Contextos educativos inteligentes

Intelligent educational contexts

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Resumen

Inteligencia y educación son dos constructos complejos. En el presente trabajo nos interrogamos acerca de ¿Cómo crear contextos educativos inteligentes? y ofrecemos algunas respuestas interesantes reconociendo las nuevas concepciones sobre inteligencia y su implicancia en educación. El escrito presenta desde un enfoque socio-constructivista las características que se le reconocen a los contextos educativos para ser pensados como inteligentes y el entramado de consideraciones que se realiza desde la psicología educacional y cultural para el desarrollo de nuevos enfoques de aprendizajes cuando se asume la importancia del contexto y del sujeto de aprendizaje. Asimismo, se describen las características que las tareas académicas y las evaluaciones adquieren cuando se busca construir contextos educativos inteligentes.

Palabras clave: educación, inteligencia, contexto, aprendizaje.

Abstract

Intelligence and education are complex constructs. In this paper we inquire about How to create intelligent educational contexts? and offer some interesting responses recognizing the new conceptions of intelligence and their implications for education. The paper presents from a socio-constructivist approach characteristics that are attributed to educational contexts to be thought of as intelligent and the network of considerations is made from the cultural and educational psychology for the development of new approaches to learning when one assumes the importance of context and the subject of learning. It also describes the features academic tasks and assessments acquire when looking building intelligent educational contexts.

Key words: education, intelligence, context learning.

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Introduction

How and where cognition and learning occurs

It is generally accepted that intelligence and learning are qualities or characteristics of each person as an individual characteristic. Some psychological theories have given rise to keep the course, and so when we speak of intelligence we associate with an aspect of personality that we have been 'gifted' in the design and will be updated at learning through life .

Although as we said, the belief is established, some evidence of more recent studies have reported a strong social and environmental contribution both on intelligence and its development in individuals and in obvious or subtle nuances that have learning different aspects related with life and learning in specific academic school.

The initiative to show the social aspect and shared on the configuration and development of intelligence, cognition and learning is enticing, so take a space to outline the issues that

seem most interesting in the proposed educational theories and how they can be translate into more efficient and creative instructional experiences.

In this sense, the theoretical and practical interest in understanding the cognitive functioning immersed in the social, cultural and historical context is expressed in the research and theoretical developments that nurture the complex network that involves learning. Several authors seem to agree, among them Alexander (2006), Perkins (1995), and Donolo Rinaudo (2000) and Rennie (2007) concentrated their studies on some of the characteristics acquired knowledge construction. His analysis and description is the subject of this writing. First we refer to learning as an idiosyncratic process, then describe knowledge as distributed and situated, ending with the importance of considering the contexts in which knowledge and learning occurs.

The peculiarity of knowledge as idiosyncratic answers How people learn. The various perspectives studying the unique nature of knowledge and learning agree that personal processes are different for each person. Falk and Dierking (2000) refer to staff learning context to explain the factors that mediate the construction of knowledge, referring to the intrinsic and extrinsic motivators, interests towards tasks, programs and event, knowledge and experiences previous and personal choices.

Regarding experience, the environments in which daily life takes place, often we lose sight of what their particular characteristics and differences with other historical periods. The emergence of new technologies suggests marked influence on the thinking and doing. While it may influence is hidden in the everyday of living, it becomes a bit of thinking we palpable in the experiences in which children and teenagers today, who envision a particular way of interacting with reality as they are immersed in technology, Internet, gaming, youtube, wikis, undoubtedly set new ways of being intelligent and interests that must be addressed in educational contexts. Answers are being found in the proposals of distance education, the use of blended learning modalities, the blog, interactive libraries, virtual educational resources that enable the development of skills that will be relevant for the professional future of young people, in complete contrast to previous generations where the use of more technical skills were presented as essential.

According to the new mediations that social context is understood that provides readings subjects do assume a different character in how to interpret and internalize. Here, Gardner (2006), Kelly and Tangney (2006) and Rigo and Donolo (in press) agree in emphasizing that subjects facing the construction of knowledge in different ways, using different modalities in their procurement processes and understanding of classroom content, using various resources, time and different spaces.

The psycho-educational planteos also tend to think that knowledge and learning are not given a solo way. Representatives and supporters of the proposals are questioning Where is the knowledge and how it is built, to allude to the notion of distributed cognition and situated. From this perspective, one understands that learning is socially contextualized, ie the meanings that emerge from the interplay constructed that subjects have with the context, which in turn is mediated by tools, activities, and symbolic communication systems.

