

CURRICULUM CHANGE AND
COMPETENCY-BASED APPROACHES:
A WORLDWIDE PERSPECTIVE

FROM COMPETENCE
IN THE CURRICULUM
TO COMPETENCE IN ACTION

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Abstract

The article begins by drawing a distinction between the concepts of “curriculum” and “programme of study”, and goes on to show that curriculum reform involves much more than simply rewriting programmes of study. The reforms that are presently sweeping across education systems throughout the world qualify, in many cases, as true paradigm revolutions, given the magnitude of the transition from an objectives-based to a competency-based pedagogy. The authors discuss the complex nature of a situated approach to competence by exploring the theoretical foundations of a number of contemporary perspectives: situated action/cognition, distributed cognition/intelligence, collective

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intelligence and enaction. The value of a situated approach to competence is that it goes beyond an objectives-based pedagogy, while at the same time incorporating the best of what it has to offer.

Introduction

The present text highlights the distinction between competence as conceived in the curriculum and the notion of a person in action and in situation (Masciotra, Roth & Morel, 2007). A curriculum approach to competence is necessarily technical, and furthermore is often simply a matter of programme revision or updating. By contrast, when competence is viewed in terms of the dialectical relations of a person in action and in situation, its multifaceted meanings emerge and provide a wide panorama on the real issues facing present-day reforms. If curriculum debates remain entrenched in the praxeological and technical concerns of programme development, educational reforms stand little chance of initiating any real innovation in the school or the classroom.

Serious reflection on the foundations underlying the notion of competence must go beyond traditional definitions and fruitless disputes if it is to guide educational reform in the medium and long term. This text provides a basis for such reflection and discussion. A well-grounded understanding of the nature of competence affects the entire education system, from its inclusion in the curriculum to its application in the classroom, and engenders considerable turmoil. The world of education is in the throes of a major paradigm shift, of which many of the major players have barely arrived at the threshold.

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The first section delineates the concepts of curriculum and programme, as they are employed throughout the text. The second section focuses on competence as an organizing principle for programmes of study, where it serves, along the lines of Gillet (1998), as a praxeological concept. The following section shows that introducing the notion of competence, even from a praxeological perspective, engenders such an upheaval that it constitutes a veritable paradigm revolution in the world of education as it undergoes the arduous transition from an objectives-based to a competency-based pedagogy. Curriculum reform, it is argued, involves much more than the mere re-design of programmes. Finally, moving beyond issues of curriculum, the text explores the concept of competence from the theoretical perspective of enaction. Researchers at the Observatoire des réformes en éducation (ORÉ – Observatory of Educational Reforms) demonstrate, using their own arguments, the richness and complexity of a *situated approach to competence*.

Curriculum and programmes of study: what is their relationship?

Before proceeding any further, it is important to distinguish and clarify the nature and respective functions of a curriculum and a programme of study, since both concepts play a crucial role in the first few sections of this article. The perspectives developed in this text are those adopted by the Observatoire des réformes en éducation (ORÉ) at the Université du Québec à Montréal (UQÀM) (Lafortune, Ettayebi & Jonnaert, 2007).

“Curriculum” and “programme of study” are distinct concepts, although they are often used interchangeably. Such indiscriminate usage engenders considerable theoretical and practical confusion, both at the level of programme development and at the level of classroom implementation. The two concepts, however, are not entirely unrelated. The curriculum is prior to its programmes, and it serves, among other things, to specify the orientations that the latter must adopt in defining their teaching/learning content. In general, a curriculum performs three main functions: (1) to adapt the education system to the current educational needs of society; (2) to guide the actions that must be undertaken in its implementation and (3) to develop an operational action plan at both the educational and administrative levels of the education system (Jonnaert & Ettayebi, 2007).

