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**The effectiveness of ICT-based training in the development of
managerial competencies. A case study investigation**

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1. DEFINITION OF THE RESEARCH SUBJECT AREA AND PURPOSE OF THE STUDY

In today's economic-organizational framework, the determining principles of competitive advantages for organizations are people, who with their skills can – if they are managed well and improved – acquire characteristics that will become firm-specific to the organization itself (Barney, 1996). Today, the life cycle of skills is increasingly limited: in fact, such skills can quickly become obsolete and the ability to update and quickly develop them while ensuring high-quality results has itself become an important strategic skill. At all hierarchical levels, but especially for those who hold in positions of responsibility, the current organizational framework requires specific skills, including strategic thinking, understanding and reacting to changes in a timely manner, decision-making, even in situations of uncertainty, negotiation and conflict management, delegating and managing work groups. In this regard, Hamel and Prahalad (1995) sustain that those who guide organizations (management) may ensure the company's continuity only by developing and fostering specific skills, or those elements that differentiate service and take it to a higher level (Boyatzis, 1982). In another important article the same authors revealed how a company's ability to maintain its competitiveness in the long run depends on how willing its managers are to continually review their own managerial patterns (Hamel and Prahalad, 1991). The theme of what produces effective behavior in performing the managerial role was outlined in a debate, the content of which has become “historic” and “classic” [Barnard, 1938; Drucker, 1954; Sayles, 1964; Mintzberg, 1973, 1975 and 1994; Quinn, 1988]. A variety of contributions found in the literature published on this subject provide examples of the skills that are required to be an effective manager, but to date there is no universally accepted model. A hypothesis regarding the skills that are applicable to real-world work situations is the one proposed by Fontana (1994), which is in line with the interpretation of the managerial role put forth by Katz (1955), and it offers a disassociated model with four main parts: a. technical-professional and managerial skills; b. behavioral skills; c. conceptual skills; d. administrative skills. Within this model, the importance given to each skill possessed by a manager may vary in relation to the organizational structure and the elements of the competitive environment. Without a doubt, transverse skills (behavioral, conceptual and administrative skills), in other words, the knowledge/abilities/personal resources that are required for effective work-related and organizational conduct have become increasingly more important in today's world. Training, which is understood to be a complex and global intervention that motivates a person to develop intellectual, physical or moral changes (Goguelin, 1972), may be an effective tool for acquiring and developing these skills. In fact, through appropriate didactic methodologies, it activates learning processes which, if managed well, may generate a change in people's behavior, resulting in improved work performance and the attainment of objectives. The awareness that training assumes a role of not only primary, but strategic importance in today's workplace cannot be disputed (Quaglino, 2005). However, just as business horizons change, the tools used to develop skills must also evolve. The most recent special report on managerial training by *The Harvard Business Review*, which was published in 2008, identified the need to rethink and offer extremely pragmatic training methods and programs that

are able to guide participants towards an immediate use of methods, tools and applications. The training needs of today's managers include *life long learning*, in other words, high-quality continuing education opportunities that can be easily used and allow individuals to constantly increase their knowledge and develop new behaviors. Therefore, this is training that is inexpensive (in other words, it involves fewer class days and it does not require residence), of a *just-in-time* nature, which is able to convey content that can be immediately applied to daily work activities and delivered according to individual needs, characteristics and deficiencies (Marinensi, 2002). Traditional training, with *face-to-face* classroom lessons, is not able to respond to these needs (Ranieri, 2005). This has led to the birth of Distance Learning, which is able to develop new learning methods and free up didactic interventions from the limitations that are associated with the need for a physical presence (Calvani, Rotta, 2000). The development of Distance Learning has been significantly influenced by ICT (Information and Communication Technologies) and it is possible to identify three "generations" of distance learning (Garrison, 1985; Nipper, 1989; Trentin, 1998, 1999). The criteria that differentiate these three generations are essentially the means of communication and diffusion used for distributing the courses, the type of communication that is established among the subjects involved in the learning process and the level of interaction and finally, the possibility, or lack thereof, of carrying out collaborative activities (Marinensi, 2002). Today reference is no longer made to Distance Learning; this term has been replaced with *e-learning*, which increasingly defines the combination of new methodological and didactic opportunities that exist and which, as a result of data communications and Internet technologies, allow for experimentation with particular attention to open and flexible models on the one hand and the key role of the pupil on the other (Calvani, Rotta, 2003). With the advent of personal computers and networks (and more specifically, the Internet) the term Online Education, which is based on the idea of communication and learning as social processes, was introduced. A number of authors have found a valid solution to the training needs of organizations in online education. The main advantages that have been identified and shared by authors who have published literature on the subject of e-learning, and more specifically online education, include the opportunity to eliminate time and space barriers, the possibility of customizing courses, thereby creating a variety of different offerings tailored to the individual situations of users and the chance to promote common and cooperative learning opportunities (Harasim, 1990, 1995; Palloff and Pratt, 1999; White and Weight, 1999). However, there have also been a number of contributions by authors who have instead highlighted the limitations associated with e-learning, which have been basically classified as follows: a. technological limitations; b. limitations associated with personal skills; and c. limitations pertaining to a lack of physical interaction. In recent years, failed experiments with e-learning have taken place within organizations; this, according to many authors, can be attributed to erroneous planning criteria, which must differentiate themselves from those used in training initiatives that require attendance. According to some authors, no matter the content that an online course must deliver, the design of the didactic materials that make up the course must occur with respect for certain principles: *customization, interactivity, mod-*

