities that constitute the 'raw materials' of a competence – in this case, communicating in one's mother tongue. Rather, acquiring and developing such a competence requires of individuals that they learn to use these different

elements in an integrated fashion, *mobilizing* them in response to the communicational demands of different social and cultural contexts.

Both these features are present in all complex competencies, which are also those of most interest for school education. Let us consider a further two examples, in this case relating to mathematical competence and digital competence, which are defined as follows in the aforementioned *Recommendation of the European Parliament and of the Council on the key competences for lifelong learning*:

> "Mathematical competence is the ability to develop and apply mathematical thinking in order to solve a range of problems in everyday situations. Building on a sound mastery of numeracy, the emphasis is on process and activity, as well as knowledge. Mathematical competence involves, to different degrees, the ability and willingness to use mathematical modes of thought (logical and spatial thinking) and presentation (formulas, models, constructs, graphs, charts)."
>
> (*Official Journal of the European Union.* 30.12.2006. L 394/15)

> "Digital competence involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet."
>
> (*Official Journal of the European Union.* 30.12.2006. L 394/15)

The definition in each case clearly reflects not only the range of knowledge and resources (different kinds of knowledge, skills, attitudes, abilities, etc.) implied in the acquisition and development of the corresponding competence, but also the importance of the 'applied' component. Philippe Perrenoud, a leading proponent of competency-based education (Perrenoud, 2000), has elaborated on the *metaphor of mobilization*, coined originally by Le Boterf (1994; 1998; 2000), and contrasts it with the *metaphor of transfer* in order to draw attention to the importance and educational implications of this aspect of the concept of competence. For Perrenoud (2002), the metaphor of mobilization captures better than the metaphor of transfer the long-held aspiration of enabling what is learned at school to be used and applied more widely in other situations and contexts. In his view, the metaphor of transfer suggests a static idea of knowledge, which once acquired can then be carried over to the context or situation in which it is to be used. By contrast, the metaphor of mobilization offers a more dynamic view of knowledge and reflects better the active role ascribed to learners by all contemporary theories of learning. The importance of this distinction lies, according to Perrenoud, in the fact that "mobilizing does not merely mean 'using' or 'applying'; it also implies adapting, differentiating, integrating, generalizing or specifying, combining, orchestrating, and coordinating — in sum, the execution of a series of complex mental operations that, through their connection to the situations [in which they are going to be used], transform rather than simply carry over knowledge" (Perrenoud, 2002, p. 46).

Obviously, there is nothing new about the wish to promote the use and application of what is learned at school, as opposed to a simple act of memorizing. Indeed, the goal of ensuring that school-based learning is both useful and meaningful and that it allows students to tackle new or relatively new situations and solve problems they have not previously

encountered is a core feature of the constructivist approaches to education that have driven educational reforms in numerous countries during the final two decades of the twentieth century. As such, what is novel and original about competency-based approaches to education is not so much the importance ascribed to the functional dimension of learning, but rather the fact that this is given pride of place when considering the *type of learning* that schools should be promoting, which is not a trivial matter. What is more, the dynamic and constructivist view of knowledge application that is reflected in the metaphor of mobilization, whereby using knowledge always and necessarily implies adapting it to the characteristics of a given situation, means, by extension, that every time we use or apply a competence we are at the same time adapting it.

Integrating different kinds of knowledge

A second important contribution of the concept of competence to the way we view school education has to do with the integration of the different kinds of know-how (practical and cognitive skills and abilities, factual and conceptual knowledge, values, attitudes, etc.) that characterize different competencies. As can be seen in the definitions shown in Table 1, the majority of them explicitly assume the existence of different kinds of knowledge or know-how whose acquisition and development rely on relatively specific and differentiated processes. This is why the definition or description of a competence is usually accompanied by a list of the different kinds of knowledge or know-how associated with its acquisition and development. We see this, for example, in the aforementioned *Recommendation of the European Parliament and of the Council on the key competences for lifelong learning*, which establishes for each key competence the kinds of knowledge, abilities, and attitudes associated with it. With regard to digital competence, for instance, the document states:

