

## **New Pedagogical Theories in Practice: Multiple Intelligences and eTwinning**

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### *Gardner's perspective of human intelligence – the educational impact*

Almost two decades ago (1983), Howard Gardner introduced his ‘theory of multiple intelligences’ (MI theory) creating new conditions for the comprehension of human intelligence and bringing powerful insights into the process of education. The distinguished Harvard University professor claims that each person has almost nine capacities/abilities, named “multiple intelligences”. The existence of these intelligences characterizes the human beings and their combination is unique in each person. No two individuals, not even identical twins or clones, have exactly the same amalgam of intelligences. That is because even when genetics are controlled for, individuals undergo different experiences and are also motivated to differentiate themselves from one another. Stamatis Allachiotis (Allachiotis 2004) claims that the correlations (or lack of correlations) between these types of human intelligence are so complicated, that in fact their autonomy and their "structural" differentiation is degraded.

Gardner identified seven relatively autonomous capacities that he named the multiple intelligences (Gardner, 1983, 1993a, 1999, 2006 a): *Linguistic intelligence*: The ability that involves sensibility to spoken and written language, the ability to learn foreign languages very easily, to use language to reflect upon language, to understand and manipulate syntax and structure and the capacity to use language to accomplish certain goals (this is the ability that lawyers, speakers, writers, philosophers, journalists, politicians, poets and teachers have developed to the highest degree). *Logical-mathematical intelligence*: The ability to calculate enormously well, to analyze problems logically, to perform complex calculations, to excel in logical or numerical activities and to investigate issues scientifically (mathematicians, logicians, engineers, doctors, economists and scientists exploit logical–mathematical intelligence). *Musical intelligence*: Involves the ability to understand and appreciate musical rhythms and patterns. People who are strong in musical intelligence are able to recognize sounds, tones and rhythm and they often use rhythm and music as a way to memorize things (instrumentalists, singers, conductors, disc-jockeys, music critics, instrument makers and composers exhibit highly development musical intelligence). *Bodily-kinesthetic intelligence*: The ability to use one’s body in highly differentiated and skilled ways, for expressive as well as goal- directed purposes (careers that suit those with this intelligence include: athletes, dancers, musicians, actors, surgeons, doctors, builders, police officers, and soldiers). *Spatial intelligence*: The capacities to perceive the visual world accurately, to perform transformations and modifications upon one’s initial perceptions, and to be able to re-create aspects of one’s visual experience, even in the absence of relevant physical stimuli (people with high spatial intelligence are artists, engineers, architects, sailors and surgeons). *Interpersonal intelligence*: The ability to understand other people, to read the intentions and desires of many other individuals, and potentially, to act upon this knowledge by influencing a group of individuals to behave along the desired lines (we see highly developed

forms of interpersonal intelligence in salespeople, managers, teachers, skilled parents, social workers, therapists and religious and political leaders). *Intrapersonal intelligence*: The ability to introspect and self-reflect. People who are strong in intrapersonal intelligence are good at being aware of their own emotional states, feelings and motivations. They usually enjoy self-reflection and analysis, including day-dreaming and exploring relationships with others. *Naturalist intelligence*: A naturalist demonstrates expertise in the recognition and classification of the numerous species of his or her environment (scientists, naturalists, conservationists, gardeners, and farmers exhibit highly developed naturalist intelligence). *Existential intelligence*(half): The capacity to raise and reflect on philosophical questions about the significance of life, the meaning of death, the ultimate realities such as the fate of the physical and the psychological worlds, the profound experiences as love etc.

Even though the “Multiple Intelligence” theory was not addressed to teachers but to psychologists, the educational community embraced Gardner’s theory. The previous psychometric models reflect bureaucratic, rather than pedagogical, needs and that help us to explain educators' sustained interest in this theory. The classification of human intelligence was largely a bottom-up phenomenon that had pedagogical-methodological importance serving learners with diverse intellectual profiles. Gardner considered intelligences have separate developmental trajectories and that validates what educators already know and do: students can be reached more effectively, if their favoured ways of knowing are taken into account in curriculum, instruction, and assessment. Teachers employ Gardner's theory because it enables them to reflect systematically on their practice and thereby enhance it. Gardner considers that the developing of each person potentialities to the fullest, through the educational process, is currently a mystery and he believes that it is difficult to educate the entire society, without sacrificing the diversity. This diversity inevitably places certain questions to all the teachers, independently of their teaching subject: “should we cultivate the differences among individuals? Or, as in a totalitarian society, should we attempt as much as possible to eradicate these differences and produce a society of clones or, perhaps, a ‘brave new world’ featuring a hierarchy of types of clones?” (Gardner, 2006 a). Even though these questions appear extreme, provided that we would all hurry to deny the perspective of such a society, the daily school practice confirms such an orientation of the educational process.