A curriculum is thus much broader in scope than a programme of study and usually includes a number of programmes. In fact, “programmes of study provide information that is useful for developing teaching, learning and evaluation activities that are consistent with the prescribed curriculum. It is through its programmes that a curriculum becomes operational in the classroom” (Jonnaert & Ettayebi, 2007, p. 25). The prescribed curriculum determines the format of the programmes, as well as the methods for selecting and organizing their content. Accordingly, there is a hierarchical relationship between the curriculum of an education system and the programmes that are based on its orientations. For example, the Quebec curriculum prescribes a *competency-based orientation* for the development of programmes. In order to respect this orientation, all the programmes in adult general basic education, to cite but one example, provide the

teacher with “a group of resources that support the development of those competencies required by adults to deal with their real-life situations effectively” (MELS, 2005, p. 19).

The close relationship between a curriculum and its programmes of study ensures the internal coherence of each of the programmes and the inter-programme coherence that gives uniformity across the curriculum. Discussion and a solid understanding of the orientations underlying a curriculum on the part of all educators are the crucial preliminary steps to any considerations of programmes of study.

Competence as an organizing principle of the curriculum: a praxeological concept

The concept of competence has assumed a central place in the curriculum reforms that are currently sweeping across the world (Braslavsky, 2001). While the use of this concept in curriculum studies is relatively recent, competencies have been addressed by a number of different disciplines for several decades. For example, as far back as the 1970s, linguists, in reaction to Chomsky’s (1965)² distinction between linguistic competence and performance, began to focus their attention on the concept of *communicative competence*, a much wider and more dynamic notion than that of linguistic competence (Morel, 2007). In ergonomics and workplace psychology, competence was used to analyse operators at their workstations (Theureau, 2004). Other disciplines appealed to the concept in both theoretical and empirical studies, such as the recent work on vocational didactics (Jonnaert, 2002; Jonnaert et al., 2006). Its entry into the educational domain is more recent, especially from a curriculum perspective. The application of this polysemic concept in education necessarily engenders a certain number of problems (Jonnaert, 2002; Jonnaert & Masciotra, 2004; Jonnaert et al., 2004).

Organizing principles of a curriculum,³ such as the *notion of competence* or *objectives*, are a function of how they are understood by those responsible for an education system. Thus, the notion of competence can have interpretations that vary from one region to another. In order to fully grasp the notion, it is important to understand *how it is defined* in the official documents of a curriculum and *how it is applied in the programmes of study*.

If the curriculum prescribes the notion of competence as its *organizing principle*, then programmes must use *situations* as their point of departure. This is because competence necessarily develops in situation. People cannot develop their competence *outside of a situation* and then expect to apply it in some situation or other in the future. For example, people who learn a foreign language outside of any communicative context will have great difficulty using what they have learned (vocabulary, irregular verbs, rules of grammar and syntax, etc.) in real communicative situations. Thus, prescribing the notion of competence as the organizing principle of the curriculum even affects the content of its programmes. The resources and activities identified in the programmes constitute responses to the following questions: *What actions does a competent person undertake in these situations?* and *What resources does a person need in order to act competently in these situations?* In this case, the resources identified in a programme are those required to deal with a circumscribed set of situations.

The relation between the resources prescribed in programmes and the situations to be dealt with is *praxeological* (Gillet, 1998), insofar as it has been determined that it is really these

resources that are pertinent to these situations. In this case, situations are primary, and the resources to be prescribed in a programme can only be determined on the basis of a situational analysis. It hardly makes sense, therefore, to write programmes by first specifying a list of resources and only then asking in which situations these resources might eventually be used.

At this level, then, there is a need for a real change in the relationship to knowledge, first on the part of programme designers and then on the part of teachers. The adoption of competence as the organizing principle of a curriculum involves a number of steps in order to ensure that the logic inherent in the concept of competence is respected throughout the education system, from the orientations adopted by the curriculum to their implementation in the classroom through the mediation of the programmes of study. The first step is to identify a range of situations and then to group them into classes of situations in *the exit profiles*. The exit profiles in a competency-based curriculum specify the classes of situations that learners must be able to handle competently by the end of their education. Depending on the type of education, these classes of situations are identified either on the basis of the real-life or work-related situations of the target population or on the internal logic of the discipline in question. Defining the exit profiles is thus preliminary to identifying the resources required to deal with the situations (Jonnaert, 2003). Until now, the traditional process of curriculum development according to an objectives-based pedagogy has been the reverse. School subject matters are identified first, in and for themselves. Situations have no place in objectives-based programmes; they are considered to pertain to teaching matters (Brousseau, 1998; Roegiers, 2003), not to the curriculum.

