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Apertura e flessibilità nell'istruzione superiore: oltre l'e-learning?

Atti del convegno
Perugia, 13-14-15 Novembre 2014

curatori
Floriana Falcinelli, Tommaso Minerva, Pier Cesare Rivoltella

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SES-B1:

I MOOC COME SFIDA PER LA FORMAZIONE SUPERIORE

Designing an on-line learning environment for the qualification of Teachers: the case of the PAS in the University of Perugia

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Abstract

The purpose of this paper is to analyze the experience of blended learning conducted in the Path Enabling Special (PAS: training course reserved for staff working in schools for at least three years), at the University of Perugia. The research presented aims to investigate whether, and to what extent, the proposed on-line course has enabled students to experience different forms of meaningful learning, both individually and in groups; and in which they have been stimulated by critical thinking, creativity and metacognitive skills.

Keywords: Higher education, Lifelong learning, blended learning.

Introduction

Today, training in education requires the broadening of horizons into our current international lifestyle, contributing not only to the economical and social development of the country, but also to a cultural challenge which integrates the subjects to a global *citizenship.* This scenario refers to both educational institutions and training and educational policies.

From the program, "Education and Training 2020" (ET 2020) - strategic plan for the European cooperation in the field of education and training - it is possible to summize that educational and national training systems must address the necessary means, allow every citizen to completely fulfill their potential within the perspective of lifelong knowledge by taking into account learning in every context, both formal and informal, and at every level.

Strategic objectives to achieve:

- lifelong learning and mobility must become a reality, creating national qualification frameworks linked to the *European Qualification Framework*

- enhancing the quality and efficacy of education and training, allowing all citizens to achieve their key competencies;

- promoting equity, social cohesion and active citizenship through professional and essential competencies, promoting everybody's employability and the deepening of their education and training, active citizenship and intercultural dialogue; tackling the issue of the educative disadvantage, giving a high quality, early childhood education and an inclusive education;

- fostering creativity and innovation, including entrepreneurship, at every level of education and training

1 This article has been developed jointly by authors. **Floriana Falcinelli** wrote the section: Objectives of the on-line training environment project, Reflection on the course and open problems; **Mina De Santis** wrote the section: Introduction, The training course in PAS at the University of Perugia, Future prospects; **Maria Filomia** wrote the section: Students' assessment of the educational activity.

through the acquisition of transversal competencies by all citizens.

How would one answer this challenge to guarantee everybody an education that would be spendable on a global scale? " It is not possible to reform the *what* without thinking together about the *how:* it is not possible, namely, to proceed toward a coherent reform of the average concept of education and training without reviewing, work in progress, purposes and goals, and, in other words, the architecture of the educational and training systems" (Baldacci, Frabboni, Margiotta, 2012, p.3). Outlining the educational path, for those who deal with education and training, is already a step towards change. The first message comes from the Minister of Education, University and Research that, redefining the requirements and the methods of the initial teacher training of preschool, primary school and of middle and high school (Decree Law 10th of September 2010, n.249), outlines new scenarios for education and training, involving also Universities, dealing with not only initial training, but also *lifelong learning.* University must adopt a view about training that would take into account the complete life cycle and must become the "place where it is possible to restructure, reorganize, criticize and prioritize the acquired knowledge in different places also informally." (Feutrie, 2011, p.58-59). A training that goes beyond the *vocational specialism* (Alessandrini, 2011, p. 85), that would have as a final goal the education and training of the "*total man,* a man that must receive an integral, but especially moral education. A complete man, educated, helpful, open to the other and to dialogue." (De Santis, 2014, p.264). The Active Internship (in Italian Tirocinio Formativo Attivo- TFA) and the Special Qualifying Course (in Italian Percorso Abilitante Speciale – PAS; a training course for staff working in schools for at least three years), both established by universities, have been set up not only as courses for the achievement of the teaching qualification, but also as in-service training for teachers. The training not only allows the achievement of competences, but also makes it possible to renew them. For the teacher, training becomes an essential element "since the renewing of their relationship with new skills, new knowledge frameworks, society and human sciences instances is inherent to their profession." (Claris, 2010. p.10).

The training course in PAS at the University of Perugia

PAS are special qualifying courses for teachers' categories that have particular service requirements; they have been forseen with the Decree regulation 25th of March 2013 n.81 that modified the D.M. n.249/2010 and with the subsequent D.D.G. n.58 25/07/2013. Within these regulations it is highlighted how the training course should address: a) the verification and strengthening of knowledge of the discipline taught in the class of contest and the improvement of the pertaining teaching competencies; b) the acquisition of the digital skills foreseen by the European Parliament and Council on the 18th of December 2006; and c) the acquisition of teaching skills conducive to the education of students with disabilities.

The traditional teaching-learning methods and strategies employed in conventional university instruction do not meet the educational needs of students enrolling in these special qualifying courses (PAS). Although qualifying teachers already teaching this discipline or assistant teachers practicing for some years and working with these teaching experiences, may still find it difficult to physically attend courses for various motivations and reasons. Inasmuch as they already possess a degree, they still possess the need to experience new ways of building knowledge oriented towards this consideration, and in some cases, a review of current professional practices.