> "Digital competence requires a sound understanding and *knowledge* of the nature, role and opportunities of IST in everyday contexts: in personal and social life as well as at work. This includes main computer applications such as word processing, spreadsheets, databases, information storage and management, and an understanding of the opportunities and potential risks of the Internet and communication via electronic media (e-mail, network tools) for work, leisure, information sharing and collaborative networking, learning and research. Individuals should also understand how IST can support creativity and innovation, and be aware of issues around the validity and reliability of information available and of the legal and ethical principles involved in the interactive use of IST.
>
> *Skills* needed include the ability to search, collect and process information and use it in a critical and systematic way, assessing relevance and distinguishing the real from the virtual while recognizing the links. Individuals should have skills to use tools to produce, present and understand complex information and the ability to access, search and use internet-based services. Individuals should also be able use IST to support critical thinking, creativity, and innovation.
>
> Use of IST requires a critical and reflective *attitude* towards available information and a responsible use of the interactive media. An interest in engaging in communities and networks for cultural, social and/or professional purposes also supports this competence."
>
> (*Official Journal of the European Union*. 30.12.2006. L 394/16. My italics.)

None of this is totally new. Indeed, we have long been aware, for example, that the processes involved in the meaningful learning of concepts such as 'volume' or 'inflation' are different to those involved in the learning of complex abilities such as summarizing a text or moderating a debate, in memorizing a set of facts such as the names of African countries and their capitals, or in the acquisition and application of values such as solidarity. From the psychological point of view, this is reflected in the distinctions that are sometimes made in the specialist literature between declarative knowledge (the realm of 'know-what') and procedural knowledge (the realm of 'know-how'), although there is as yet no typology that is both widely accepted among specialists and which covers the full range of things that people are capable of learning.

There is also a longstanding awareness of the need to broaden our view of curriculum content, which has traditionally been limited to factual knowledge and conceptual learning. From the educational point of view, this has been reflected in efforts to introduce different types of content into the school curriculum. This has sometimes been done explicitly, establishing a formal distinction between types of learning content, for example, between 'facts, concepts, and theories', 'procedures', and 'attitudes, values, and norms'. Distinctions of this kind can be found in many of the curricula drawn up as part of educational reforms in many countries over the past two decades. Another example would be the distinction made in the 2006 *Recommendation of the European Parliament and of the Council on the key competences for lifelong learning* between 'knowledge',' skills', and 'attitudes', one that has since been adopted by several European countries when devising their official school curricula. On occasion, however, the distinction is not made explicitly. This is the case, for example, in the document produced by the Spanish Ministry of Education and Culture regarding Core Learning Objectives for Primary and Secondary Education (MEC, 2006), although this does not mean that the concern to include different types of learning content is absent.

When it comes, therefore, to the consideration of different kinds of knowledge or know-how as learning content, a continuous line can be drawn between the concept of competence and the educational and curricular approaches that predominated when it was first introduced into the sphere of school education. Consideration of different kinds of knowledge is not therefore what distinguishes the concept of competence and competency-based approaches to education. What is new is the fact that by identifying and defining learning objectives in terms of competencies, we start out by emphasizing the *integrated and interconnected mobilization* of different kinds of knowledge, skills, attitudes, and resources in general, which undoubtedly has important implications for teaching and assessment. This is evident, for example, in the adoption of multidisciplinary or supra-disciplinary perspectives by competency-based approaches. Indeed, insofar as competencies are a response to complex demands and challenges, they usually imply the mobilization of a wide range of resources pertaining to different areas of knowledge and experience, and consequently they cannot be addressed solely from one particular subject or discipline. This is especially the case of what are regarded as key or transferable competencies, although domain-specific competencies invariably also require the mobilization of knowledge and experiences that go beyond the confines of a single academic discipline or area of the curriculum, not least when they refer to the demands and challenges that individuals face in relation to social practices.

The importance of the context in which knowledge is acquired and applied

Another way in which the concept of competence contributes to our view of school education concerns the importance ascribed to the context in which competencies are acquired and subsequently applied. This is reflected in the reference to "a full range of societal and cultural contexts" in the aforementioned definition of competence in one's mother tongue, in the

allusion to the "confident and critical use of Information Society Technology (IST) for *work, leisure and communication*" in the case of digital competence, and in the ability to "solve a range of problems in *everyday situations*" in the description of mathematical competence.