Regarding the idea of situated knowledge, the concept of culture is particularly important, highlighting the activity of learning takes place in a time and space. In this sense, Falk and Dierking (2000) mention the existence of multiple learning communities, to specify that knowledge is not the same in all individuals and in all societies. It is important to note that the experiences that one has the ability to take beyond the local context show a path of possibilities to awaken passion for certain activities, it was during their vacation to Africa, a twelve year old -británico- not only discovered his passion for photography, but it was recognized by Royal Photographic Society UK, who rewarded him by obtenidas images.

Such experiences in real contexts, encouraging us to think not only knowledge as situated, but also as distributed. The term has been mentioned in the literature with various designations. In this regard, Pea (1993) chooses distributed intelligence study while Perkins (1995) relates to spread cognition. One and another to indicate, first, that knowledge is socially constructed through shared goals aimed at, dialogues or questions that emerge from the different perspectives considered by those cooperative efforts. On the other hand, to argue that cognition and intelligence are physically, socially and symbolically spread.

In this regard, Rinaudo and Donolo (2000) and Rinaudo (2007) recognize that distributed intelligence means that people work together to the environment, in collaboration with other subjects, physical and symbolic objects through which power individual capacities. The contributions of Alexander (2006) are in the same direction, while understanding that cognitive responsibility involved in any academic task distributed between individuals promotes understanding and skills of each student in a setting that involves collective thinking, cooperative learning and mental exchanges

Both aspect, situated cognition and distributed, have become more important over the years in educational contexts, more specifically, the premise of Perkins (1995) as 'the others' environment becomes value in instructional contexts. In this sense, participation in cultural experiences and student exchanges gives nuance to the learning of the subjects taken as meaning closest experience with the construction of knowledge, similarly, some television initiatives invite you to experience the everyday side presented of science, such as TEDx conferences, Altered by Pi Project Paenza or G Golombek. But we also find that new styles of teaching by making other unusual places and promote understanding of the curriculum, such as the recent initiative to work with artists in a museum, integrating rock and pop in the educational project tradicional2 or the idea of socio-community practices in the curriculum.

Whereupon the experience set forth reflect a third aspect that seeks to understand in what contexts it is possible to learn. The postulate understood that knowledge reflects experiences that occur both inside and outside the school context. In this regard it is to extend the learning environment beyond the classroom walls, in fact from the Educational Psychology is understood that there is a multiplicity of experiences in the real world that can demonstrate, reinforce or extend any item you want teaching (Alexander, 2006).

So when we talk about context, what we broadly, to consider not only the classroom as a learning environment, but also other communities of non-formal learning, such as theme parks, museums, aquariums, galleries character art, gatherings, among others. Spaces that help us better understand and learn about cultural objects -art rock, hunting implements,

typically clothing, on the flora and fauna in situ observing, enjoying the aromas, textures and varieties. Also, spaces and art galleries have also gained momentum in recent years with the emergence of new museums that invite live art through aesthetics, emotions and sensations. What is meant is that we learn best and develop other skills if we join the resources that facilitate our access to knowledge.

On the other hand, considering both contexts, two conceptions of knowledge is derived. An informal or non-academic knowledge that realizes an understanding gained as a result of experience in a non-formal educational context, associated with incidental learning, and a formal or schooled knowledge we achieve more structured educational experience that emphasizes in the construction of scientific along intentional learning process concepts.

The recognition of such features for learning and cognition, not only deserve mention intelligent contexts, while educational practices that are based on three premises bounded contribute to its definition, but also consideration creates environments that meet the individuality of students, interrelationships understood as constructions mediated by physical, social and symbolic elements that make sense in a time and in an educational environment, whether formal or informal.

At the same time, from a practical-pedagogical perspective, we understand that creating intelligent educational contexts is a challenge that integrates multiple educational projects promoting contextualized meaning and individual character. An example can be found in the planning of teaching experience that many intellectuals consider the profiles of the students, the range of places to learn and recognize the importance of context and artifacts that represent the actions of individuals.

Promoting intelligent contexts

The educational and cultural perspective bet, in general, that learning and cognition are understood in a framework that is defined to be idiosyncratic, situated and distributed. And simultaneously, we assume that educational contexts are smart as they approach, among

other things, the assumptions that Bruner (1997) suggests when analyzing education from a psycho-educational perspective, axioms that help thinking to contexts such as smart while acting as a guide for someone to learn something about another.