ularity and reusability. The notion of *modularity*, in other words the ability to separate courses and their educational content, is one of the most recently studied areas in the framework of the extensive body of literature on e-learning (Fini, Vanni, 2004). It is within this context that the idea of learning objects (hereafter referred to as LOs) was born and developed. For some years now, this concept has become increasingly popular in the world of e-learning. The very structure and features of LOs have induced a number of authors to confirm that these “objects”, the LOs, can provide a valid solution to corporate training needs (Brandsford et al., 1999). The majority of contributions and cases for applying LOs to systems that have been published in the literature on this subject have been concentrated mainly on technological attributes, standards and those issues relating to the construction of the system, such as, for example, the levels of specificity and guarantees of interoperability (Wiley, 1998; Singh, 2000). Instead, there have been fewer studies regarding those aspects that relate to understanding whether or not LOs are effective in learning processes (Lamb, 2003). For some years now, there have been heated debates among scholars and researchers of distance learning regarding the possibility of using LOs as a learning technology. Three main schools of thought have been included in the literature on this subject: 1. those who are firmly convinced that LOs represent the future of training and that they will gradually replace traditional learning methods; 2. those who sustain that in reality, the LO model is an “empty” form of technology; and finally, 3. those who, even if they are not completely convinced, still acknowledge the utility of LOs in bringing training closer to the needs of both individuals and organizations.

This research project, which has the final objective of evaluating the efficacy of new multi-media information technologies on learning processes targeted at the development of managerial skills, can be included in the context of this literary debate.

For this purpose, research has confirmed the study of an actual case of a multi-media training initiative based on the LO model, which was conducted inside a large Italian company, Wind Telecomunicazione S.p.A., to develop the managerial skills of its management population.

The objective of the research project was to understand the impact that this multi-media training initiative had on the managers, attempting to identify the interest levels that were demonstrated, their impressions regarding the use of LOs, the benefits and drawbacks encountered in the application, and to investigate the motivations that can induce forms of resistance regarding the use of this training model.

In sum, the study tried to answer the following research questions:

- What was the level of interest that the multi-media training initiative aroused in the managers?
- What benefits and drawbacks were identified in the use of LOs?
- What factors caused forms of resistance regarding the use of the training model that was proposed?

This study intends to provide the following input:

1. enhance the literature of reference with study created with a qualitative-based methodology. In fact, a number of authors (Quaglino, Bianco, Ronco, 1996; Boldizzoni, Nacamulli, 2004) have demonstrated the absolute dominance in the literature of studies to evaluate the impact of in-

company training that are based approaches which are typically quantitative (pre-/post- tests, questionnaires, reaction scales, indicators, etc.), in order to obtain a “scientific” evaluation of the training results and the objective of constructing universally accepted methodologies. However, this approach tends to neglect the important contribution provided by the protagonists involved in the training events and the impact that it may have on the perceptions and visions relating to its role and the actual situation in which it is used (Boldizzoni, Nacamulli, 2004);

2. enhance the literature with a study of an additional model for the use of LOs in the area of managerial training;
3. offer the Company a contribution that allows it to evaluate the managerial implications resulting from the proposed training project.