Both in these examples and the definitions listed in Table 1, the emphasis is on the complex demands and challenges that people encounter in diverse spheres of everyday life, as well as on the different kinds of individual resources (cognitive, social, and attitudinal) that are mobilized in order to respond adequately or effectively to them. These two facets of the concept of competence mean that competencies may be classified according to either the nature of the resources that are mobilized or the kind of demands and challenges that we encounter in different spheres of our everyday lives (family, work, leisure, training, friendships, health, etc.). In seeking to develop these typologies, however, we come up against a problem of weighting, since neither is psychology able as yet to provide us with a sufficiently detailed and agreed classification of psychosocial resources, nor can sociology yet offer a systematic classification of the different kinds of demands and challenges we are likely to face in our daily lives.

These difficulties aside, however, what I wish to underline here is that in accordance with the majority of definitions and descriptions of the concept, competencies cannot be understood in isolation from the activity contexts in which they are learned and applied. This feature of the concept of competence, which is consistent with the tenets of situated cognition, has important implications for school education. For example, whereas educational and curricular approaches based on the acquisition and development of general content or abilities highlight the need to teach students to transfer, apply or generalize their knowledge to contexts other than the one in which it was acquired (the metaphor of transfer), competency-based approaches insist on the need to use different learning contexts (the metaphor of mobilization) in the acquisition of competencies. Furthermore, the criteria used to determine what constitutes an 'adequate or 'effective' execution of a given competence also depend on the context, since what is adequate or effective will inevitably be shaped by the demands or challenges that are being faced, which even within the same sphere of activity may vary considerably depending on the presence or absence of certain contextual elements or the influence of other factors.

Towards a constructivist, sociocultural, and situated view of competencies and of competency-based approaches to education

The various ingredients of the concept of competence that I have described above, and which in my view are potentially of considerable interest and relevance to school education, are, however, open to interpretation. As I noted at the outset, there are various definitions of the concept, each with its own emphasis and nuances, and thus there is both a lack of terminological clarity and heterogeneity of theoretical frameworks. Or as Weinert puts it when reviewing the theoretical approaches and proposals on which the concept of competence is based: "there are many different theoretical approaches, but no single common conceptual framework" (Weinert, 2001, p. 46). Thus, depending on the theoretical approach that is used when incorporating the concept of competence, the four aspects I have highlighted above (i.e., the mobilization of resources and know-how, their interconnection and integration, the contextual and situated nature of the processes of acquisition and application, and the importance of effective action or execution) may each be interpreted in different ways, be ascribed varying degrees of relevance, and be employed in support of a range of educational and curricular decisions. In other words, the expression 'competency-based approaches to education or teaching' is in no way synonymous with a homogeneous and consistent set of

proposals. Indeed, the expression may refer to quite different approaches, both in terms of their structure, core components, and curricular content, as well as with regard to the learning processes on which they are based, their purposes and objectives, and the educational practices they promote.

Behaviorist or neobehaviorist interpretations of competencies, for example, give rise to competency-based approaches in which the component of effective action or execution is seen as decisive (Jonnaert *et al.*, 2006), which leads in turn to curricular proposals that emphasize expected learning outcomes and the establishment of achievement standards as benchmarks. It should be noted that the behaviorist view receives strong support from the fact that competencies are not directly observable, and hence some kind of indicator is required for their appraisal. Indeed, as we saw when discussing the component of effective performance, competencies are always manifested through a person's behavior or actions in relation to the demands or challenges of a situation. Consequently, both the resources that are mobilized and the competence itself (the latter defined as the ability to act effectively by mobilizing adequate resources) can only be accessed by considering a student's performance, that is, how he or she behaves and acts in the face of certain demands or challenges. It makes no sense, therefore, to refer to a competence without at the same time considering its correlate in terms of 'competent action' or performance. This is why competency-based approaches to education are approaches that also ascribe great importance to expected learning outcomes, expressed in terms of what students 'should be able to do'.