A first aspect refers to the idea of perspectivismo, which can be thought of in two ways. On one hand, it is understood that knowledge and education are built from multiple inputs, not only from the perspective of teachers, but also other agents that contribute equally to the act of learning, and students to be recognized, the family, community learning. Furthermore, it is understood that the ways of knowing are not limited to the arrangements canonized by culture, extending its scope to artistic, emotional and academic expressions. It seems that the focus has come to life in some schools, to encourage the development of diverse talents, combine traditional study plan with Entonox creating personalized instruction to discover, explore and empower through contextualized activities and games that explore about professions adults -School Sun in Bariloche, Argentina, The Gardner School of Arts & Sciences in Vancouver, Washington, The Gardner School in Nashville, Tennessee, Multiple Intelligence International School in Quezon, Philippines and Key Learning Community in Indianapolis, Indiana-. Or various schools projects put in place to stimulate emotional intelligence, such as those applied in the SEK Educational Institution in Barcelona, Spain or Waldorf Education Centers in Madrid, Spain.

A second issue relates to the need to expand the boundaries of what is understood by thinking, knowing, feeling and perceiving. Such postulate recognizes the diversity of symbolic systems and domains of knowledge that are observed in both formal and non-formal educational contexts of education. From a practical perspective, the limit is assumed on the type of knowledge and dominant contexts, but from a pedagogical consideration involves jumping limits the recognition of multiple knowledge, intelligence and educational environments.

A third aspect involves teaching models based learning communities perspective, the key element is the tendency to learn by working together to improve the social construction of knowledge (Molina Ruiz, 2005). As such it is shown opposite approach found in most

schools, where learning is analyzed as a solo process, whose goal is to transmit the knowledge of the teacher or the textbook (Collins, 2006). In contrast, learning communities promote interest and the individual talents and in fact will help learners learn from each other, each according to their abilities. It is in the heart of the communities where alternatives emerge for we feel comfortable and we appreciate that we can do what gives us pleasure, being more productive, as in the case of Ferran Adrià, a chef who is giving loose to the kitchen reins and innovation in the plane of the molecular, linking chemistry, physics, art and gastronomy. They also are examples of learning communities extracurricular contexts, leisure and relaxations (art workshops, weaving, circus, juggling, gardening, etc.) that are developing from a focus to do and learn with others.

A fourth aspect relates to outsource the work and products created by students. This postulate rescues the importance of public awareness and share the entire school community. Registration of mental products can be seen in different occasions: reading marathon, creating a story, photographic competitions, science fairs, painting workshops, among others. Which in turn allow the expression of different intelligences. Not long ago, in a village located in the center of Córdoba, Argentina, took place the 8th Science Fair, with the theme of exposing the work done by students in social and natural sciences. The ability to communicate and present the products and created works show a different climate schooling, children are active participants, is committed to participatory and tell, show and answer questions from the audience. They have the ability to display interpersonal skills, becoming a contextualized activity aimed at an audience, and previously to apply knowledge from other disciplines such as mathematics, language and information to guide the research process, forming in skills that will be important in the future context of performance.

A fifth aspect examines the power of culture over the mind. Not only multiple ways to use the mind, of knowing and interpreting the world is recognized, but is instrumental to different situations. The premise is inclined to understand the school culture mediation facilitates the development of one or other skills, selectivity promoted social purposes. However, the fact of creating small symbiotic innovations within or outside the school or

open spaces for its realization generate possibilities of cultivating the multiple capabilities of the mind as it is raised into the theory of multiple intelligences (Gardner, 1983). In this sense, schools sometimes innovate when engaged in various types of Olympics are observed, and when attached to the invitations for storytelling, short film competition, the production of digital educational content or when bridges are created between various educational institutions such as the experience carried some time ago from a high school and a science lab, inviting seventeen teenagers do investigation.

A sixth aspect, which integrates the others, is set in the configuration of creative, diverse and flexible learning environments that expand the possibilities of expression of talents, ways of doing and thinking variously, fostering multiple ways of being smart.

Each of these psycho-educational principles opens doors to think an education beyond the canonical forms that are seen every day in classrooms, challenge us to create new environments most insightful. In this connection, the following section provides some guidelines to comply with the stated goal, create intelligent educational contexts.

Hands ... which involves creating smart environments

Understanding of the three defining characteristics of learning and cognition and consideration of the six psycho-educational principles, some key ideas for education in intelligent environments are derived. We understand that if you leave footprints in social cognition, learning and intelligence, and daily experience that we become a source of learning, the discussion about the definition of academic assignments and assessments on reconsideration to formulations more creative, and diverse educations is situated crucial. We present some ideas around two axes, tasks and evaluation in education, in order to show alternatives to generate environments that are committed to diversity, situated and distributed nature of learning and skills development.