For the researchers at ORE, the use of competence as an organizing principle in the curriculum necessarily entails the use of situations as the point of departure. This approach is essentially *praxeological* because it helps learners to understand what they learn in terms of the situations that they explore with others in the classroom. The impact of prescribing competence as an organizing principle extends far beyond the design of programmes; it affects the practices of teachers and concomitantly the activities that the learners are engaged in. In other words, its primary purpose is to make school learning *meaningful* for the learners, an aspect that has been conspicuously absent for a long period of time. In short, *the choice of competence as an organizing principle of the curriculum is a way to bring real life back into the classroom*.

Up until this point, the concept of competence has been considered in its absolute sense. However, *actual competence* and *virtual* (or *referential*) *competence* are associated with different epistemological frameworks. The following section provides a brief review of this distinction.

Two levels of competence: actual competence versus virtual competence

Actual competence refers to the competence that a person develops in action in order to adapt to situations, whether these are teaching/learning situations, real-life situations or work-related situations. “Actual competence is the result of all the actions that a person undertakes by mobilising and using a group of resources in order to handle a situation in

which he/she is involved.” (Jonnaert & Masciotra, 2007, p. 68). An external observer can describe what someone does in situation, his/her *actions*, as well as the *resources* he/she uses to act. The observer can also describe his/her understanding of how the situation evolves by responding to a series of questions: *Does the person handle the situation competently? Was he/she successful in handling the situation? Is the person satisfied with the way he/she handled the situation?*

The actual competence (AC) of a person (P) in a situation (Si) is a function of:

- the *comprehension* that the person has of the Si: (Co);
- the person’s degree of *involvement* in the Si in order to achieve certain *goals*: (In);
- the person’s *internal resources* (cognitive, dispositional and physical) that are useful in dealing with the Si: (IR);
- the *external resources* (material, social and spatiotemporal), inherent in the situation and the context, that are useful in dealing with the Si: (ER);
- the person’s *action possibilities* that are constrained by the Si and the context: (AP);
- the person’s *critical reflection* on his/her own actions and their results: (CR).

$$(AC/P) * Si = \{Co \times In \times IR \times ER \times AP \times CR \times \dots\}$$

A person’s actual competence in situation is thus a function of *the combination of a series of factors that evolve in situation* and that usually cannot be predicted beforehand. Defining actual competence would require, first and foremost, a thorough *description of the situation* in which the person is immersed. The external observer would then have to examine the whole process that the person used to deal with the situation in order to uncover the factors that are identified above. At the very least, the observer would need to consider all the *actions* that the person undertook in the situation and the *resources* he/she used. A description of actual competence is thus made after-the-fact and takes into consideration all the factors that an observer uncovers during the observation. *Actual competence is thus competence in action and in situation.*

By contrast, *virtual competence* is only a hypothesis (a *virtuality*) formulated in an educational programme and indicates how a person could potentially handle situations with competence if he/she appropriates a certain number of resources prescribed by the programme. *Virtual competencies* are thus part of the process of *writing* an educational programme. They “are codified and described in a reference framework of competencies [...]. They universally apply to all adults and not to the person as an individual. The function of this type of competency is to identify, define and organize a set of resources in a programme of study” (MELS, 2005, p. 28).⁴ In a programme, virtual competence serves to identify a series of actions and resources that could be useful for dealing with the situations and the classes of situations prescribed in the exit profile. It thus designates the potential actions and resources that people in those situations may appeal to.

The above distinction is related to the distinction between the *intended* or *official curriculum* and the *implemented curriculum*.⁵ In this regard, it is interesting to note that the English literature on this subject also uses the terms *planned curriculum* and *enacted curriculum* to refer to this distinction, which corresponds to the distinction between virtual competence and actual competence as articulated by the researchers at ORE.