When a competence relates to demands or challenges that may appear in a wide range of situations, as occurs in the case of key or transferable competencies (recall the earlier examples about communicating in one's mother tongue, or mathematical and digital competence), it is possible and even desirable to describe the performance component in more general terms. However, when competencies are domain-specific and linked to a more limited area of knowledge or experience, or when it is necessary to assess students' learning outcomes, then it is essential to define specifically what the performance component should entail. When this need occurs within the framework of a behaviorist interpretation of competencies, the performance component can be defined in terms of discrete, observable, and measurable behaviors, and hence the competencies may appear to be formulated in a way that is very similar to a set of operational objectives.

As or even more common than behaviorist interpretations of the concept of competence and their associated approaches to education are those inspired by the cognitive perspective. Contrary to the behaviorist view, cognitive interpretations tend to place greater emphasis on the skills and abilities that enable people to acquire and use their knowledge effectively in response to the demands and challenges of the activity contexts in which they participate. Hence, cognitive approaches to competency-based education generally ascribe considerable importance to the cognitive or cognitive-motivational resources that mobilize competencies. Consequently, although, like behaviorist approaches, they focus on students' learning outcomes, they do so more in terms of the *ability to act in a competent way* rather than by defining the characteristics or behaviors that correspond to competent action.

As in the previous case, the emphasis on skills as essential ingredients of competencies does not pose a particular problem when the focus is on key or transferable competencies, which by definition refer to demands or challenges that are present in a wide range of situations and, therefore, require a more general and transcontextual formulation. Once again, however, difficulties arise when it is necessary to specify the nature of these competencies so as to promote their acquisition and development in the classroom, when they have to be assessed, or when we seek to formulate specific competencies linked to more limited areas of knowledge and experience.

There are three typical responses to the need for a more precise definition of competencies expressed in terms of skills. The first is simply to ignore the need for greater precision, the argument being that this would devalue the curriculum and students' learning. The second consists in defining the actions or behaviors that may be considered valid indicators of the acquisition and mastery of a given competence. This gives rise to hybrid curricular proposals, insofar as they have two levels and two views — to some extent contradictory — regarding the definition of expected learning outcomes. On the one hand, these hybrid proposals employ labels such as 'general competencies', 'transferable competencies', 'key competencies' or 'core competencies' in order to define students' learning outcomes in a more general way, expressing them in terms of competencies/skills. On the other hand, however, they specify what the performance of these competencies should entail through reference to observable indicators and by using formulations that are very similar to those which feature in competency-based approaches inspired by behaviorist interpretations of competence. Finally, the third response to the need to clarify the skills implied by a given competence involves specifying the various kinds of resources (especially the different kinds of knowledge and know-how) that must be acquired, mobilized, and integrated in order to perform or act competently in given situations or when faced with certain problems.

Competency-based approaches to education that are inspired by the cognitive perspective and which respond to the need for specification via either of the first two ways described above (or via one of their many variants) fail to take advantage of the innovative potential that competencies have in the context of school education. Defining competencies in terms of general or specific cognitive abilities deprives, in my view, the concept of competence of much of its interest and potential as an instrument that can bring innovation and improvements to school education. On the one hand, it reduces competencies to some of their components, overlooking other equally crucial ingredients of the concept. On the other, it serves to reinforce the terminological confusion that characterizes pedagogical discourse on competencies, insofar as it treats the terms 'competencies' and 'skills/abilities' as synonymous, when in fact they have distinct psychological and educational meanings. Undoubtedly, both general cognitive abilities and those linked to more specific areas of knowledge and experience are of considerable relevance to school education and they play an important role in competency-based approaches to learning. However, they are in no way synonymous with competencies, even though they form part of them insofar as they are one of the resources that usually serve to mobilize competencies. I would argue, therefore, that it is inappropriate to use the term 'competencies' to refer to what we have traditionally called 'abilities' or 'skills'. Neither should we speak of competency-based approaches to education when what we have in mind are what until recently were referred to as skills-based approaches to teaching.