On the one hand, regarding academic tasks, we believe that in its definition the ability to create environments that can motivate and engage students play. Among the features discussed in the specific literature on the subject highlights that are: diverse and varied,

authentic, innovative, open, interesting, complex, conferring a certain level of autonomy in the proposition, implementation and evaluation of the activity and submit a medium level of difficulty (Ames, 1992; Ames and Archer, 1988; Doyle, 1983; Mitchell and Carbone, in press; Paoloni, 2010; Rosenholtz and Wilson, 1980; Stipek, 1996).

These dimensions acquire academic activities are recognized within a socio-cognitive approach and thought from a perspective located and distributed. In terms of how to design and implement multiple tasks under this perspective, the model entrance doors Gardner (2006) and Boix Mansilla (2004) is an innovative and promising alternative. In this sense, it is suggestive to implement the highlights on cognition and learning in the previous sections, is premised on the theory of multiple intelligences to the design model of educational experience.

Regarding the diversity and variety in the tasks presented provides a framework to work on different types of activities, using a variety of resources, materials and tools. Here, Gardner (2006) proposes six entry point to encourage not only the understanding of the curriculum, but also promote intrinsic motivational orientation and commitment to learning. The author mentions the stories, presenting logical-argumentative structures, the existential point of view to support terminological aspects of concepts, aesthetic approach to include the artistic mastery in the design of the class, the experiential experience as visits to museums , theme parks, etc. and work in collaborative groups through projects, discussions, debates and role-play to foster relationships.

Thus, the formulation of academic tasks from multiple perspectives encompasses a variety of representations, media and symbolic systems that help to understand the content deeply, as the implementation of various intellectual profiles requires that the once accommodate the diverse abilities of students.

The premise of diversity and variety of activities, is also in line with current trends in educational research about Alexander (2006) indicates that research are moving disclosed in which tasks subjects are shown more intelligence, and likewise, define what resolution

strategies used to address activities or develop in a particular disciplinary field. Such wont invites configure heterogeneous contexts that provide opportunities to propose open tasks, both in terms of form and in terms of products, ie, is the students who have the freedom to choose what kind of product will develop at the extent of the task requested.

Also studies in Education highlighted the true nature of academic tasks in promoting more meaningful learning. As regards, Perkins (1995) states that teaching practices towards learning situated in a context provide a structure and motivation knowledge and skills are being learned. Mitchell and Carbone (in press) note that establishing relations with daily life, presenting problems that bring into play the use and development of skills necessary for everyday world, not only encourages cognitive engagement but also the behavioral and affective.

Beside the significance of the activities designed and the value of using variety of representations in its formulation, binds the importance of novelty, complexity and interest generated by them. The purpose of including such features in academic activities is to keep the motivation and accountability. So, when it comes to novelty, does not refer to the content, but the task itself as presentation and as previous experience and knowledge of the students. As it regards the degree of complexity is related to the number of steps required by the task, the amount of information to consider and the amount of goals to achieve (Mitchell and Carbone, in press). And when it is specified on the interest, Stipek (1996) suggests that it is determined by the level of difficulty of the task, ie, they will be perceived as interesting by students when presented challenging their current cognitive structures, or when from the Vygotskian perspective are formulated within the zone of proximal development.

Finally, Ames (1983) recognizes that giving choice and control to students within the context of identification, selection, planning and evaluation of learning tasks and creates opportunities to take responsibility and self-regulated learning and knowledge. In this sense, Paoloni (2010) agrees with Pintrinch and Schunk (1996), that democratic teachers are able to give students an average degree of autonomy and control over their learning

processes, encouraging participation in decision making and the gradual assumption of responsibility.

According to the above, the proposed tasks in the framework of Gardner's model and the explicit characteristics not only allows realizing the idea of perspectivism made by Bruner (1997), but also shown as a means to address various interests related with the idiosyncrasies of learning and cognition. Besides considering the diversity of contexts in which learning can attend and which they do, and recognition of natural environments as a source of knowledge.

On the other hand, a model consistent with the proposed evaluation Gardner is present in real proposals. About this assumed criteria aspects have important practical applications and implications for learning. Ames (1983) believes that if success is defined by reference to a criterion of competitiveness defined by the best performance among students in the classroom, then the social comparison favored. However, if the assessment is defined in terms of real, is understood to be a process that provides information for use in making educational decisions, to provide feedback to students about their progress, strengths and weaknesses and even to judge curriculum planning and modifications (NCME4, 1990).