2. METHODOLOGY

A qualitative-based investigative methodology was chosen to reveal the level of perception that managers had in relation to the multi-media training project they were involved in. This study is based on what the literature of reference (Corbetta, 1999) indicates to be the specific elements of the quantitative approach to be, which are different than those associated with a quantitative approach. The relationship between the *theoretical portion* and the “*field*” *research portion* was open and interactive. In fact, when compared to the quantitative methodology, the qualitative methodology places less importance on theoretical elaboration and the consequent reflections on the literature, because from a researcher’s point of view it is considered to be a possible conditioning factor that could inhibit his or her ability to understand the subject being studied. Therefore, this study does not contain any preconceived notions and an inductive approach has been followed: the theory was “discovered during the investigation”. With respect to the overall *relationship* between the *researcher* and the *environment being studied*, the researcher’s role in this study was that of a mere observer of the situation who abstained from manipulating, interfering with or disturbing the situation itself, in line with the naturalistic approach. The study was conducted by developing a form of *psychological interaction* with the people who were interviewed and which was based as much as possible on a relationship of empathic identification in order to succeed in understanding their social situations “through the eyes of the subjects being studied”. This perspective of psychological immersion with the subject being studied, which obviously did not allow the researcher to remain indifferent or neutral, represents one of the main drawbacks of the research project itself. Therefore, during the research project the subject assumed an active role rather than a passive one, as would occur in a quantitative research project. Consistent with the qualitative approach and with what has been mentioned up to this point, the study applied a destructured, open *research design* model that was created throughout the course of the study. The chosen *sample* is representative of the organizational areas of the entire management population. The sample was not selected according to any numeric criteria, but was instead linked to the comprehension of the phenomenon. The subjects that were involved in the study were chosen based on what

was revealed in the feedback reports that were issued by the e-learning platform that was used to distribute the training program.

The data and information useful for achieving the objectives of this study were revealed through the use of 3 instruments:

- document analyses supplied by the company itself;
- documentation used in the training program and processed by the platform,
- a semi-structured interview, conducted through a questionnaire containing previously defined, open-ended questions in order to guarantee an in-depth examination of the relevant issues, but which also allowed the subjects being interviewed the most ample form of expression.

The interviews that were held with the managers, which were conducted approximately three months after the program ended, were carried out along with some representatives from the company's Training and Development Department. The questions that were asked during the interview were intended to investigate 3 main aspects:

- the manager's interest level in the training model;
- the benefits and drawbacks of the use of LOs;
- factors that contributed to forms of resistance with regard to the proposed training model.

The analysis and final presentation of the data was carried out according to an interpretive and narrative perspective.

3.CASE STUDY: WIND TELECOMUNICAZIONI SPA

3.1 Identity, mission, values and strategy

Wind Telecomunicazioni SPA was established in 1997 as a partnership among Enel, France Telecom and Deutsche Telekom (which left the holding company after just a few months), during a historic period for the very complex telecommunications market, since the fixed sector was still subject to extremely strict regulations due to the dominant presence of Telecom Italia, while two main players were already present (Tim and Omnitel – Vodafone) in the mobile sector thanks to a less severe regulatory system. In 2005, Enel decided to transfer Wind to the Egyptian telecommunications magnate Naguib Sawiris, the majority shareholder of Weather Investment (a financial company), who still controls Wind today through two companies that were specifically set up to execute the acquisition: Wind Acquisition Holding Finance SpA and Wind Acquisition Finance SpA.

Wind Telecomunicazioni S.p.A. and its subsidiaries are present mainly in Italy, in the fixed and mobile communications sectors with the brand names "INFOSTRADA" and "WIND" respectively, and in the Internet services sector through its subsidiaries ITnet S.r.l. and Italia OnLine S.r.l. with the brand name "LIBERO". As of 2008, Wind is the third largest mobile services provider as well as the main alternative to Telecom Italia for fixed telephone services and it ranks first place among Internet providers. Moreover, the company represents the third largest operator for broadband Internet access.

