# On the Difficulty of Changing Our Perceptions About Such Things as Learning

The Meaning of Learning Project
Learning Development Institute
Presidential Session at AECT Denver
October 25-28, 2000

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## Introduction

The conditions that prevail in today's world mark a fundamental change with those that characterized the state of the planet a mere couple of decades ago. This calls for new visions of learning and the re-examination of the conditions that promote and facilitate it. The present paper explores human learning as a multifaceted and ubiquitous phenomenon, unrestricted by the parameters of the instructional context to which traditional thinking tends to confine it. By taking that perspective, learning is understood to mean more than what is implied by its regular reference to particular desired changes in human performance capability. In such a broader sense – which this paper urges should inspire changed discourse, policy, research agendas and practice – learning can be seen in relation to the unending dialogue of human beings with themselves, with their fellow human beings, and with their environment at large, allowing them to participate constructively in processes of ongoing change.

The need to rethink our realities comes at a time when global issues have become more than a mere dimension of the concerns of humanity; they have become crucial to its sustainability. Typically, these issues relate to areas such as the development of democratic and peaceful societies; sustainable development of human use of the earth's resources; harmonious scientific and technological development; and the self-management of sustainable demographic growth. While many people have no difficulty agreeing with the importance of the above issues, interpreting them in terms of their implications for the world's learning landscape proves to be far more difficult. Yet, it can be argued that learning is an essential factor in addressing them.

Key to the above perspective of learning is the notion that learning takes place at different levels of complex organization, ranging from the individual to society at large, via social entities that operate at levels such as the family; the workplace; the street;

spiritual communities; the broadcast media; scientific communities; communities inspired by a particular expression of popular culture such as rap music; libraries; museums; Internet-based communities; the school; artistic movements, or even such far more loosely defined contexts as associated with the feeling of 'belonging' among humans, expressed, for instance, in their shared sense of oneness with nature and their appreciation for beauty and harmony. Within that magnificently complex context, institutionalized learning, such as facilitated through the practice of schooling, is but one facet. While it may be considered as important as it was perceived in the past, there is an urgent need to stop replicating old patterns and to rethink the role of the school and schooling from the perspective of its place in the wider learning landscape. To do so, one has to unlearn the preconceptions that most of us have inherited from the past. We shall thus pay due attention in this paper to the reconceptualization of schooling in the context of the learning society. In fact, we should like to start with a look at the school and will use that analysis to clarify what we mean by a learning society.

## A Look at the School and Schooling

The practice of schooling is firmly embedded in Western society as well as in other cultures. Many, if not most, people around the globe see the school as the principal place – sometimes the only place – where people can learn. So strong is this perception that, when thinking about how to create the conditions that promote and facilitate learning, the image of a school comes immediately to mind. Nonetheless, the meaning of schooling has also been summarized in words that contrast sharply with the idea of learning as the authors of this paper see it. "Schooling has usually been a process of selection and rejection, with great effort and ingenuity expended on testing, measuring, classifying, and segregating in accordance with the best available knowledge." Thus qualifies the Encyclopaedia Britannica (1999) the influence of the "Platonic view" of the educated person on schooling in the West during the past 25 centuries and in "those parts of Asia, Africa, and Latin America greatly influenced by European culture." The "process of selection and rejection" referred to in this quote has been one based on the primacy of the study of ideas and abstractions over more practical studies and manual work. There is a

strange and paradoxical contradiction between the insistence among people to be schooled – or to have their children schooled – and the actual benefits they derive from it.

The history of schooling runs parallel with the history of the critique of schooling. The latter includes names such as Thomas Aquinas, who already in the 13th century advocated that the centerpiece of the educational process was the learner, whose intellectual autonomy should ensure independence to investigate and discover. Other well-known examples cited in the Encyclopaedia Britannica (1999) are John Locke; Jean-Jacques Rousseau; Karl Marx (usually seen in intellectual partnership with Engels); John Dewey; B. F. Skinner and the school of 'behaviorists' that followed him; and Martin Buber. To avoid pushing the debate envisaged by this paper in a particular direction, more contemporary names and issues, of which it is to be seen what mark they will make on the history of the development of education, are deliberately being left out. In learning the lessons of history, it is relevant to note how many a good idea became part of the official discourse of its time without fundamentally changing educational practice. The Encyclopaedia Britannica cites the case of Thomas Aquinas's emphasis on the autonomous learner and concludes: "The Roman Catholic Church, however, has usually put the learner firmly under the authoritative superordination of the teacher." It will thus be important for the reflection this paper aims at generating to focus not only on the ideas, but particularly also on the change processes necessary to translate discourse into practice. Such intimate interplay between developing discourse and changing practice can for instance be found in Marshall's (2000, October) paper presented as part of this collection.[1]