In this regard, Diaz Barriga (2005), reprising the contributions of Herman, Aschbacher and Winters (1992), understands that assessment practices should demand that learners actively solve complex and authentic tasks, using prior knowledge, recent learning and relevant skills to solve real, everyday problems. It also emphasizes that authentic performance centered assessment aims to evaluate what is done and to identify the relationship of consistency between the conceptual and the procedural and understand how performance happens in a particular context. In the formulated framework, a formative evaluation made during the teaching and learning process, with the main objective to regulate, interactively, everything concerning pedagogical practice (Alonso Trillo, 2005) it is pointed. In this sense, it is a tool that allows the teacher to regulate the structure, organization and development of the class and academic tasks. Similarly, it is a process of self-assessment by the student, through which develops skills of self-regulation and reflection on learning.

In fact, the line of work on authentic assessment considers the individual lives before, during and after the instructional process (NCME, 1990). Regarding evaluation activities taking place before the instruction, specific understanding of the interests, skills and abilities of students; understand the motivations of students to particular issues; identify and articulate the goals they claim to achieve and plan the teaching-learning process according to the information collected.

In relation to the activities that take place during the specific process: monitoring student progress with agreed educational goals; identification of the skills acquired and the difficulties presented in the experience and the proposed tasks; model fit based on the observed; instances the proposed feedback process to advance and motivate students. And finally, after the instructional process, the activities are aimed at describing how well each student has achieved the objectives proposed in the medium and long term; communication strengths and weaknesses on the results of evaluations; analysis of information gathered before and during instruction; evaluation of the instructional process, materials and activities used and to propose changes.

According to the above, Darling-Hammond, Ancess and Falk (1995) returning to Wigging (1989) propose four characteristics that define a true authentic assessment. As regards the first characteristic, is considered to represent the actual performance of the field in question. Students write for a real audience rather than provide answers to questions about the text or comply with a spelling test, students conduct scientific experiments, instead of memorizing facts of science. In this sense, the tasks are contextualized and complex intellectual challenges posed leading students to research and apply knowledge in unstructured tasks that require the development and use of metacognitive skills. At the same time, are tasks that lead to different thinking styles and interests, which serve as a source of skills development and identification of strengths.

A second feature relates to the evaluation criteria. These allow us to evaluate the essential aspects in different levels, not focusing on rigid rules in a single response. Likewise, the criteria are agreed and expressed openly and known in advance. A third feature is related to

the role of self-evaluation, which happens to be a fundamental part of the petition of authentic assessments, as it seeks to help students develop the ability to evaluate their work to contrast them with public standards, review, modify and redirect them based on their progress. Finally, considering the importance to exhibit their work to the public, with double intention: 1- formulate lessons learned so that others understand and 2 promote opportunities for other learning communities have access to the work.

In summary, assignments and assessments, are two key elements to our knowledge, to build intelligent educational contexts from a psycho-educational perspective that considers not only the subject in a learning situation, but also the educational context in general. Create learning environments and teaching formulated under the framework helps to better understand the capabilities of students to develop important life skills, build deeper understandings of content developers and generate areas of motivation and commitment.

Conclusions

In this article we have made an overview of intelligent educational contexts. In the first instance we refer to how and where cognition and learning occurs from an idiosyncratic perspective, distributed, situated, social and contextual, rescuing building skills mediated by experience and learning environments.

In the second instance, we worked from a psycho-educational approach in order to understand the limits and possibilities open to overcome when the importance of context in learning and includes multiple capabilities of the subjects assessed. In this sense, the idea of perspectivamos, contexts, learning communities and symbolic innovations are of paramount importance if we turn to think of intelligent contexts.

Finally, in order to develop practical alternatives, we define around academic tasks and assessments characteristics and criteria set from theoretical considerations of educational psychology and socio-constructivist approach to learning to care for the creation of educational contexts smart. In sum, the paper offers some paths to walk in achieving more permissive, flexible and open to the minds of the subjects, configurations that are

committed to the motivation and commitment to learning educational environments. Our contribution aims to implement the principles developed by the psychology of education to shape teaching and learning contexts to respond, first with the diversity of ways of understanding the world and secondly to observe the richness of the experiences in natural contexts to learn and develop skills. This general guidelines were established to thinking in classrooms that are in tune with the learning that occur daily in many ways interact with vast resources and environments... leave the classroom, use of ICT, daring to wear a work of art classroom, invite professionals, listening to music are some of the many ways to create intelligent educational contexts.

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