The professionalism of the teacher must be seen today as an hermeneutical "outfit" to wear in the season of the school of autonomy; the teacher is characterized as an hermeneutical-critic subject that knows how to give sense to his own doing and to the system he belongs to. (Laneve C., Manuale di Didattica, La Scuola, Brescia, 2011). For this reason, initial training must be set up as a virtuous circle of theory – praxis where the future teacher is put in the position of not only acquiring new knowledge in educational sciences and different disciplines, but also of organizing, linking, and reworking this new knowledge as it relates to the teaching experiences acted out in the classroom context. This is an extremely complex path; and hence, requires time and spaces that are different from those compelled by in-presence attendance and by traditional group work methods which are not always easy to carry out in the classroom with existing structures.

For this reason it is necessary to complement the in-presence training processes with *blended e-learning*

activities, as furthermore foreseen by the Decree that specified the starting up and organization of such courses (Departmental Decree n.45 del 22 November 2013) allowing for the carrying out of these courses and integration between in-presence educational activities, for a third of teaching hours and "study activities including activities in e-learning". Therefore, providing an on-line environment with flexible resources would allow the student to experiment different forms of meaningful learning, both individually and in groups, and could be designed and set up; and in which critical thinking and creative and metacognitive skills are stimulated. Such an on-line learning environment, open and flexible, allows students to negotiate their own educational "path" with regard to how, when and where to learn. This different teaching and learning setting opens up very interesting prospects, because alongside a traditional university education, mainly based on the attendance as required in a closed system, it is possible to complement a new way of training and educating, wherein the physical space to be shared, but the one of interactions, of construction and knowledge. With this in mind, it was decided to use the e-studium platform which is an adaptation of MOODLE, the open source environment, built according to a social constructive setting, continuously fostered and developed by a diffused global community which is very active in Italy as well. It was then decided to design and set up a teaching-learning environment according to the e-learning approach, that would allow the student to realize on line activities complementing those in attendance. This, in particular, has been realized with the course on LD created by PhD candidate Cristina Gaggioli. This on-line environment was furthermore connected the School Grant Foundation of Compagnia S. Paolo in agreement with the Department of Philosophy, Social and Human Sciences and Education, that foresees the possibility of following courses for teachers in training, particulary to one of these: Managing teaching (www.fondazionescuola.it/iniziative/formazione-on-line/presentazione). It must be clarified that, given the specific nature of the course, students, except for 30% of the hours of compulsory attendance in presence, could cover the remaining hours through activities performed in the on line courses, even though an effort was made to make these two moments continuous in the training project.

Objectives of the on-line training environment project.

While designing the learning environment and path, the following specific objectives have been identified:

- To complement and develop the educational activities in presence with on-line activities and carry out both with self-study modality and with collaboration activities in small groups
- To facilitate an open access to study materials and to moments of problematization of the course's topics through on-line discussion
- To foster moments of constant interaction with teachers and the tutors for necessary scaffolding
- To allow an expansion of the study contents through the building of specific materials by students along with the sharing of knowledge maps.
- To start up research courses on the study's topics through the use of on-line resources, fostering active participation of students in the building of knowledge
- To foster a collaboration process in groups for the design of educational activity
- To foster spaces for shared communication, discussion and consideration about the training experience
- To allow a constant assessment of the learning processes and students' self-assessment on their knowledge paths.

Students' assessment of the educational activity

At the end of the activities, as a structurally foreseen activity amongst the ones required by the course, two semi-structured questionnaires of on-line evaluation, to fill anonymously, have been submitted to the students. The first questionnaire for assessment of blended course of Education Sciences aimed to capture on a four level scale the popularity of the courses compared to all the activities proposed for the courses of Education Sciences. After the information needed to describe the sample, they were also asked to indicate what contribution the course could make to the progress school practices. The second questionnaire was designed to evaluate, according to a four level scale, the satisfaction of the participants specifically to the proposed online course, particularly: language, topics, navigation procedures; an open question assessed the relevance and effectiveness of the online course on teaching practices.

a) Participants

Those taking part in this research represents the universe of the students that have attended PAS courses at the University of Perugia. In order to describe the demographic sample, three items asking age, the class of contest and to specify if they were assistant teachers or if they taught any other specific discipline, were submitted to the participants. The sample's average age is of 40.93 years; the difference in age of the participants, which ranges from 29 of 56 years of age is very stricking. The participants were attending different classes of context; the mostly were the A033 with a 26.8% of the sample; only the 13% were assistant teachers.

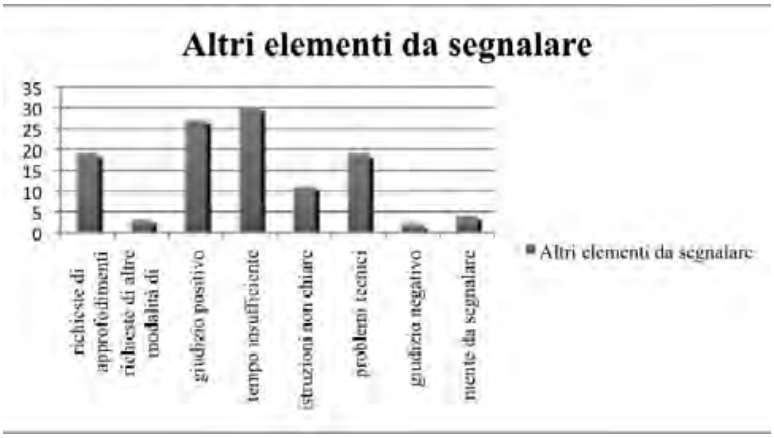
b) Outcomes

In the first semi-structured questionnaire concerning the on-line part of the course, besides the part concerning the sample description, two more questions have been posed to the participants: one asking to assess the liking of the on line part of the integrated course of Educational Sciences (Table n.1); one asking to point out elements deemed as important (histogram n.1). In order to assess the liking, a question was presented, composed of 11 items, using a four modes scale: 1 *not at all,* 2 *a little,* 3 *enough,* 4 *very much.*