## The Social Construction of New Realities and the Problem of Language

There is an urgent need to fundamentally change the entire learning landscape. For arguments that substantiate this thesis, we refer to the ongoing debate promoted by the *Learning Development Institute* (online) and the preceding debate promoted by UNESCO

[1] Reference is made to the collection of papers prepared for the Presidential Session on 'In Search of the Meaning of Learning' at the International Conference of the Association for Educational Communications and Technology in Denver, Colorado, October 25-28, 2000, available at http://www.learndev.org. The current paper serves, among other purposes, as an introduction to that collection.

in the framework of its program on *Learning Without Frontiers* (online). Ample supporting documentation is also available on the website of *New Horizons for Learning* (online). We furthermore refer to an excellent overview of compelling research by the National Research Council (Bransford, Brown and Cocking, eds., 1999). In addition, there are such intriguing arguments as the one advanced by Nussbaum (2000, October) in a paper that is part of this collection, namely that learning is good for your health, a point of view for which further evidence and food for thought can be derived from a recent publication in the journal *Nature Reviews – Neuroscience* (Gross, 2000).

There is no shortage of ideas about the kind of change necessary. However, all of us who try to communicate our various visions about how learning should be reinvented – and that includes the authors of the present paper as well as those of the other papers presented simultaneously – face the common challenge of having to communicate our ideas in fundamentally inadequate language. A major problem in describing a vision of the future is always that our language is limited by the process of its own development. The words we use reflect our past experiences. When the mindset related to those old experiences becomes less relevant to imagining new realities, then there is a problem. The more fundamental the schism between the realities of the past and the ones envisioned for the future, the bigger the problem.

Those who work in the forefront of constructing new realities will, by lack of better words, continue to use old ones, injecting them with new meanings. There is no problem in doing so as long as other people are aware of the changes of meaning. There is no problem either when those changes are so incremental that those who are still unaware of them can gradually appropriate the new meanings. However, when words – and let's as an example take such words as 'school,' 'schooling' and 'learning' – are in need of acquiring meanings that are radically different from the past, then there is the risk that their continued use will seriously hamper the social construction of new meanings among the majority of people. Those for whom the new realities are not yet in sight, or for whom envisioned changes might be so discomforting that they rather shut their eyes for them, will continue to generate old images whenever they hear those words.

The above problem was perhaps never so clear as when, in the beginning of the twentieth century, physicists made a series of discoveries that could no longer be

interpreted in terms of the then available theoretical representations. The reason why this became impossible is a simple one. Physics, up to then, had basically dealt with phenomena of the macroscopic world, i.e. exactly the world that could be expressed in everyday language. In contrast, the new discoveries had to do with the sub-microscopic world, a world with which humans did not have the kind of direct sensory-perceptual interaction that had structured their language. Niels Bohr addressed this issue in October 1954 when speaking during the Bicentennial of Columbia University. He stressed the importance to realize that "all knowledge presents itself within a conceptual framework adapted to account for previous experience and that any such frame may prove too narrow to comprehend new experiences" (Bohr, 1987, p. 67 [reprinted from an original 1955 edition]). At crucial moments in the history of the development of knowledge in a particular domain of scientific pursuit it can thus become necessary to abandon or fundamentally reconsider points of view that, "because of their fruitfulness and apparently unrestricted applicability, were regarded as indispensable for rational explanation" (pp. 67-68). The "widening of conceptual frameworks" (p. 68) then becomes crucial to restoring order in different areas of knowledge, a process that has often also helped to bring apparently disconnected domains of knowledge together.