Wind was born with the *mission* of becoming an integrated telecommunications operator that bases its own competitive positioning on technological innovation and service, a competitive price/service ratio, attention to customer needs, clarity and transparency in its sales offers and total employee involvement. The Company's main *values* are:

- *to exceed the status quo* by changing the traditional rules of telecommunications to create new market opportunities;
- *to become a system*, by guaranteeing integrated communications access for people and organizations with the best that technology has to offer,
- *privilege human beings*, by making the most of their creativity and creating the simplest and most appropriate communications methods for each individual.

Since 2005 Wind has changed ownership and this has resulted in significant changes within the company, especially with regard to its identity, its organizational and operational structure, its strategies and the way it faces the challenges of an increasingly competitive market. During the second half of 2007, Wind implemented an important activity that involved a revision of its corporate identity and decided to redefine its mission and create a set of values and principles that were more coherent with the company's actual situation and which people could perceive as their own and fully appreciate. From a strategic standpoint, Wind focused its attention on customers and their needs, guiding and directing the involvement of all of its employees and through the use of new technologies. More specifically, with the objective of improving its own performance, the following strategic and operational priorities were identified:

- promote the quality of its products and above all customer satisfaction by making the most of the customer experience;
- increase network capacity to meet growing market demands;
- manage the challenges of the regulatory framework;
- maintain an emphasis on performance and training and development by encouraging and motivating the company's employees.

These strategic objectives have been implemented in order to achieve an even more efficient management of its business activities, an increasingly efficient operational structure and most of all a more widespread business and customer oriented culture. One of the Company's main commitments is based on the awareness and belief that a transparent management of its stakeholder relationships, with a vision of reciprocal benefit and the positive consolidation of these same relationships, is essential not only for limiting risks, but also for increasing growth and competitiveness.

3.2 The role of managerial training in the development of specific skills

Training has always played a strategic role at Wind and the Company has made significant investments in this tool as well as in experimentation with innovative methodological formulas, especially in recent years. Consistent with the changes relating to the organization in general, 2007 was a year that

represented a period of significant change, also with regard to issues related to the development of the company's employees. A series of actions were implemented and were aimed at maximizing each employee's contributions, improving internal communications and making the work environment more and more stimulating and responsive to the needs of the company's employees. The in-depth review of the company's internal organizational processes, as a result of the increasing complexity of the telecommunications industry and the concurrent situation of a new shareholder required and still require a careful analysis of training processes, not to mention the need to focus more attention on training for specific subjects and areas of interest. The company's training policy, especially with regard to management, has been focused on training programs aimed at developing specific skills that are integral to the group's success. Consistent with the company's values and strategic objectives, Wind identified thirteen specific skills it considers to be crucial for its success and corporate identity. All thirteen of these skills are applicable to the entire corporate population and the management and human resources development policies have been aligned to promote them. They are: teamwork, customer focus, production, business orientation, effective communications, people management, planning, flexibility, excellence, systemic vision, energy, systemic thought. In 2007, the need to quickly align the company strategy resulted in a review of the company's training policy, aimed at creating training that was oriented more towards the future, with a perspective vision and the goal of satisfying more organizational and collective needs that were linked to the changes taking places. More specifically, a management training program for the group's executives and managers was implemented and was aimed at developing the new core skills, proactive behavior, involvement and a spirit of innovation, all inspired by the notion of Accountability. In recent years, this term has been increasingly debated and mentioned in national and international literature (Edwards, Hulme, 1996; Gray, Owen, Adams, 1996; Grandori, 2001) and it recalls at least two basic meanings or components: 1. on the one hand, provide external accountability, more specifically to the group of stakeholders, in an exhaustive and comprehensive manner, of the correct use of resources and production, in line with an organization's goals; 2. on the other, the need to introduce ideas and mechanisms for increased internal accountability to companies and corporate networks that are associated with the use of these resources and the production of the correlated results.

Wind defined the value of Accountability as a people's ability to a. go above and beyond the duties associated with their own positions and to assume the initiative to improve efficacy and efficiency (Innovation); b. be responsible for the company's objectives and take initiative to contribute in an active manner to the results (Entrepreneurship); c. be aware of limitations and act accordingly (Organizational Awareness).