	1	**2**	**3**	**4**
Is the language clear and the assignments feasible?	4%	24%	55%	17%
Are the chosen topics relevant to the students' needs?	1%	6%	51%	42%
Have the chosen topics been dealt with in accordance with the students' needs?	3%	16%	50%	31%
Are the surfing procedures, within the different web pages clear?	6%	26%	43%	25%
Is there a conformity between the stated objectives and the proposed activities?	2%	10%	59%	29%
Do the proposed activities allow to learn and modify one's own concepts and approaches to teaching ?	1%	11%	51%	37%
Have the proposed activities fostered a critical elaboration one's knowledges?	1%	10%	43%	46%
Have the proposed activities stimulated a reflection on teaching practices?	0%	5%	34%	61%
Have the proposed activities stimulated the starting of the building of skills?	1%	7%	42%	50%
Are you satisfied with the online course?	6%	16%	57%	21%
Do you think that the online course could be useful even f other colleagues and other users?	4%	9%	45%	42%

Table 1. Degree of liking

The analysis of table 1 highlights an overall positive evaluation on every indicator proposed. The contents are clear enough for 55% of the participants. For what concerns the objectives, 46% responded that the proposed activities stimulated a critical elaboration of the knowledge and 50% responded that it allowed for the starting of building of skills. On the whole, 57% is satisfied enough with the online course and 42% deems it very useful to suggest the online course to other colleagues. Through an open question stimulus, the participants were asked if they had "*other elements to identify"* concerning the online course. The answers have been analyzed through the Nvivo software for its qualitative data analysis. The analysis took place in subsequent phases, conceptually increasingly higher, and after the input of the answers to the questionnaire in the software, an initial codification, which allowed highlighting of all elements found by the participants and carried out. The codification took place through the attribution of nodes in sentences or parts of them. In the second reading, the initial codification was organized in macrocategories which are described in the following histogram.



Histogram 1 Further elements to highlight

16% asked for further investigation of some topics such as difficult classes, asked to analyze case studies; and more importantly, contents more adequate for Secondary School have been requested. 23% of the sample expressed a very positive view on the course online, while only a 2% expressed a totally negative judgment. Another group of participants consisting of 26% expressed the problematic aspect of time, valued as not sufficient to carry out the proposed course activities; 10% pointed out the little clarity of the assignments and 17% highlighted technical problems concerning the platform and the formats of the documents within the online materials; 2% asked for ulterior modality of teaching methods, in particular the setting of self-evaluation tests and the in-presence sharing of the work carried out on line.

The second questionnaire administered to the participants concerned the liking of the entire course. This article presents only the items concerning the online course. In this case also a four mode scale has been used: 1 *not at all,* 2 *a little,* 3 *enough,* 4 *very much.* The answers to the question "*was the online part of the course user friendly for what concerns its use and browsing?"* have been, in this case as well, positive (51% answered enough and 29% very much), only 3% answered not at all. It was also asked "*in what measure the in-presence activities could have been carried out online?"* - 52% answered enough and 20% very much. Interesting elements emerge from the analysis of two open questions that have been, also in this case, read and codified through the NVivo software. The first asked to express "*other remarks on the course".* A globally positive response was expressed by 38% of the sample, highlighting how the course produced: a professional emprovement, reflecting on the practices, and stimulated the attention of students with SEN and the use of ICT. 47% of codification highlighted, as a problematic aspect, the time dimension; and as in this case as well, seen as not enough time sufficient to carry out all the online activities at the same time of the school commitments

of the participants. This data has been confirmed by the second open question "*possible proposal for enhancement",* wherein 44% of the codification suggested a time scheduling and organization that would allow one to carry out the assignment in a more tranquil way and that would combine the times of training/working.

Reflection on the course and open problems

The experience that has been conducted, allowed us to understand how it is still difficult to involve teachers and pupils in e-learning educational courses, since both need a long process of training and support.

The fostering of an open source technological infrastructure such as MOODLE made it possible to effectively answer the educational needs and requests expressed by the project. In this regard an environment can result more or less valid in the measure with which it becomes an effective resource within a coherent educational design and in accordance with the needs of the different educational informative contests. The designing of an e-learning course is not ascribable to a simple combination of technical tools, but implies the undertaking of an innovative educational model and furthermore, the identification of specific working moments that are well defined in the planning, even though they are not according to a strict linear logic.