By contrast, competency-based approaches that are inspired by the cognitive perspective but which respond to the need for specification via the third alternative described above have, in my view, greater merit as they are closer to a constructivist, sociocultural, and situated interpretation of competencies (Jonnaert *et al.*, 2005; Masciotra, 2005). Although this interpretation addresses all four of the ingredients of competence that I earlier argued were essential, it ascribes particular importance to one of them, namely the context in which competencies are acquired and used. The reasoning is simple, but the implications for school education and competency-based teaching are wide ranging. The basic idea is that the roots of competencies are not to be found in the individual mind, but rather in a person's participation in certain sociocultural activities and practices, and in order to be effective (i.e., in order to respond to the expectations of other participants) this participation must mobilize and integrate a diverse range of resources, both internal (aptitudes, knowledge, skills and abilities, attitudes, and values, etc.) and external (materials, technical and symbolic artefacts, the help

of other people, etc.).

Thus, if we consider once more the example of digital competence, one of the key competencies established by the European Parliament and Council, its roots must be sought in sociocultural activities and practices that involve the use of information and communication technologies (ICTs), and more specifically in the challenges that individuals face with regard to their effective participation (i.e., participation that meets the expectations of other participants) in these activities and practices. A similar point can be made about the other key competencies I mentioned earlier. The roots of competence in one's mother tongue are to be found in the sociocultural activities and practices that require the use of this language in order to participate effectively in them, not in the properties or characteristics of the language itself or in the cognitive or cognitive-linguistic skills that are necessary for using it, even though these aspects must also be taken into account when seeking to promote students' learning of this competence. Likewise, the roots of mathematical competence must be sought in the sociocultural activities and practices that require the use of mathematics in order to participate effectively in them, not in the nature of mathematical knowledge or in the skills and knowledge that are necessary for doing so, even though it is of course essential to take these aspects into account in order to help students acquire and develop this competence.

This interpretation of the concept of competence enables us to approach in a completely different way the problem of definition and specification, one that all curricular proposals which seek to have an impact on school education must face, regardless of whether they are based on competencies. Indeed, beyond the generic formulation of key competencies, which have undoubted value as general guidelines and benchmarks, the curriculum requires definition and specification if it is to fulfil its function as the expression and guarantor of educational objectives and as a guide for teachers. In the constructivist, sociocultural, and situated interpretation of competencies, this specification implies identifying and selecting the sociocultural activities and practices in which it is considered important for students to be able to participate effectively.

Thus, digital competence will be specified in terms of the various sociocultural activities and practices in which participation requires the use (or most likely a range of uses) of ICTs: for example, searching databases for information; checking the reliability of information obtained via the internet; using ICTs to bolster the presentation of ideas and arguments; comparing opinions, points of view or ideas with others; working collaboratively online; using different formats to present and represent a set of data or different phenomena or processes; expressing feelings and emotions through different languages and formats; making comparisons and drawing inferences by applying data processing techniques, etc.

Obviously, identifying and selecting the sociocultural activities and practices in which students should learn to participate is merely the starting point when specifying the educational goals of a curricular proposal based on competencies and inspired by the constructivist viewpoint. Having done so, the process of curricular design would then require us to specify the other core ingredients of competencies: what do we mean, in the context of these activities, by effective participation and competent performance? What resources, both internal (aptitudes, motivation, knowledge, skills, abilities, values, attitudes, habits, etc.) and external (materials, artefacts, help, etc.), need to be acquired, mobilized, and integrated in order to achieve this? In summary, in a constructivist approach to competency-based education there are at least three elements which need to be specified:

In my view, this interpretation enables us to retrieve and take advantage of the transformational and innovative potential that the concept of competence has in the context

of school education. However, and as is probably always the case with novel and powerful educational proposals, the potential of the concept of competence, defined in constructivist terms, lies more in the kind of questions that it helps us to formulate, in the way it allows these to be formulated, and in where it suggests we look for solutions, rather than in any concrete solutions that the approach itself may offer. In the final section of this paper, therefore, I will seek to justify — briefly and drawing on the considerations and arguments discussed so far — my view regarding the extent to which competency-based approaches are capable of meeting the challenges arising from the loss of meaning of school education. These challenges may be expressed in the following question: Are competency-based approaches a suitable instrument for redefining core curriculum content and for deciding what students should learn during the course of their basic education?