In 2006 a training program was implemented to provide management with the motivation and tools required to promote a culture of personal Accountability. By fully exercising their own Accountability and systematically motivating their employees to do the same, management served as the primary tool for educating and influencing corporate culture. For Wind, this objective represents a necessary condi-

tion for achieving business results. The project began with a training program that involved Wind's entire management team (executives and managers) in two days of in-class activities in addition to one day of follow-up training that took place approximately three months later. At the final follow-up session, during the phase when opinions and feedback were collected from the participants, it was revealed that there was a need for additional information regarding the elements relating to the subject of Accountability, and in particular the acquisition of tools and models that could be transferred to daily work dynamics. As a response to the need that was expressed by the management team, the online training program *Windpills* was developed on a Moodle e-learning platform and designed for use with digital methodology and learning pills. The experimentation with the training model only involved a portion of the corporate population, with the objective, however, of replicating the training experience for the entire corporate population. The population that was involved included 138 managers, with an average age of 44, from a variety of organizational areas. 37% were from Sales; 8% were from Finance and CEOs & Top Management, respectively; 5% were from Human Resources and Institutional Relations, respectively; 3% were from Legal Affairs, 2% were from Purchasing and Research & Development, respectively; and finally 1% came from ICT, Quality Assurance, Supplies & Assets and Corporate Governance, respectively.

The multi-media training program, which began late in March of 2008 and ended late in July of 2008, was delivered with a weekly administration of three pills, for a total of sixty pills over approximately twenty weeks. Every week, each participant received an e-mail *alert* from Human Resources Management: a message that invited the user to access the platform (using his or her own login information) and make use of a specific package of three pills.

4. THE LEARNING PILLS

4.1 Definition and structure

A training pill is a very brief didactic course (with a maximum duration of 15 minutes) which is distributed in a multi-media format and is highly structured, making it possible to handle a training subject aimed at developing a specific skill in a complete and thorough manner (Amicucci, 2004). Learning pills were born within an area that has not yet been explored in-depth in the literature, somewhere between training and digital information/communications, identified most recently with the buzz word *info-learning* (Eletti, 2004). In this area, which developed in the United States during the second half of the 1990s, we find encyclopedias consisting entirely of info-learning pills, interactive manuals, self-explanatory outlines and procedures, mobile-learning and other tools that are expressed in natural language. It is an area of particular interest because it provides solutions to requirements for training and circumscribed and/or localized information: they are neither training "courses" nor "programs", but "atoms of knowledge" that are available upon request at the time and place they are needed. Each pill contains a series of LOs that provide both informational and training consistency. The model that was

experimented with at Wind included sixty pills, each of which dealt with a specific theme relating to Accountability. The pills were classified in three different areas: self, team and company (Table 1).

Cluster	SELF	TEAM	COMPANY
Objectives	A selection of 20 pills for personal growth: motivation, self-esteem and lifelong learning, skills relating to communication, organization, and the management of emotions.	A selection of 20 pills to be applied to the team in order to understand its dynamics and develop leadership skills.	A selection of 20 pills to develop work methods and tools and to share the basic values of a responsible company.

Tab 1. Cluster compilation of pills and their respective objectives

Each training pill contains six LOs, each of which is self-contained, interoperable and combinable, with a duration ranging from a minimum of thirty seconds to a maximum of two minutes. The LOs that are contained in each pill are selected and included based on four well-defined criteria which are essential for guaranteeing an effective learning experience for the pupil. These criteria determine the four areas contained in a pill:

- the *situational* area contains LOs that have the goal of creating a link with the pupil's actual experience;
- the *theoretical* area contains LOs that have the goal of providing basic knowledge and promoting the development of skills relating to the subject in question;
- the *edutainment* area contains LOs that provide opportunities for reflection, for exercising creativity and stimulating new visions of the subjects in question;
- the *learning reinforcement* area, where the LOs have the objective of providing participants with tools to monitor and evaluate their learning experience after making use of the training pill.

In the situational area we find *cartoons* or *fictional stories* and in some cases *comic strips*, that portray typical negative and positive situations relating to organizational behavior, with a final debriefing; in the theoretical area we find *multi-media mini-lessons* (tutorials), brief, voice-guided flash videos with texts and symbols to reinforce learning and memorization; instead, the edutainment area contains a *didactic game*, an *artistic stimulus* and *recommended reading*; and finally, the learning reinforcement area provides for a ten-question *interactive test* to help reinforce the learning experience and which reviews the most important concepts contained in the pill. Once the mini-test is complete, the general summary guide appears.