In this sense, it seemed important to us to highlight the need for fostering the training processes, especially those addressing adults, educational models that are less transmissive and more problem-posing, and to experience forms of self-assessment and process evaluation that would allow students to develop metacognitive strategies, to identify and enhance the necessary essential elements upon which to improve.

Equally, the role of the teacher, the tutor and of the same pupil should be re-thought, since an online path cannot be the mere telematic transposition of educational modalities thought for the attendance, but dictates new, specific processes. The same way of realization and presentation of the study materials must be carefully planned for the online mode, without falling, though, in the rigid logic of the *learning objects.*

It is not possible to forget that the efficient managing of an online educational project requires a valid technological infrastructure from a technical viewpoint, but also the integration of different human and professional resources with specific skills (technical, IT, educational, of content, etc).

Particularly this experience allowed us to be even more conscious of the fact that an online learning environment cannot be considered merely as advanced technological structures - as technical tools closed in themselves - but should also be analyzed as complex media. This deeply modifies the process of educational knowledge and communication, and as open technologies which allow the insertion of personal elements; and thus, can be manipulated and foreseen as flexible, explorative, and socially useful, making the educational intervention active, participated and creative for everyone - technical staff, teachers, and pupils. Everyone should find in this context a stimulating element of personal and professional research and growth.

Future prospects

To formulate future prospects for teacher training, the concept of the profession needs to be re-thought in addition to ways of professional learning. Changing paradigms becomes a necessity and an aim to pursue. It is not conceivable to think that giving lessons of *how you do it* or *how it should be done* is enough to guarantee competence amongst teachers. Teachers education is implicit in their daily activity and, therefore, the central node becomes the relationship between research and practice since "teachers have, as professionals, a corpus of specialistic knowledge acquired with training and experience" (Tochon, 1993, p. 26). Only by integrating research and training is it possible to feed the discourse on the *practice* and *the observation of the practice* that can explicitly shape the thoughts of the teachers; and "this way of doing research – that uses teacher's

subjectivity, on the premise that he is an active builder of meanings about his own educational action – makes research an indirectly educational activity" (Damiano, 2006, p. 179). Therefore, Training becomes a means through which commencing a process of transformation and reorganization of acquired knowledge in order to personalize the educational path, becomes effective based on the analysis of what engages teachers on a daily basis. A modality that would give intellectual stimuli and answer individual needs is essential, because what is missing today is an educational model able to answer individuality: "effective learning in adults is made of an active research of meaning where satisfaction and personal experience are balanced" (Marczely, 1999, p.41). Conducting research – training helps to enhance the quality of educational action; but most of all, implements research in the educational field and promotes new ideas for further fields of investigation. In this mode, this course of action elaborates on the *experiential theories* that provide tools to deal with every day life because "often formalist pedagogical theories are too abstract, they do not help realizing the hermeneutics of the context" (Mortari, 2012, p.92). In educational fields, there are no rules to apply; and, therefore the ability of reflecting well concerning specific situations is needed. The teacher will have to develop an heuristic and reflective competence to build a knowledge in order to answer practical problems: the classroom will be the workshop through which research, experience, reflection and personalization could enrich his professionalism and transform processes to constantly renew himself.

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Beyond Videogames. Gamification in higher education: an experience

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Abstract

The ludic dimension on the web goes beyond videogames. Alternated Reality Games (ARG) and gamification processes offer new didactic perspectives. Yet another possibility is offered by creative uses of digital technologies. This paper describes an experience of gamification in a laboratory within a degree course in Education. The results of such experience highlight the importance of the relationship between gamification and assessment.

Keywords: Gamification, Alternated Reality Games, laboratorial didactics, assessment

Introduction: beyond videogames

Whenever we address the issue of the relationship between games and the web, first thing we focus on videogames, into which a large amount of research has already been conducted. Lesser attention is paid to other ludic uses of the web. In this context it would be useful to emphasize the distinction between game activities and game-like activities. A game-like activity differs from a game activity in that it implies achieving a purpose that falls outside the scope of the game itself (Staccioli, 2008, p.19). Didactic uses of videogames enter into the rationale of game-like activities. Therefore our objectives with this research can be twofold. The first – taking into account the fact that generally speaking a videogame can be defined as «a game whose rules are automatically set by an electronic device» (Andreoletti, 2010, p. 83) – focuses on activities that are definitely game-like but have different modalities than those of videogames. The second perspective regards practices that are quite common on the internet. In both perspectives the focus should be on learning and teaching potentialities.

Between Alternated Reality Games (ARG) and ludic uses of the web

In the first stated perspective an important modality is that of Alternated Reality Games (ARG), where virtual and physical reality entwine. A well-known example illustrated by McGonigal (2011, pp.127-35) is that of Chore Wars (www.chorewars.com/index.php): the sort of competition the game requires – related to an activity which is very little engaging in itself - takes place in real life but the rules, the score and the game-like context are given in a virtual environment. Such game typology, apparently game-like, besides offering an approach similar to the one to Augmented Reality, makes it possible to conceive the relationship between hypertextuality and videogames from an innovative perspective (Fiorentino & Bruni, 2013, pp. 65-67) with significant potentialities in the field of education. The gamification process – which refers to the application of game-oriented mechanisms to situations that are not ludic in themselves (Zichermann & Cunningham, 2011) – although representing the logic behind ARG in ways that are limited and instrumental, is a resource that can be well used for educational purposes.