Such processes are both profound and painful. It took the community of physicists a long time to start feeling more or less comfortable with the idea that the knowledge it generated was less than 'perfect' in the sense in which this word is interpreted in everyday language. Many of them still struggle with the idea that reality is different from what they grew up to think it was. Or, as Nicolescu (2000) says: "Quantum physics caused us to discover that abstraction is not simply an intermediary between us and Nature, a tool for describing reality, but rather, one of the constituent parts of Nature."

## The Reinvention of Learning: Some Recommendations

The above reflection on the development of knowledge – and particularly of the development of thinking about what it means to be knowing – in an entirely dissimilar field of intellectual pursuit as well as in a different historical context, is relevant to what is currently happening as we try to reinvent the science of learning. Many of the conceptions we work with are so firmly entrenched that it is very difficult for new

meanings to emerge. Yet, we must take seriously the challenge to create the conditions that will allow learning to evolve unhampered by the preconceptions we inherited from the past. Following are some recommendations.

### *On <School> and <Schooling>*

In the above heading, <school> and <schooling> are not the same things as school and schooling. The latter notions pertain to the language we are used to and grew up with. We propose to strip the idea of schooling of all its too limiting connotations and to redefine it as <schooling>.

The word <schooling>, then, will mean: *Any response to the assumption that it makes sense to dedicate a portion of one's life, fairly at the beginning of it, to learning and to do so consciously in some organized fashion.* The word <school> can then be taken to mean: *Some kind of institutionalized, purposefully organized environment to make <schooling> happen, not necessarily looking like a school.* Taking on the open mindset associated with these two definitions will leave us free to consider, in as open a manner as we like, questions such as those about what ought to be learned in the context of <schooling>; who should determine what must be learned (and what learning actually means); how learning processes can best be organized and facilitated; what actors could best play a role in it and how those roles could be filled in and developed; and if – and if so how and when – learning should be assessed and for what purposes this should be done.

### *On Consilience, Dialogue and Ambiguity*

Solomon (2000, October) calls for the co-existence of different ideas about truth and for the use of philosophical inquiry as a way to elevate ourselves above the current level of debate, based on the juxtaposition of seemingly contradictory visions. Often, current discussions seem to be motivated by the desire to choose among particular views and to join the camp of their different proponents rather than to seek consilience, and dialogue instead of debate. The practice of seeking the advancement of knowledge via either/or choices is well embedded in Aristotelian logic. The wisdom of clinging to such exclusionary logic has been challenged by Lupasco (Badescu and Nicolescu, 1999),

Morin (in an interview with Nicolescu; see Badescu and Nicolescu, 1999) and Nicolescu (1996). Of particular interest in this regard is the development of a 'logic of the included middle' (see e.g. Nicolescu, 2000), which, in the view of Nicolescu (1999) is one of the three pillars of transdisciplinarity, the other two being the recognition that there are multiple levels of reality and the inherent complexity of our world. To be prepared for more constructive debate, a certain tolerance of ambiguity is required, something many of us don't come well prepared for, taking into consideration our intellectual upbringing. Future educators may well want to follow Suzawa's (2000) advice to teach 'with some ambiguity.'

### *On the Question of Units of Analysis*

The authors are involved in ongoing case story research into how people of different ages in different parts of the world and different circumstances view the meaningfulness of their learning experience in a lifelong and lifewide perspective. Initial results of that research are being reported elsewhere (Y. L. Visser and J. Visser, 2000, October). Sample learning stories, representative of the material collected as part of the research, are available on the website of the Learning Development Institute (*Learning Stories Project*, Online). Preliminary conclusions from this research reveal that for most people meaningful learning is not perceived as having a strong relationship with the conditions of learning created in the various instructional contexts they have been – or still are – part of. This finding is important as it stresses the need to raise the question of creating the conditions of learning in a much wider perspective than that of the instructional processes envisioned by instructional designers and educational planners. It equally has implications for what we should look for in developing our knowledge about learning. The traditions of research and discourse have focused on rather narrowly defined aspects of learning, such as the acquisition of a particular skill, in a manner that is out of tune with the "profoundly subjective nature of the school experience" (Burnett, 2000, October). The choices of what to investigate and what not to investigate have shaped our research methods. Such zooming in on particular aspects has undoubtedly contributed to what we currently know. However, it has also contributed to the narrowing of conceptual frameworks that may, to quote Bohr (1987, p. 67) once more, have become

"too narrow to comprehend new experiences," putting us in front of the painful choice to reconsider the usefulness of points of view that, "because of their fruitfulness and apparently unrestricted applicability, were regarded as indispensable for rational explanation" (pp. 67-68).