4.2 I Learning Objects

The model of learning pills is essentially based on an innovative and different use of LOs. The concept of LOs was born in the early 1990s in the United States and was the brainchild of Wayne Hodgins. It is not easy to provide a definition for LOs because there is no universally accepted meaning, despite the fact that there has been extensive coverage of this subject in the literature (Wiley, 2000; IEEE, 2001). In general, an LO can be defined as a learning unit that is self-contained, provided in a digital

format, with a well-defined didactic objective, of reduced dimension, that is useable and reusable and can easily be retrieved through specific descriptions or metadata (Fini, Vanni, 2004; Alvino, Fini, Sarti, 2005). The internal structure of an LO is composed of a *learning objective*, *exercises* and *assessment tests* (Heins e Himes, 2002; Epsilon, 2003). In addition to the internal structure, online didactic material may be defined as an LO if it has the following characteristics:

- *learning objective*: an LO is a didactic objective, not just a portion of content. It has the purpose of providing training that is aimed at improving the knowledge of those who use it;
- *reduced dimension*: an LO provides information regarding a relatively small learning unit;
- *reusability*: an LO may be used in a number of training situations, in several different places and over time (in order for this characteristic to be guaranteed, it is necessary that the LOs be described and constructed according to international standards);
- *self-contained*: the training concept or resource that expresses an LO must be independent and self-sufficient with respect to other LOs;
- *retrievable*: an LO must be easily retrieved. This is directly correlated to an accurate description of the LO, which is obtained through metadata.

Moreover, the Learning Objects have two additional requirements that make them very effective in responding to the actual needs of pupils: they are easily transferrable and combinable with one another. Some authors have summarized the advantages that LOs can offer to learners with a slogan that is very common in the United States: "Just in time, just enough, just for you". *Just in time*: with today's frenetic lifestyle, there is a need for resources that can be easily and immediately accessed; *Just enough*: only what is needed. Learners' needs do not always require a complete course; *Just for you*, in other words, created for pupils' different learning styles.

The literature of reference considers two possible methods for applying LOs:

- with the use of a repository, a sort of database in which the complete LOs or only their metadata are stored;
- with the use of integrated platforms: the LOs are entered into a system of complex software programs, specifically created for the integral management of online training.

There are still a number of different questions and subjects open to discussion regarding LO design. The most frequently debated themes are:

- the *granularity*, in other words the minimum required dimension of an LO. What is the proper dimension of an LO? Some authors sustain that LOs with high granularity, those that can be easily combined with others, are more effective. But when the granularity is too high, the LO risks losing its effectiveness. The duration of an LO that has been provided for by the experimental training model that was used for Wind runs from a minimum of 30 seconds to a maximum of two minutes;
- whether or not LOs are useful as learning technologies;
- the use of LOs as a best practice for all e-learning situations.

4.3 Basic theoretical approaches to the model

The innovation of the experimental training model used by Wind lies in the application of the LOs to the Emotional Learning model. Emotional Learning has its roots in the “emotional intelligence” approach, by which some theoreticians, based on a group of studies, believe that a relationship exists between *emotions* and *learning* and moreover, that emotions can facilitate the learning process (LeDoux, Boyatzis, Goleman). Based on the important role that emotions play in the learning process, the use of video games and fictional stories, simulations and intelligent agents in the training process is emphasized. Another theoretical approach that is quite similar to emotional intelligence and which serves as a basis for the creation of learning pills is the idea of “multiple intelligences”, which maintains that everyone has at least eight different kinds of intelligence, all of which must be developed through the learning process (Gardner, 1994). Those who study this approach sustain that people do not all learn with the same kind of intelligence: there are those who use a more linguistic-verbal type and others, instead, learn better through rhythmic-musical intelligence. This explains the importance of designing courses that include all of the different types of intelligence.