In the second research perspective ludic and creative uses of the web should be enquired about according to the criterion suggested by the artist and designer Bruno Munari: with reference to the traditional photocopying technology, Munari reverses its logic, moving the original during the reproduction process (Munari, 1977). Using digital instruments in a creative way with purposes that

differ from the ones for which they were created refers to a ludic dimension, often employed rather unconsciously, with possible learning and teaching outcomes. As an example I should like to mention the creation of word puns through microblogging thus subverting the blog's primary purposes (Bruni, 2012).

We can build a framework of ludic web-related activities (Tab. 1) pinpointing four typologies identifiable on the basis of two pairs of criteria. The first pair relates to the game dimension which can be either self-managed or instrumental. The second pair, implicit/explicit, pertains to the players' awareness.

Typology	Ludic dimension	
Videogames	Explicit	Self-managed
Game-like activities	Explicit	Instrumental
Ludic aspects	Implicit	Instrumental
Creative uses	Explicit	Self-managed

Table 1 – Typologies of ludic uses of the web.

The first typology is the videogame genre, the game-like activities differ in their instrumental dimension. The ludic aspects of the web – like *subvertising*, the practice of making spoofs or parodies of advertisements (Susca & de Kerckhove, 2008) or some of the management modalities of social networks – are often implicit for their very same authors. Creative uses imply new ways of utilizing digital instruments as is the case of word games play on Twitter (Bartezzaghi, 2012).

Playing at Unimol: the project idea

The experiment that was carried out consisted in turning a laboratory – the Gaming and Animation Methodology laboratory, whose target were the students enrolled in the degree course in Education – into a game where classroom activities and the use of a blog as a virtual environment were alternated and integrated. In the course of the first meeting a blog site was opened (Giocare in Unimol, http://giocareinunimol.blogspot.it). The project idea was described in the first post: «My proposal is to turn the entire laboratory into a game [….] The main idea is [….] very simple. Each ludic activity implemented in the laboratory is regarded as a mission to be carried out; each mission implies scoring points, the players' profiles and their scores are published online, games can be played at different levels, players can choose a level and try to reach it». Special attention was given to level definition. The traditional laboratory assessment mechanism does not do any justice to varying degrees of motivation and self-engagement, therefore three different levels were suggested. The first level, the basic one, was thus described: «In order to achieve success in a laboratory the minimum score required is 3000 points (in the case of a 30 hours laboratory) or 1600 points (in the case of a 16 hours laboratory). Some students may experience work or family problems. I can understand the fact that they may be attending the laboratory because they need to, not because they chose to. It sounds as if they told me: "Thank you for your suggestion but I have other priorities…" Theirs is a legitimate choice and one must respect it but nevertheless if they take the Gaming and Animation Methodology exam the maximum grade they may get is 26/30 even if they do their best» (http://giocareinunimol.blogspot.it/2012/10/giuni-giocare-in-unimol-presentazione.html).

The main objective starting from the very first level was to consider the laboratory as an essential part of the whole educational pathway, not merely an addition to the lessons. The students who were able to reach the second or third level had the possibility to obtain even higher grades.

The Missions

Only some of the laboratory activities were carried out in the classroom as they required further individual online work. The assignments to be completed and the mission to be carried out were set at the end of each meeting.

Fifteen missions were obligatory, others were optional. The missions required various tasks to be performed: documenting all what had been achieved in face-to-face laboratory practice, debriefing and careful consideration, writing and graphing activities in a playful way, games presentation and implementation, assessment. The missions and their related tasks can still be visualized in the blog.

Needless to say all missions were characterized by detailed task description, rules to be observed, points to be given and the due dates for tasks.

Discussion and conclusions

Students were asked to evaluate the course, in particular they were asked to single out one positive aspect of the laboratory thus to be repeated and a negative one to be eliminated. All the evaluations are still available on the blog laboratory. Although the considerations expressed are on the whole positive, some remarks were made with regard to gamification. If on the one hand the gamification mechanism was considered favourably, at least by most students, on the other three difficulties were detected. The first and lesser one relates to the technological dimension and the use of the blog. The second relates to the little time available. The third relates to the scoring system. The students wish the scoring system were more fine-tuned. We understand the students' difficulties, however we would like to underline the fact that the use of a blog and gamification have: a) made the laboratory activities transparent both as regards to the proposed activities and to what the students have carried out, b) made it possible for them to work longer hours and to reach levels of engagement never previously achieved.

The main point is the relation between gamification and assessment: a clear definition of tasks and procedures made it possible to apply highly structured assessment modalities. The playful approach helped put together the rigour of a rubric and objective criteria with high engagement levels. The link between gamification and assessment is currently developing along further lines such as the use of badges to certify the achievement of competences (Raffaghelli 2014) and is an interesting path of experimentation, though we are aware that a massive use over long periods of time would most probably cause high saturation levels.