### *On the Importance of Defining, Undefining and Redefining*

When so many things must be rethought from a different angle, it is important to step back, forget one's past perspectives, and take a fresh look at where we stand and the entire reality ahead. In other words, there is a need to start from first principles. A modest step in this direction is the 'undefinition' of learning[2] proposed by one of us (J. Visser, in print). We have made a further and similar attempt above in proposing to redefine the concepts school as <school> and schooling as <schooling>. Reconceptualizing a learning system as an activity system (Jonassen, 2000, October) is a similar effort to take away some of the limiting preconceptions associated with the concept 'learning.'

While there are good reasons for things to be defined, there is no reason to keep clinging to particular definitions. When established definitions get in the way of the continued development of a field of intellectual pursuit and practice, i.e. when they become "too narrow to comprehend new [and thus also envisioned] experiences" (Bohr, 1987, p.67), there is an urgent need to undefine them. In our view, the vigor of an intellectual community is determined by the degree to which it is able and disposed to critically reflect upon its own achievements and is willing to accept – indeed to enjoy – that its achievements are of mere transient import. Inquiry, like learning, is not an act defined within limited parameters of space and time; it's a state of mind, both emotionally and intellectually.

[2] In an attempt to liberate the concept of learning from the limiting visions associated with its more commonly accepted connotations, J. Visser (in print) defines learning as a disposition to dialogue at and among different levels of complex organization. The complete redefinition reads as follows: "Human learning is the disposition of human beings, and of the social entities to which they pertain, to engage in continuous dialogue with the human, social, biological and physical environment, so as to generate intelligent behavior to interact constructively with change."

### *On the Use and Abuse of New Terminology*

In the previous section, we have argued in favor of openness towards the reconceptualization of trusted ideas. In some cases, that effort results in the introduction of new terms to replace old ones. This is exemplified by the current tendency to speak of 'learning environments' rather than 'classrooms' and 'learning facilitators' or 'expert participants' rather than 'teachers.' Our own proposition (though it uses a different formulism) to replace the word 'school' by '<school>,' is a comparable instance of this tendency and so is Jonassen's (2000, October) redefinition of 'learning systems' as 'activity systems.' In the same category falls much of the constructivist terminology that now gradually finds its way into mainstream discourse.

The usefulness of such reverbalization is often limited. The conservative human mind is quick at creating old images in association with new words. Many a traditional educator may thus be seen using politically correct language to describe stale practice. Similarly as Burnett (2000, October) argues for the institutional level, here too there is probably no malicious intention at work. It's merely part of a well developed immune system that fights change. To decrease the likelihood that new language can continue to be associated with old images, there is a great need to generate new images, i.e. to develop, and bring to the forefront, new and compelling practice. When we say 'new and compelling practice,' we don't mean things that are only superficially different from past practice, for instance because they include the use of new media or some fancy procedure. We mean practices that are built around assumptions that are fundamentally distinct from those that underlie past practice. The IMSA experience (Marshall, 2000, October) referred to earlier in this paper is a case in point. Another case story, embedded in a different reality and in a different part of the world (Thailand), is forthcoming and will be made available on the website of the Learning Development Institute.

### *On Transcending Current Levels and Mechanisms of Dialogue*

Shotter (2000, October) argues that, as academics we must find whole new ways of being in the world. We must reinvent ourselves as relational beings, rather than as outsiders who interact with the world of ideas as if that world were both outside us and separate from the world of practice and activity. The emphasis must be on "the primacy

of our living, spontaneously responsive reactions to the others and othernesses around us." The idea resonates with Nicolescu's (2000) observation that "abstraction is not simply an intermediary between us and Nature, a tool for describing reality, but rather, one of the constituent parts of Nature." Moreover, we are ourselves part of the reality with which we interact, helped along as well as, at other times, hampered by the symbol systems and worlds of ideas we invent in the process.