Having clarified the distinction between virtual and actual competence, the remainder of this article focuses on *actual competence*.

The concept of competence from different perspectives:⁶ situated, distributed, collective and enacted

Turning their attention away from curricular issues, researchers at ORÉ (Barrette, 2006; Masciotra, Jonnaert & Daviau, 2006b; Masciotra, Roth & Morel, 2007) examined the concept of competence in the light of several related perspectives: *situated action* (Suchman, 1987), *situated cognition* (Lave, 1988), *distributed cognition* (Perkins, 1993), *distributed intelligence* (Pea, 1993), *collective intelligence* (Lévy, 1997) and *enaction* (Varela, 1989; Masciotra, Roth & Morel, 2007). All of these *active and situated* approaches focus on studying the person in action and in situation. The ideas associated with each of these approaches have been adapted and linked together coherently to shed light on the concept of competence. But, before exploring these different theoretical foundations of competence, the very notion of learning must first be redefined as a way of introducing the orientations that have influenced our own reflection.

A PRELIMINARY INVESTIGATION OF LEARNING IN PRACTICE⁷

Using situations as the point of departure involves referring to the experiences of learners in situation, that is, both in the classroom and in everyday life. The everyday practice of a person in situation is intimately linked to the development of his/her actual competence. The notion of *situated cognition* (Lave, 1988, p. 1) suggests a way of thinking about learning as “a nexus of relations between the mind [of the whole person in action] at work and the world in which it works” and highlights the *dialectical and situated nature of learning*. In other words, learning is not exclusively the domain of cognition, but rather involves much more. Cognition is *distributed*, not only through the whole person, but also to the resources that he/she uses, his/her activity, other people, and the circumstances of the situation and the context in which he/she acts. For example, in a situation of writing a text and learning how to use a word-processing programme, the actions that writers engage in, the software and computer that they use as well as a whole range of other resources are not all cognitive in nature. Or, put another way, is it possible to learn how to play a musical instrument without being in a situation of playing music with that instrument? In short, this view of learning highlights the intimate relation between the person, the situation and the resources used to deal competently with that situation. In this way, a person gradually constructs his/her own world. Each person, furthermore, has a unique understanding of his/her situations and hence of the world in which he/she lives. For example, the same landscape viewed at the same time from the same angle does not have the same meaning for an artist, a woodcutter or a shepherd. Each of them constructs the landscape according to his/her own actions and experiences of it: the artist in terms of the evolving canvas, the woodcutter in terms of the tree to be felled, the shepherd in terms of the herd that is being taken to pasture. Fully engaged in action and in situation, each of these three people constructs his/her world differently, even if the

landscape appears to be identical for all of them. Piaget has already claimed that knowledge is action. But, in fact the whole act of learning, in which the person is no longer conceived as distinct from the situation he/she constructs, is a process of *knowing in action* and *transforming the world* (Barrette, 2006). The act of learning thus depends on the relation that individuals as social actors consciously maintain with their lived-in world. *Practice* and *experience in situation* (Barrette, 2006) are essential conditions for learning and the development of competence, both of which are necessarily situated.

SITUATED COMPETENCE

A competency is developed and exercised, modified and evaluated in situations. A competency is necessarily *situated*, that is a truism, and the resources that it engages are equally *situated*. This idea is part of the perspective on *situated action* as articulated by Suchman (1987). Proponents of this perspective maintain that all action is grounded in a situation, outside of which it would no longer have the same meaning. The term *situated* indicates that the activity of a person derives its meaning *from within the situation and context in which it unfolds*. Competence, however, is also distributed.