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The experience of special qualifying courses (PAS) at the University of Foggia: an example of blended learning approach for the training of teachers

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Abstract

The University of Foggia offered for the academic year 2013-2014 special qualifying courses (PAS). The PAS training courses are aimed at obtaining teaching qualification for non-tenured teachers and for teachers of technical and practical subjects. The training involved the creation of an eLearning environment through the use of a Learning Management System and the integration between online and in presence teaching. The aim of this paper is to describe the experience of PAS and understand how the methodology of Blended Learning was applied for the training of teachers. In this perspective, the originality of the initiative lies in the analysis of the process of definition of Blended training that took into consideration the guidelines and needs of the different entities involved in the project (University, Ministry of Education, Educational Institutions).

Keywords: training, special qualifying courses (PAS), blended learning, ICTs.

Introduction

As provided for by national legislation (Ministerial Decree 249/2010) and later amendments, the special qualifying courses (PAS) offered by the University of Foggia for the academic year 2013-2014 were adressed to non-tenured teachers and teachers of technical or practical subjects holding the qualifications required by the Ministerial decrees 39/1998 and 22/2005, with at least three years of service (from the academic year 1999-2000 to 2011-2012) in public schools or in centers for professional training, but only teaching accredited courses for the completion of compulsory education.

The training process consisted of the implementation of a digital learning environment through the use of a Learning Management System (LMS), Moodle, which enabled the integrated use of online learning and in presence teaching. In particular, the PAS courses was attended by 361 teachers, divided into different classes of competition (Image 1):

CLASSI DI CONCORSO	TOTALE
A016, A055, A056, A071, A072, C040, C080, C180, C270, C290, C310, C430	175
C230	
C070, C130	
C150, C500, C510, C520	
A069, C380	
C450	
A075, A076	
A012, A074, C050, C350	

CLASSI DI CONCORSO	TOTALE
A017, A019, A033, A043, A050, A051, A052, A59, A70, A245	186

Image 1 – Participants and their relative classes of competition.

While designing the entire education program, one of the objectives was to review the methods for planning and delivery of education services. This aspect required a change in the organizational structure of these services and, therefore, the reconsideration of the professional role of the teachers

and their expertise (VV. AA., 2011). The aim was to co-construct "an innovative didactical knowledge, which, used by teachers in schools and shared, changed the the public opinion and enabled the adoption in the realm of scientific research of experiential models, that can be used for the training of teachers, creating a virtuous circle that represents the first condition for the construction of a quality education system" (VV. AA., 2011, p.77-80). Therefore, while designing the program it was crucial for teachers to "recognize that their learning has been influenced by a significant amount of experiences as well as by expectations and very specific educational needs that make them expose themselves when they come into the classroom" (Limone, 2012b, p.VII).

Blended learning in teachers' education: description of the experience

In order to strengthen both the didactical knowledge related to the taught discipline in the class of competition (Departmental Decree 45, 22nd of November 2013 - PAS Organization) and the acquisition of skills related to the use of digital multimedia languages - as required by the Decree 45 of 2013 - the University of Foggia, with the support of the ERID Laboratory (Educational Research & Interaction Design) has designed the curriculum through a blended methodology and has created a dedicated area in the eLearning portal of the University of Foggia, for the access to lessons, workshops and for the subjects that are common to all the different classes of competition (as indicated in Table 1):

Scientific sectors	Course	Attendance method
M-PED/03 Special education and pedagogy M-PED/04 Experimental pedagogy	Experimental education and pedagogy	75 hours, eLearning
M-PED/03 Special education and pedagogy	Media teaching method and workshop	15 hours, Blended eLearning

Table 1 – Academic plan of online courses.

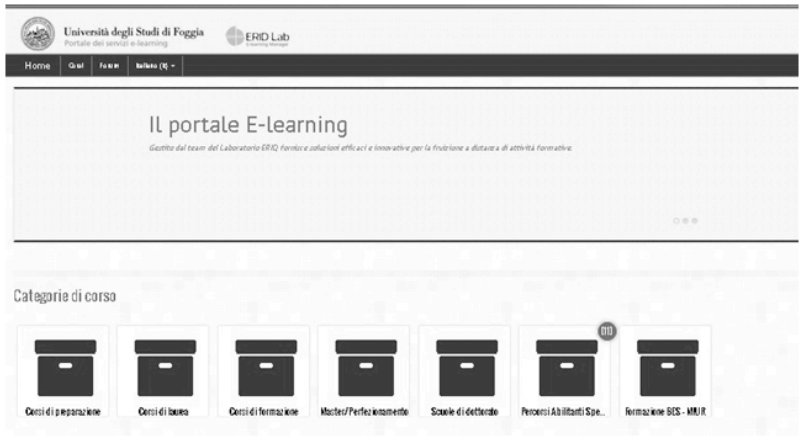

Image 2 - eLearning portal of the University of Foggia (http://elearning.unifg.it/)

The choice of technologies and specific educational resources has not been driven by a technologically deterministic approach, but by the wide range of social, cultural and professional backgrounds of the participants (Kundi, Nawaz, Khan, 2010). While designing PAS courses, the technology has facilitated the construction of learning environments that could enhance both the importance of the teacher, as the protagonist of his learning process, as well as that of the group, focusing on building a community of teachers and trainers within the classroom (Calvani, 2014).