The theoretical basis of learning pills also refers to another approach that is quite widespread in the literature on adult learning, andragogy, according to which when learning courses are designed for adults, the following four characteristics must be considered: 1. adults have a *sense of self* that is essentially autonomous; 2. adults enter learning activities with a *baggage of experience* that must be considered and included in the learning process; 3. adults are *willing to learn* what they need to know to be able to effectively deal with real-life situations; 4. an adult’s *predisposition for learning* focuses on issues and is not organized according to subject matter (Knowles, 1984). In conclusion, the design of learning pills is based what has been sustained by supporters of the constructionist approach who emphasize that in order for the learning process to be effective, it must be constructed around the pupil (learning centered). The construction of the learning environment is important and must promote the construction of knowledge and not simply its reproduction; display the complexity of actual situations in dealing with case studies and provide ample space for practical examples of the theoretical concepts that are dealt with; promote reflection and stimulate reasoning by presenting a variety of viewpoints and multiple representations of reality; stimulate the cooperative construction of knowledge through collaboration with others (Dewey, 1953).

5. DEFINITION OF THE SURVEY SAMPLE

The survey sample was defined based on the information contained in the reports that were generated by the e-learning platform. In order to achieve the research objectives, the study will continue with the administration of semi-structured interviews among samples to be chosen based on the following criteria:

- a) people who have never accessed the platform (sample number equal to six managers);

- b) people who have participated in the training course up through the fifth week and have reviewed learning pills 1 through 18 (sample number equal to six managers)
- c) people who have participated more or less in the entire course and have reviewed 20 to 60 learning pills (sample number equal to three managers).

6. RESULTS

6.1 Analysis of the final reports

The e-learning platform used to distribute the training program provided for the tracking of all of the activities that were carried out by the pupils. The final reports contain information and data for each participant (user) relating to the number of learning pills viewed, the number of accesses made and total time spent on the platform. By clicking on the name of each user it is possible to access a detailed report of the viewed/non-viewed pills, the number of objects viewed and the time spent on each pill. By clicking on the name of the pill, a detailed report of the objects viewed by the user is accessed, the time spent on the object and the number of accesses is provided. An analysis of the data revealed that 62% of the population accessed the platform at least once, while 38% did not access it at all. A more in-depth analysis of the sample population that entered the platform at least once shows a significant difference in the answers provided by the participants of the training course. The initial impact of the training program was well-received and welcomed by a large portion of the population, but over the course of time (after approximately five weeks) accesses to the portal progressively diminished.

With respect to the number of pills viewed, it has been revealed that 57% have made use of 1 to 18 pills, following the course up until the fifth week, while 5% viewed between 20 to 60 pills, following more or less the entire course. The most viewed learning pills were those contained in the Self cluster (62%), followed by the Team cluster (23%) and finally the Company cluster (17%). The most “attended” session was the situational area, in fact, the cartoons and fictional stories were the most viewed learning objects (21%), followed by didactic games (15%) and multi-media lessons (14%).

6.2 Interviews

- **Managers’ interest in WindPills e-learning course**

We draw interesting evidence through the analysis of the report produced by the platform. Data show that most of managers involved in the e-learning project have been interested in the project. In effect, the report highlights that 62% of the population involved had accessed to the platform, at least once; even though the most of them visited at best 18 pills, giving up the course at the fifth week. The reason, collected throughout the interviews, refers to the lack of time which have obstructed the entrance in the platform.

- **Strengths and Weaknesses of WindPills e-learning course**

The structure of the course has fitted with participants' learning expectations. In effect, their impressions collected through the interviews show that participants have enjoyed both the friendly and creative aspects and open structure of the platform. Fictions, cartoons, and didactic games have been evaluated positively. We also find interesting to highlight that, Learning Objects help to reconsider your own behavior focusing on both positive and negative situations.

Another strength of the course is the possibility it gives to self-manage your learning experience.

Turning to weaknesses, we draw also interesting insights.

First, the respondents have highlighted that the duration of the single Objects should be shorter than it was. Moreover, some respondents have also highlighted to prefer fewer objects in less time.

The subjects of the single object have received quite an amount of critiques, which we push to reflect upon. In effect, Objects based on cultural advice (lecture, readings suggestion....) have been evaluated as boring and anxious.

Further, we also portray some possible future line of inquiry to upgrade the course. During the interviews, respondents sketched some developments of the course. First, the possibility to profit by objects also in off-line modality, because you can see and learn whenever you want even without a connection to the web ,they said.

We find another limit in the course: the lack of peer interaction. At least, some respondents have proposed to rich the course with some instruments allowing to communicate both synchronically and asynchronously with colleagues, for instance wiki or forum; thus, allowing to exchange and share learning experiences among learners. However, we find opposite evidence dealing with this issue. Indeed, some respondents have also stated that the learning experience has to be lived with your own.