Academic dialogue, if it can be called dialogue, seems restricted to formalized processes of generating, publishing (or presenting), and reading (or listening to) papers. Established traditions have caused these processes to be often more driven by the need to satisfy the conditions of career advancement than by the passion to challenge ourselves and push the boundaries of what we know. There is thus a need to move beyond the kind of professional conferences we are all familiar with, whose social purpose is to establish or reconfirm academic status. Those who are successful in that environment become 'names in the field' and end up being keynote speakers. Once one has reached that status, there is little encouragement to venture into the unknown. But it is exactly the unknown that should inspire and challenge us.

We therefore advocate meetings that lead people out of the comfort and routine of their all too familiar disciplines. Such meetings should bring together professionals from across the various disciplines that have a bearing on key issues related to the development and study of learning. Typically the challenges posed by such meetings should be out of reach of any particular discipline, and for that matter out of reach of any individual professional, pushing the community that such meetings could help forge towards ever higher levels of transdisciplinary pursuit. Such meetings played a crucial role during the turbulent period in which physics reinvented itself during the first half of the twentieth century. Similar community building processes took place when, in the second half of the twentieth century, the field of biology was given its molecular basis of inquiry. Similarly, recent scientific developments in the study of complexity, combined with the challenge to reinvent ourselves in a rapidly changing technological environment (Spohrer, 2000, October), may well inspire transdisciplinary communities of the mind that push the boundaries of what we know and how we develop the practice of learning.

### *On the Training and Professional Development of Instructional Designers*

As this paper is presented at a conference attended by large numbers of instructional designers, we should like to offer some suggestions concerning the training and professional development that shape the instructional design field. Both authors are themselves products of these processes. They both value highly their own training and professional upbringing.

Few people would challenge the claim that instructional design has greatly contributed to the advancement of instructional practice. Yet, it may be possible that much more could have been achieved. By way of comparison, let us have a quick look at another design field, architectural design. Imagine what the human habitat would look like if architects had been trained the way instructional designers are being trained, familiarizing themselves with one or a small variety of design models, learning to apply them in a step-by-step fashion to small and isolated pieces of the habitat, never seeing, except after graduating, or perhaps somewhat earlier during an internship, the whole picture. Typically, the challenges faced by architecture students during their training are much more holistic than those of their counterparts in the schools of instructional design.

In line with the arguments presented in this paper, we conjecture that interesting improvements and a rise in creativity and intellectual satisfaction among instructional designers, as well as the learners who benefit from their work, will result from an approach towards the training of instructional designers based on the principles of problem-based learning. Such an approach is in line with Shotter's (2000, October) ideas in the sense that it would make designers participants of the world they are supposed to influence, rather than mere outside agents. It equally finds support in the notion of learning systems as activity systems developed by Jonassen (2000, October). We thus recommend experimentation with these approaches.

Another point we like to make has to do more in general with how in most disciplinary branches that are of importance to solving the critical questions about learning we are currently facing, much creative energy may get wasted. We refer here to the general tendency in the social sciences to value age, or rather perhaps time spent in the field. Recent social science graduates thus easily get overshadowed by their more senior colleagues. They may often only be seriously listened to when they have reached

the stage in their career when they start repeating their major messages rather than creatively develop new insights. A look at the age distribution among scientists employed at the European Centre for Nuclear Research (CERN) in Geneva quickly shows how in the so-called hard sciences a different approach is taken. Typically, in a laboratory like CERN one finds a peak in the distribution curve of scientists by age for people who are in their mid to late twenties. Assuming that creative energy is an important factor in the development of new meaning of learning, both theoretically and practically, we propose that the social science field pertaining to the study and development of learning take a serious look at the different ways in which human talent is used in the natural sciences.

## Towards a Learning Society

In writing this paper, we deliberately started out from a concrete instance of practice, the school. In the course of our argument, we proposed that the school be replaced by the <school>, a concept which, by definition, we left open.

A learning society is a society of ubiquitous learning, one in which at all levels of complex organization, there is a disposition to dialogue, inspired by shared consciousness of the need to interact constructively with change. We believe that it makes a great difference how young people become initiated in the world of learning and how they will, individually and collectively, contribute to the evolution of the learning society at later stages in their lives. We thus also believe that the <school> is a crucial piece of the backbone structure of the learning society. Building the <school> is a work that has merely started. The advance of its cause is, in our view, crucially intertwined with the proposals we developed above.

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