This was essential not only in order to improve digital skills, but also to provide the tools and methodological resources aimed at integrating the acquired knowledge in the class (Limone, 2012a; 2012C; Graham, et al., 2014) and to avoid the phenomenon of *oversold and underused* computers and technology in the classroom (Cuban, 2001). "Thus, the future of technology in higher education depends on the training of particularly, teachers because it is these teachers who prepare the students as well as administrators to use digital tools" (Nawaz, 2011, p.2). According to Lentell (2003), teachers should encourage and guide their students' learning, in order to enable the development of new knowledge and understanding. In this perspective, the experience of PAS aimed at strengthening the pedagogical and didactic knowledge - prescribed by the above mentioned regulations - through the use of an online learning environment with the aim to customize the timing and access to educational content, develop skills for the use of digital learning resources and those related to the professional field (Lentell, 2003; Stigmar, 2005).

Thanks to Blended Learning (Bonk et al., 2003; Osguthorpe & Graham, 2003; Graham, 2013), online learning has been widely used to give importance to more theoretical subjects for which there has been a written assignement (dissertation). Although much of the training has been conducted online, the importance of in presence classes was not neglected (Bonk et al., 2003). The eLearning implied the interconnection of its components in two main phases: the development of contents and distribution and management of resources (Image 3).

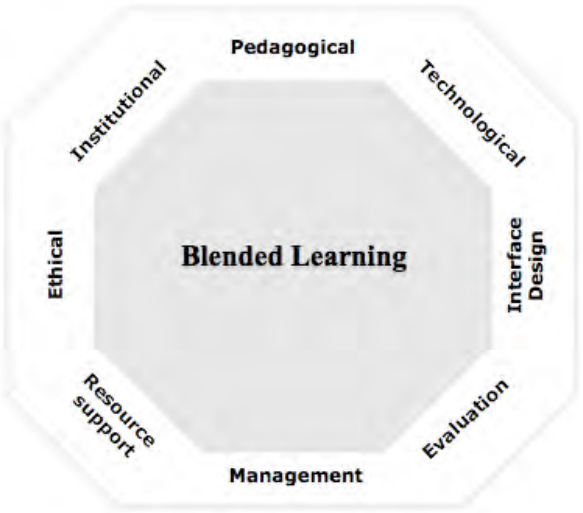

Image 3 - Blended Learning components according to Badrul Khan (Singh, 2003, p. 52).

From a methodological point of view, the use of a blended didactics represented a strategic resource for the management of educational processes enabling the improvement of digital skills useful for the teaching profession and strengthen the subject expertise related to the field of teaching. The literature related to this theme has shown that "a successful eLearning project depends on the creation of a match between the user-perceptions, learning styles and the learning environment and tools. The pedagogy, learning facilities and personalized learning environments are widely reported as the critical success factors. If they are positively and favorably perceived by the users" (Kundi, Nawaz Khan,

2010, p.3). The online learning environment was designed, in fact, to offer a strategic combination of different teaching/learning styles, creating a flexible and customizable context, with the presence of a number of tools for the synchronous and asynchronous communication with tutors and participants (i.e. forum).

Tools and contents of the courses: feedback on online learning

At the end of the training course a specific questionnaire has been developed in order to obtain an assessment of online learning by participants. It can certainly be interesting to take into consideration the opinions expressed by the participants about the use of the platform and the possibility to have access to additional resources in order to improve the timing and the learning process. In detail, 203 students out of a total of 353 answered the questionnaire. 34% of them attended the lectures at the University of Foggia, 61% at the affiliated Institutes in the region of Puglia. The semi-structured questionnaire was aimed at assessing the perception of usefulness and ease of use of online resources. Regarding the degree of satisfaction about aspects of online teaching, 43% of the participants expressed a high level of satisfaction. As for the level of ease of use and usability of the eLearning portal and the learning environment, 69% of teachers said they were very satisfied. Concerning the usability of the platform resources, more than half (60%) of the participants showed a high degree of satisfaction. In filling the open parts of the questionnaire, the participants gave the eLearning approach a high educational value related to the possibility of documenting and then systematize the knowledge acquired during the training (45% of the participants felt satisfied with the teaching methods used).

Conclusions

The special qualifying courses were born to perfect skills in the taught subjects by adjusting to the teachers' learning time and needs and by adopting the most suitable tools for the learning process of the single student. The blended approach has facilitated the building of bonds among the students and promoted a teaching / learning process based on individualisation and at the same time on the sharing experience. Thanks to a "continuum" between the platform and the participant, it was possible to create a cohesive learning experience, which has enabled the establishment of strong interactions with other students, with the resources and the institutions involved (Aspden, Helm, 2004). The uniqueness of PAS was defined by the full use of eLearning, with the enhancement of all the capabilities of the developed platform. It was therefore possible to identify the original role of the initiative by:

1) the reflection on an established teaching methodology through the support of collective programming practices;
2) the enhancement of the online educational activity thanks to the significant role assigned to the latter in the design phase and during the following delivery phase;
3) the construction of a curricular offer characterized by diversified programs in order to meet the changing educational needs of adult users;
4) the opportunity to reflect on a more efficient and syncretic use of in presence and on-line teaching by means of suitable IT tools and network services;
5) monitoring the progress of the training process through quantitative data such as, for example, access list, number of uploads and downloads of resources, amount of activity on all course materials (Adorni, Sugliano, 2004) .
6) the relevance of the tutor role in both teaching methods, face-to-face classroom and via computer-mediated activities.
7) the positive approach showed by the students for the teaching methodology used in these courses.