Competency-based approaches to education and decisions about core curriculum content

As I stated at the outset, there are two strands to my argument. On the one hand, I believe that competency-based education could be a good instrument for meeting these challenges. However, I also consider that it generally isn't because it most often reflects a superficial and confused conceptualization of competence. The analysis I have presented suggests that by defining learning outcomes in terms of competencies, and above all by describing these in terms of the integrated mobilization of the internal and external resources that learners need in order to participate competently in meaningful and relevant sociocultural activities and practices, competency-based approaches do, in principle, provide a suitable framework for helping students to attribute meaning to their school education.

However, and as I have argued, competency-based approaches to education tend to interpret the concept of competence in ways that undervalue the importance and implications of one or more of its main ingredients, thus undermining its considerable potential as a transformative and innovative tool. As a result, many of the proposals put forward as examples of competency-based approaches to the curriculum are limited to establishing certain key or core competencies that are transferable and defined in very general terms, and either they stop at this generic level or, in attempting to introduce greater specificity, they do so using a superficial and biased interpretation of the concept of competence. When, at times, this interpretation leads to behaviorist or neobehaviorist proposals, the specification involves the establishment of performance or achievement indicators that are remarkably similar to the operational objectives and outcomes of objectives-based education. When, by contrast, the interpretation is inspired more by the cognitive perspective, specification is introduced by matching abilities to blocks of content that are progressively more delimited, thereby giving rise to curricular proposals that, while presented as if they were based on competencies, are extraordinarily similar to the skills-based curricula which have dominated during the last two decades of the twentieth century — and which, in my view, continue to do so under the new but inaccurate label of competency-based education. Neither of these more superficial interpretations of the concept of competence offers us useful clues as to how we might go about redefining the core curriculum, which as I have argued is one of the keys to meeting the challenges derived from the loss of meaning of school education.

Does the same apply to those competency-based approaches that pay equal attention to the core components of the concept of competence and which begin by identifying and selecting the sociocultural activities and practices in which competencies will be applied? The answer here is more nuanced. On the one hand, it seems fairly obvious that by basing our decisions regarding what students should learn and be taught on the identification of relevant and meaningful sociocultural activities and practices in a given historical, social, and cultural

context, we are obliged to adopt a more flexible view than is imposed by the logic of the scientific and academic disciplines from whose perspective the design of the school curriculum has traditionally been approached. All of us who have been involved in whatever way in attempts to revise and update the curriculum will have observed on numerous occasions how subject specialists, how we, tend as specialists to consider the contents of our own discipline as essential and unrenounceable. In this respect, an approach that considers the resources which students need to become competent participants in the sociocultural activities and practices which have been identified and selected as relevant and meaningful may clearly help us to move towards a better and more precise definition of the core components of basic education.

It must be acknowledged, however, that even if we accept that the roots of competencies are to be found in relevant and meaningful social activities and practices, we are merely reformulating the question about the core curriculum in different terms, albeit ones that are more interesting and promising. As such, we are still faced with the problem of deciding which sociocultural activities and practices are relevant and meaningful (or are more relevant and meaningful) from both the individual and social points of view, and therefore which of them should be regarded as crucial to students' education. If we consider, for instance, the enormous range of sociocultural activities that require us to use our mother tongue, which ones will we select in order to ensure that by the time they complete their basic education students have acquired the skills and knowledge necessary to become competent participants in these activities? Obviously, the same question applies to the enormous range of situations that require the use of mathematics, and to the growing number of contexts that depend inherently on the use of ICTs.

In my view, these are the questions that underlie the challenges we face as a result of the loss of meaning of school education. Competency-based approaches inspired by a constructivist, sociocultural, and situated perspective allow us to consider and address these challenges in a more novel and, I would argue, more interesting way than is possible through alternative perspectives. However, the answers are not to be found in competency-based education itself. Rather, the answers to these questions are to be found in the debate and the search for consensus regarding the kind of society we wish to construct, about the model of the individual we wish to promote. This debate leads us towards the ethical, moral, ideological, and political dimension of education, one which — more often than is desirable — certain interpretations of the concept of competence and an appreciable number of competency-based approaches to the curriculum either conceal or seek to conceal behind a false mantle of technical jargon.