The school reality for most of us coincides with what we would name "uniform" school. In this kind of school the students learn the same things, with the same way and they are assessed in equally similar manner. This school appears to be absolutely fair, since the same treatment is provided for all the students. This kind of school, however, is fundamentally an "unfair school", because it privileges only the students who have linguistic and mathematic intelligence (Gardner, 1993c, 1999).

Gardner’s multiple intelligence theory has affected three educational fields: the individualization of learning, the articulation of educational goals and the multiple representations of key concepts. Contrary to the traditional methods of teaching, the individual centered education expects as many as possible and different training stimuli, so that the students would conquer the training topic with the particular cognitive skills they have. Nowadays a plurality of educational objectives is recognized: fostering of critical thinking, creative thinking, sociability, knowledge of the basic facts and principles of every scientific field, interdisciplinary approach of the training topic, access to Social Studies and Arts, access to intellectual pursuit, fostering of the flair and skills.

According to Gardner, a fundamental objective of the educational process should not be the command of much knowledge but the ability of students to exhibit genuine understanding in a number of key disciplines. It is doubted if a student can think of or critique a scientific experiment, which he/she can precisely describe. The same happens with historical events. How many students are able to analyze a current event in terms of historical precedents? The formal school insists more on facts and information and less on the comprehension and interpretation of them. Gardner claims that in the past fifty years education policy all over the world has undergone an enormous shift and does not pick out some "brilliant" students, but mainly pursues the education of the entire population, provided that "we cannot afford to waste any minds" (Gardner, 2006 a).

### *European strategy and co-operation in education - eTwinning projects*

Researches find receptivity to MI ideas in schools and areas that want to be effective with students from different cultures, value the arts, pursuit cooperation among teachers, want to reflect on practice, have an experimental attitude, and seek to involve parents and communities in education. If individuals, groups, schools or areas, as the above mentioned, embrace this theory because they believe that MI has important educational contributions to make, let alone MI, that can significantly contribute to eTwinning action which is probably the biggest educational net in the whole Europe, that through innovative activities and projects can respond to global challenges by an ambitious strategy for education and training.

The introduction of new technologies promises to play a key role in ensuring an adequate achievement of educational objectives which are essential for Europe's future competitiveness development. The European Commission is engaged in facilitating the process of co-operation between the Member States in order to improve continually the effectiveness and the efficiency of the educational system (COM (2002) 283). As a result, important progress has been achieved in reforming education and training systems. The new strategic framework identifies four long term strategic objectives: Making lifelong learning and mobility a reality; Improving the quality and efficiency of education and training; Promoting equity, social cohesion and active citizenship; Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training.

The application of information and communication technologies can contribute significantly to the renewed Lisbon strategy by fostering effective educational partnerships, like eTwinning. These partnerships among schools are promising, because most projects developed prove that the educational innovation is a corollary of three parameters: the effective use of ICT, the new learning approaches based on pedagogical theories and the more flexible and equal access to educational opportunities throughout the European community. The key idea in eTwinning projects is that of forming a net of educators and schools from different member states, with a focus on partnerships involving efficient and effective cooperation, mediated by information and communication technologies. Teachers and students interact with each other in many different ways on projects and integrate new media effectively into classroom instruction. The improvement of education process is provided by eTwinning projects "from the effective cooperation, discovery, simulation, investigation, problems solving etc". Teachers present important ideas in

many ways and give students various opportunities to indicate what they have learned. Despite the previous elearning efforts that failed because of the lack of social interaction and the minimal flexibility and adaptability, eTwinning provides more opportunities of interaction, combining the traditional schooling and innovative educational approaches.

These projects don't replace the national curricula but on the contrary they strengthen them, with absolute respect for the set of courses and the content offered at school. And that where one can find application the Gardner's proposal for an elegant middle ground: a traditional educational goal with flexible means to achieve it (Gardner, 2006a).

### *Multiple Intelligences and eTwinning – the theory into practice*

In eTwinning projects crucial steps towards optimizing teaching and learning, in accordance with sound pedagogical theories, have been taken. Teachers have explored new intellectual and theoretical directions and they have incorporated numerous teaching and learning strategies into project planning and implementation (Gardner, 1991). Most eTwinning projects are addressed to all types of intelligence and they aim at the growth of multiple skills for the achievement of knowledge, which is an integral part of life and not a simple preparation for it (John Dewey). From this point of view the eTwinning projects are corresponding with situations of real life, where individuals can solve problems in a creative way, using multiple skills which are evaluated positively. The main characteristics of these projects are: the freedom to choose a topic according to students' interests and needs, the deep immersion in the subject (the reflective observation, the conceptualization and active experimentation), the highlighting of many skills, the cooperative and interactive learning environment and, finally, and support a value-system.