DISTRIBUTED COMPETENCE

Situated cognition, insofar as it refers to the whole *being-in-situation*, is also *distributed*. Psychology studies the *being*, what Perkins (1993) refers to as the *person-solo*, and neglects the *in-situation* dimension of the person. Taking as his point of departure Pea's (1993) work on distributed intelligence, Perkins (1993) introduces the notion of the *person-plus*, the 'plus' referring to the elements of the person's immediate surroundings, which include physical, social and spatiotemporal resources. While these may well be considered as external to the individual, they are nonetheless part of the person's cognition insofar as they serve as resources for action. Cognition is thus distributed through all of these resources. For example, when a person takes minutes at a meeting, cognition is distributed to the notepad and the notes as well as to the person's memory. "The residue left by thinking – what is learned – lingers not just in the mind of the learner, but in the arrangement of the surround as well, and it is just as genuinely learning for all that" (Perkins, 1993, p. 90). If the environment is part of cognition, the same applies to intelligence (Pea, 1993): *intelligence does not belong only to the individual; it also resides in the tools that a person uses and the experiences that he/she shares with others*. Shared experience is a matter of collective competence.

COLLECTIVE COMPETENCE

Collective competence is the property of a group of people who are concerned by a common situation. A *collective competency* is not the sum of individual competencies. In fact, the group can impair or even impede the development of a collective competency (Lave & Wenger, 1991). Lévy (1994) compares the chaotic competencies of spectators in

a crowd to the spontaneous synergy generated by the collective competencies of the players on two opposing teams in a match.

Lévy (1994) illustrates crowd behaviour by referring to the behaviour of fans at a sporting event, where everyone is yelling more or less the same thing at the same time. In such situations, it is difficult to distinguish the actions of different individuals or to perceive any coherent or memorable links between them. The individual fan becomes lost in the disorderly mass of supporters. A crowd displays a low level of collective intelligence. This is not the case, however, when two opposing teams encounter each other in a game. Here, the field constitutes the meeting ground of the respective collective intelligences of the two teams, each of which emerges from the harmonious and strategic relations among the individual competencies of the players. On the field, as opposed to what happens in a crowd, each player's moves are distinct from those of the other players, but all their actions are co-ordinated, responsive and meaningful with respect to each other.

Evidence of collective enaction is particularly noticeable in certain large groups, such as a symphony orchestra. The violinist, the pianist and the clarinetist – they all have individual competencies as musicians. The symphony emerges in action from the collective competence of all the musicians as they co-ordinate their playing. Competence or “collective intelligence is not a communal hodgepodge of individual intelligences, but rather the recognition and mutual reinforcement of unique intelligences” (Lévy, 1995, p. 25). The notion of the *classroom* as a *community of practice* (Lave & Wenger, 1991; Wenger, 1998) highlights the collective and shared aspects of competence.⁸ In such a community, the individual and collective competencies develop through, among other things, the participation of the members in the shared practices of a social group. A community of practice is *organized around* what, for its members, constitutes *recognized, shared* and *meaningful practice* (Wenger, 1998). Learners' access to the practices of a community promotes the development of individual and collective competencies. But whether individual or collective, all competence develops in situation.

ENACTED COMPETENCE

Competence pertains to a person-in-situation. Situations are occasions for individuals to enact themselves, to be fully engaged through their action possibilities. Being competent means doing something in a field of action. A person is *competent in action*. A juggler is competent because he/she becomes a juggler in the very act of juggling, in which the balls and other objects also participate. The actions of the juggler and the motion of the balls constitute the *person-in-situation*, and together they form a complex system of structural coupling that Varela (1989) calls “enaction”. In this *structural coupling*, the mind and the world are inseparable: they do not oppose, so much as mutually compose, each other. Competence in juggling is enactive because the juggler is fully engaged in action and in situation and invests the act of juggling with its reality. As is the case with action, cognition and intelligence, competence functions in situation, and is therefore at once *situating and situated*.

Competence, then, can only have meaning in action and in situation.