Finally, we also have to underline that, as some interviews showed us, this e-learning course should be related to a classic learning experience (e.g. in class).

- **Individual perceptions of their own behavioral changes**

To study this item, we have administered semi-structured interviews to those whom have accessed the platform at least twice. We draw interesting evidence with regard to relational aspects. Certainly, who have attended the course have also improved their own relational skills. As they said, they have come to be conscious of some negative traits of their behavior which obstacle their relation with their co-workers.

- **Factors related to resistance to be really involved in the course**

An hard problem of the program studied, there is the fact that 38% of the population of study never accessed the platform.

As stated earlier, the principal reason has to be re-conducted to the lack of time.

But, we have also found that some of the respondents does not find the working context so suitable to live a learning experience, because they experience anxiety and they are exposed to a lot of other noise. Some have also highlighted that an e-mail from the HR dept. is not so effective as an instrument to communicate, because it is perceived as a “work instrument”. Thus, we propose to deliver the course through the organizational intranet, instead of using an e-learning platform.

7. DISCUSSION

In the current economic and organizational environment, people are the main determinants of the competitive advantage for organizations: in fact, they can acquire such properties, with their own competences, to become firm specific for the organization itself. Today, the life cycle of competences is more restricted. As they become shortly old, the ability to update and develop them quickly and with quality becomes a strategic competence. In particular, the existing organizations require specific competences - including the ability to think strategically, to understand and react to the changing scenarios, to take decisions under uncertainty, to negotiate and manage conflicts, to commissioning, and to lead team working – at all hierarchical levels but above all at that levels that require a specific responsibility. Education, defined as a deep and global intervention that creates relevant changes in the human intellectual development, can be an effective tool to acquire and develop those competencies. In fact, through appropriate educational methodologies, it fulfils the learning processes that, if well managed, change human behaviour, enhancing better professional performances and the goals achievement. The changes that shape current organizations have created new educational needs. In fact, there is an increasing claim for a less expensive education (with few face to face meetings), just in time and just enough, able to quickly implement theory in professional practice, in job activities needs, attributes and individual lacks. As a consequence of the drawbacks of traditional learning methodologies, e-learning is gaining momentum, since it allows to overcome the limits of time and space and to design self paced learning processes. It also eases the creation of learning sources, which can be more useful to students’ needs.

Indeed, managers interviewed stated they have found all these advantages.

However, there remains a problem that we need to investigate further, as we need to understand what are the conditions under which e-learning courses can assure suitable learning outcomes.

As stated by literature on e-learning, course structure planning should follow particular rules. Didactic modules and contents should be realized and transferred referring to the particular structure of the

learning course. At least, they should be personalized, reusable, and should assure interactivity among students.

We propose that Learning Objects technology perfectly fits with managers' learning needs, as they require training to be personalized and quick. Even though part of the literature states that e-learning is an empty training which lacks of the necessary commitment of persons involved (Fini and Vanini, 2004).

However, both training and organizational literature lack of studies that test explicit the impact of Learning Objects on managers' learning. Hence, we try to fill this gap in literature studying the specific case of WindPills. As stated earlier, this experience uses as a theoretical foundation Emotional Learning approach.

Broadly speaking the project has obtained positive results, involving managers in a complex learning trajectory. But, we also draw some limits in this experience. Indeed, the model of learning pills allows us to reflect upon a new way of thinking the relation between learning, training ICT based, and emotions in adults education, highlighting the importance of cognition and emotions in activating learning processes.

As stated above, the major weakness of the course studied was the absence of any instruments (such as forum, wiki) allowing participants to interact one another, which may cause isolation and confusion.

Limitations and Further research

First, the methodology of the study (i.e. qualitative) does not allow to generalize results.

Indeed, as it is a unique case of study we cannot confront the evidence of the study with other similar experience.

Another limit is that the study is completely based on managers' perceptions. Hence, we propose to continue the study using as dependent variable HR performance measure. Moreover, in our model, we don't consider coworkers' perceptions to evaluate managers' behavioral change.

In conclusion, we propose to replicate the study in a longitudinal perspective in order to highlight improvement in the structure of the model.

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