The development of projects does not only encourage the students who have the linguistic or mathematic intelligence but any kind of intelligence. Even the projects that focus on the language or mathematic subjects that are teachers' traditional concern, give the chance to highlight students who have other types of intelligence. For example, certain units of mathematics can be easily approached even by students who claim that they do not like mathematics. In the eTwinning pedagogical team two exceptional colleagues, Val Brooks and Palmira Ronchi, proposed and applied innovative approaches of mathematics in their projects (*Virtual Grand Prix Racing* - <http://www.mathstuitiononline.com/vle/course/view.php?id=4>, and *Crop circles challenge* - <http://www.comathsnet.it>). Students from European countries could learn mathematics in a particularly pleasant and playful way, highlighting multiple skills, according to their particular inclinations. In the same way, we can detect the active participation in all curriculum subjects that are approached by all students according to their strengths and proclivities, as Gardner suggests for an individual centered education. Moreover, the cooperative nature of eTwinning projects highlights and strengthens the interpersonal intelligence as a necessary prerequisite for the successful development of any project.

Howard Gardner's interest in "deep understanding", performance, exploration and creativity is not easily accommodated within a detailed curriculum. eTwinning projects give the opportunity to a "new curriculum" that functions at the same time or additionally with the official one (Gardner, 2006 a). In these projects we can detect the deep comprehension of the teaching subject, the implementation, the examination and the creativity that are not usually feasible in the inflexible structure of the

curriculum, as Gardner claims. So, it is important to point out that the project themes are mostly analyzed in-depth, something that the uniform school does not allow due to its orientation. Additionally, in most eTwinning projects students have extensive opportunities to approach the topic. These multiple approaches to a topic convey to students what it is like to be a disciplinary expert.

An important innovation in eTwinning projects is the creative integration of ICT into teaching and learning. ICT makes educational material more vivid, accessible, fun to play with, but above all compatible with each type of intelligence. By using ICT tools, students have access to all the sources of information (texts but also pictures or video), which they can process and evaluate. Students can develop skills, that probably they didn't know they possess, not only seeking the information but actively participating in its creation. Moreover, teachers can evaluate the process and offer direct feedback effectively, as fellows and facilitators towards greater access to knowledge. Additionally, ICT tools can effectively foster interaction and collaboration. As we mentioned, in a previous paragraph the growth of interpersonal intelligence is necessary due to the nature of these projects that are based on the European collaboration. Gardner proposes chat or forum participation, where students have the chance to experience positive or negative situations, or simulation exercises, where students experience hypothetical scenarios and react in various ways. In eTwinning projects students participate creatively in synchronous or asynchronous discussions and experience real collaborative situations with their positive or even negative sides. In eTwinning projects we observe a prosperous marriage of education and technology (Gardner, 2000 a).

Finally, in eTwinning projects the value - oriented learning process is a matter of basic importance. Besides the projects that are directly dealing with values, in almost all the other projects we can identify a successful combination of science with the most precious human values. It is clear that eTwinning projects not only focus on "facts, data, information, but on Knowledge, Understanding, Judgment, Wisdom" (Gardner, 2006b). eTwinning don't 'promote values', but depend on values, such as: multicultural understanding, cultural sensitivity, mutual understanding, desegregation and awareness of minority rights issues, respect to human rights, democracy, solidarity and respectful friendship as a powerful bond between people. As Gardner claims, the challenge for our society in the future is not simply to produce individuals who are intelligent or more intelligent, no matter how we determine it, but to humanize society. So the role of intelligence in our society does not depend anymore on the quality or on the quantity of knowledge that everybody has but on the values which it highlights (Gardner, 2006a).

Today eTwinning has been developed as an enormous network of partner schools, perhaps the biggest in the history of education. eTwinning extend teachers' professional development so as to advance their skills in pedagogy, collaboration, and school innovation. At the same time eTwinning projects promote social development offering the prospect of connections between classrooms across cultures, fostering cultural creativity, increasing democratic participation, enhancing social cohesion and the integration of different cultural groups and individuals with different abilities. It has been five years since teachers from all over Europe apply new pedagogical theories with considerable results. Theories, like the multiple intelligence one, have found practical application. Gardner says that "the MI ideas belong to the world of education and there is a lot of talk and arguing about them much all over the world. We are now observing the theory in practice" (Gardner, 2006 a). I would say that

many of the Gardner's theories have been carried out in eTwinning projects and even more can be achieved. And, it hardly needs to be remarked that the all-embracing evaluation of this important pedagogical action will exert a powerful impact on the educational strategy that is followed.

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