A praxeological perspective on competence: a veritable paradigm revolution

Introducing the notion of competence into the curriculum from a praxeological perspective involves a radical transformation, which precludes basing reforms on hybrid models or compromising between *objectives-based* approaches and *competency-based* approaches. Such change obviously affects the identification and organization of learning content in programmes of study. But, a praxeological perspective also entails a reversal in the chronological order of the steps typically involved in school learning. The very nature of competence, in fact, implies that the only way a person can construct and develop competence is by using it in situation. By way of contrast, objectives-based pedagogy assumes that learners begin by acquiring knowledge and only later, if at all, do they apply their knowledge in situations specifically designed to this effect.

A curriculum that prescribes competence as an organizing principle for its programmes of study turns the traditional objectives-based approach to curriculum and pedagogy on its head, with the result that the criteria of objectives-based pedagogy and its epistemological foundations in behaviourism are no longer valid. "In learning a paradigm, the scientist acquires theory, methods and standards together, usually in an inextricable mixture. Therefore, when paradigms change, there are usually significant shifts in the criteria determining the legitimacy both of problems and of proposed solutions" (Kuhn, 1962, p. 109). The paradigm shift that characterizes the transition from objectives-based to competency-based pedagogy leads "at last to a new set of commitments, a new basis for the practice of science. The extraordinary episodes in which that shift in professional commitments occurs are the ones known [...] as scientific revolutions" (Kuhn, 1962, p. 6). The introduction of the notion of competence into the prescribed curriculum thus represents a significant paradigm shift and calls for changes that affect the entire education system, from the design of programmes to the organization of learning in the classroom. Essentially, it requires all the actors in the educational milieu, including the learners, to develop a new relationship to knowledge.

The *paradigm revolution* involved in the transition from objectives-based to competency-based approaches entails much more than a change in practices. Programme designers must invert their relationship to knowledge. Rather than starting with an analysis of subject matter content, they must now focus their analysis on the competent action of persons in situation in order to derive the resources needed to deal with these situations. In the same way, teachers who are used to transmitting decontextualized knowledge must henceforth place their learners in situations so that, together with their peers and through their own practices and experiences, they can construct the resources that will help them to become competent in these situations. In this context, it is no longer subject-matter content that is prescriptive, but rather the classes of situations that must be handled competently, and it is these latter that are defined in the exit profile. Even the role of the student is affected. Rather than memorizing rules, procedures and notions, learners are now called upon to exercise a kind of *situational intelligence*, that is, to understand what must be done in order to *act competently* in a certain number of

situations. Thus, the transition from an objectives-based to a competency-based orientation involves replacing the simplistic breakdown of learning content into specific items of knowledge with a more complex situational approach.

A *paradigm revolution* of this scale exceeds a mere adaptation of programmes of study and entails a whole change in mentality, one that involves a reversal in the relationship that people establish with the world and reality. This does not happen overnight, as if by magic; the work is extensive and affects all the actors in the education system of a society that is engaged in such a reform.

A curriculum reform: beyond rewriting programmes of study

A praxeological approach to curriculum reform would be sufficient if all that was required was to plan training sessions and rewrite programmes. But, introducing the notion of competence into the curriculum involves much more than rewriting programmes and requires addressing questions that are raised at many other levels of an education system affected by such a reform.

For example, the relation between competencies defined in programmes (*virtual* competencies) and their construction by learners in the classroom (*actual* competencies) remains to be clarified. If competencies described in reference banks or programmes remain disconnected from their situations of use, then these reference banks or programmes will be like tools without an owner's manual (Ropé & Tanguy, 1994). Although the expected results of teaching/learning may well be specified in the exit profiles, the means to achieve them are to this day uncertain (Stroobants, 1998): "These days, we have noticed that research has not yet become sufficiently stable or fixed as far as different conceptions of competence are concerned. In this regard, researchers still have a long way to go because not only do they have to address the question of what it is that we want our students to learn but also how they can best learn it" (Delorme, 2005, p. 2). What is conspicuously absent from the majority of present-day programmes that claim to be competency-based is any reference to the "situation" in which competence can be developed.

Furthermore, a curriculum does not constitute an entire reform. It describes the major orientations of an education system and the development of citizens in a given social situation. Programmes specify learning content from this perspective. But, all of this remains *virtual* if the question of *how* learners can best develop their competencies is not adequately addressed.

In addition to curriculum issues, concerns of an educational and didactic nature loom on the horizon, and these also involve questions of how to contextualize learning in situation. The time has come to take a certain distance from programmes of study and go beyond the virtual *competencies* described in programmes, reference banks and other official curriculum documents. Teachers must soon adopt appropriate educational and didactic approaches that allow students to construct their *actual competencies* through their own actions and experiences in situation. Within the framework of a competency-based orientation, a curricular and *praxeological* perspective is not sufficient because it is

limited to prescribing *virtual competencies* in programmes, even though this is a necessary step in the transition to competencies in action in the classroom. The educational and didactic actions of teachers are also a matter of *praxis*. But these await clarification from a sound theoretical framework, validated methods and educational and didactic approaches that really target the development of competencies by learners in the classroom.

It is important to turn our attention to the question of *actual competence*, the competence that is developed by a whole person who is fully engaged in a situation, and to consider how it is constructed. These issues must be clarified if we are to identify those educational and didactic approaches that best promote the development of competencies in situation. In the absence of any such clarification, it is highly unlikely that educational practice will eventually witness the emergence of situations that truly promote the development of *actual competencies* by the learners in action. Criticisms of the competency-based approach will continue to abound: “competencies, capacities, indicators, do they really exist or are they simply pre-scientific concepts, devoid of sense, and as a result potentially dangerous, like false righteousness, laziness or apathy?” (Cardinet, 1982, p. 158).

Conclusion

From the foregoing, it is obvious that the person is the *crucial focal point of competence*, although an emphasis on situations could obscure this fact. For example, guitarists cannot exercise their competence without a guitar, or pianists without a piano. An instrument is not simply something that emits sounds; it is an instrument of the enactive competence of the musician. The musician makes music with a guitar and the guitar thus participates in the music. *Guitar/piano and musician* constitute a *single complex system in action*, and out of this *structural coupling* emerges a melody that extends across the space and time of the situation. Enaction highlights this structural coupling of the musician and the musical instrument. The instrument is imbued with cognition from the moment that it participates in the person’s enaction in situation. In the exercise of competence, the instrument and the musician constitute a unity. This unity is not a matter of submersion (as in a crowd), but rather of harmony (as in a team sport), in which contributions are distributed, but nonetheless inseparably united as a single whole. In this distribution, the roles of the actor (the musician who is playing) and the instrument (the means) are distinct. The motor that drives the musical piece is the embodied activity of the actor, that is, of the musician in flesh and blood. This embodied activity or, in other words, human activity constitutes the enactive centre of the musical piece. The musician tunes the guitar and the guitar so tuned is ready to be played. The guitar is neither body nor action; rather it is enacted as a means for the exercise of competence. But *the person-in-action remains the centre of competence*.

A guitar has its own structure. In building a guitar, the instrument-maker carefully chooses the wood, assembles the strings according to their properties, designs the soundboard to evoke the best sounds, and so on. When a beginner obtains his/her first guitar, it may appear to be a fully prepared and ready-to-be-played instrument. Not so!

There is another structure that comes into play, namely that of the person, with all of his/her skill and physical, cognitive, dispositional and intellectual dexterity, in short everything pertaining to the person's competence that must be developed. The structure of action and the structure of the instrument can only coexist in the *harmonious coupling of the person-in-situation*. An instrument does not immediately constitute a means for making music. An instrument is, of course, defined as a means for doing something, but this means is not intrinsic to the instrument; rather it arises through the mediation of another means, namely the *action of the person acting in situation*. This action, moreover, must be competent if it is to constitute a means. Consequently, if there is no competence, there is no means, and the instrument remains inert and useless, for an instrument is only a means for someone who knows how to use it.

External resources (pencils, books, computers or guitars) are not given as such, nor do they constitute elements of distributed cognition unless the person knows how to use them competently. The functions of a computer do not take on meaning until *competent human beings com-prehend them* (from the Latin *cum* = *with*; *prehendere* = *seize*), that is, appropriate them for themselves. A person's competence in situation depends on everything that he/she could *com-prehend*. *It is the competent person who situates things and distributes his/her cognition*, depending on the situation, to the operations of the calculator, the hammer that hits the nail into the board, the pen that leaves its mnemonic traces on paper, thereby freeing up memory space, etc.

If we remain entrenched in a curricular perspective that confines the concept of competence to formulations intended specifically to present learning content in programmes of study, and fail to envision anything beyond that, educational reforms have little chance of flourishing or of generating any real innovation. Only when we begin to explore the notion of the competent person in situation does the full meaning of the concept emerge. The present text departs from considerations that are strictly curricular to a reflection on the notion of the competent person in situation. The potential impact of such an approach on the classroom is threefold: a focus on situations ensures an intimate link between the classroom and real life; the person is assigned a central role in the process of developing his/her competencies in situation; and the way in which teachers relate to knowledge undergoes a paradigmatic transformation.

The person is at the centre of situated and distributed competence. Learners are no longer considered as passive receivers of knowledge, external to the whole teaching/learning process. They are acting subjects who have taken their place at the centre of the dynamic process of developing and constructing their own enacted identities, and thereby of their own knowledge.

Competence is situated. Competence can be either individual or collective, depending on the social characteristics of the situation. *But outside of any situation, no competence can be elicited.* Situations must thus constitute the point of departure for classroom learning activities.

Competence is distributed, in the sense that it is not restricted to a form of cognition that resides exclusively in a person's head, but is extended to all the elements of the situation and a diverse range of resources.

Finally, *competence is enacted*. The type of classroom that has been traditionally governed by the notion of the ‘cognitive whole’ is a thing of the past. The relationship to knowledge on the part of all the participants in the educational enterprise has undergone a 180-degree turnabout. Such a perspective entails a new relationship between the teacher and his/her own teaching, since situations and action now replace subject matter content as the preferred point of departure.

Reflecting on the multifaceted characteristics of competence, selected as the organizing principle of a curriculum, involves considerable discussion about the nature of learning and how a competent person learns in situation. The challenges confronting the world of education as a result of adopting the notion of competence are so significant that it is now urgent to move beyond issues of programme design to more fundamental considerations of competence and its role in the on-going development of the learner.

Notes

1. The authors wish to thank R. Defise, instructor at the University of Sherbrooke and researcher at ORE, for her invaluable comments and suggestions.
2. Prior to this time, linguistic analysis was based on Saussure’s (1916/1966) distinction between ‘langue’ (‘language’) and ‘parole’ (‘speech’). While ‘parole’ referred to the *virtually infinite number of utterances* (oral or written) that can actually be produced, ‘langue’ referred to the *whole system of signs shared by a linguistic community*, and it was on this basis that competence was distinguished from performance (on this subject, see Jonnaert, 2002, pp. 10–11).
3. An *organizing principle* for a curriculum establishes the major orientations to be observed both in the area of programme design and in the development of classroom activities. The notion of *competence* plays this role in the curriculum, where it extends to classroom practice. Similarly, *objectives-based teaching* constitutes an organizing principle for a curriculum.
4. MELS uses the term *reference competency* to designate *virtual competence* as we refer to it in the present text (MELS, 2005). These two expressions are, nonetheless, synonymous.
5. In curriculum studies, three concepts are traditionally invoked to talk about the curriculum of an education system: the official or *intended curriculum*, the curriculum that is really implemented in the classroom (the *implemented curriculum*) and the curriculum that is actually attained by the students (that which can be observed and measured by achievement tests – the *achieved curriculum*). “Ideally, there should be a one-to-one correspondence between the official curriculum (which defines what is intended) and the implemented curriculum: achievement tests measure what has actually been taught in the classroom” (Crahay & Delhaxhe, 2004, p. 38).
6. This section of the text is based largely on Masciotra (2006).
7. This part of the text is based on Barrette (2006).
8. This paragraph on the collective aspects of learning is based on Barrette (2006).

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