For these reasons, the PAS were an important training experience in the field of university education that contributed to the promotion of new educational initiatives and obtained considerable interest in fields of application different from those described in this paper.

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Notes

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MOOCs and collaborative interaction

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Abstract

MOOCs are online courses, free provided by a variety of platforms in order to disseminate content to a very wide audience; they are rapidly expanding their success, so that the most important universities of the world begun to project and deliver this type of free courses. The different courses' design and organization, and the relative platforms that support them, have been classified into two macro categories on the basis of pedagogical approach used: literature highlights differences between connectivist MOOCs (and platforms) and behaviorists MOOCs (and platforms). This paper wants to present the work design of the first two MOOCs provided by Sapienza University, analyzing their structure and the results of collaborative interactions generated; a second aim is to understand how it can be questioned the categorization originally created between connectivist and behaviorists MOOCs and to reflect on different modalities to make MOOCs collaborative.

Keywords: Open Online Courses, Collaboration, Knowledge Building, Interaction, Learning Communities

Introduction

Massive Open Online Courses (MOOCs) are presented as a mean to reach and train a large number of users. The name given to them brings out their purposes and characteristics (Ghislandi and Raffaghelli, 2013): these courses are massive, open to anyone interested in the topics suggested, and are distributed online as courses with learning goals and well-defined design curriculars.

In recent years the academic interest in MOOCs took the form of course delivering and publication of articles, that indicate the educational use (Ebben and Murphy, 2014), problems and potential of these courses. Among the problems identified in literature are those related to participation in the courses: there are high rates of users dropout, which amount to approximately 95% (Conole, 2013). The debate focuses in particular on the different methodological approaches chosen for delivering courses. One of the most well-known categorization is that between xMOOCs and cMOOCs: on one hand MOOCs designed with a possible behavioral approach, on the other connectionist MOOCs (Conole, 2013). This categorization distinguishes between courses designed as simple content delivery spaces, reflecting a metaphor of learning as a mere transmission of knowledge, and courses that refer to the connectionist model of knowledge, based on the idea that learning happens within a network (Downes, 2012). The debate is resumed in a critical way by Marc Clara and Elena Barbera (2013): as an alternative to connectivism, they propose the pedagogical model of cultural psychology, which involves the construction of shared objects, associated to dialogical and collaborative activity supported by the teacher.

We want to dwell on this aspect, making our own the idea that the most effective pedagogical approach to support learning within the MOOCs is the Vygotskian approach, declined in the Knowledge Building Community model (Scardamalia and Bereiter, 2006), which sees the student as active constructor, able to interact with others through the artifacts shared within the group.

In this short communication we intend to examine data relating to implementation and delivering of two MOOCs in Sapienza; in addiction we want to show how courses initially defined as xMOOCs may in some cases encourage and support collaborative knowledge building. The mere addition of forums, moderated or less by teachers, can lead to develop real collaborative learning environments also in MOOCs aimed to deliver contents.

Method

Sapienza University of Rome started a collaboration with Coursera platform, implementing two courses: a humanistic course in English, "Early Renaissance Architecture in Italy: from Alberti to Bramante" and a course in Italian on modern Physics, "La visione del Mondo della Relatività e della Meccanica Quantistica".

Both courses were delivered in the academic year 2013/2014, lasted eight weeks, and were structured on the basis of the typical features that a Courserian MOOC provides:

1) Video lessons: 21 in one course and 24 in the other, with a duration of about 10-15 minutes each;
2) Assessment Tools: multiple choice quiz at the end of each week, and a final test;
3) Supplementary Materials: file with research materials, links, pictures, glossaries, suggested readings;
4) Forum: spaces for discussion between teachers, students and tutors;
5) Course Wiki: collaborative writing spaces for students.

The two MOOCs were monitored by collecting data through interfaces provided by the Coursera platform; teachers have access to data regarding participation frequencies, students enrolled characteristics and tests results. It was also achieved a qualitative analysis of the interactions and materials produced by the students within the Forum and Wiki - collaborative spaces.

Results

Both courses reached a huge population: 12.816 students accessed the course of History of Architecture and 6.122 visited the Physics course (Table 1); some of these students started the course by taking vision of the first lesson (8.439 course History of Architecture, 4.783 Physics course). These data are probably indicators only of interest to the subject, but by analyzing the two courses results, we find that the dropout rates are in both cases much lower than those reported in the literature (Conole, 2013). By defining as enrolled only those students who watched at least the first lesson, we see (Table 1) that about 20% of the students in the course of History of Architecture (1.849 students) and 40% of the students in the Physics course (1.915 students) completed the course by viewing all the lessons.

Students who have …	Early Renaissance Architecture in Italy: from Alberti to Bramante	La visione del mondo della relatività e della meccanica quantistica
visited the course (at least one access)	12.816	6.131
watched the first lesson	8.439	4.783
finished the course	1.849 (20%)	1.915 (40%)
posted in the forum	693 students (2899 posts)	905 students (3.679 posts)

Table 1. MOOCs students participation

In the course of History of Architecture 693 students actively participated in the forum, publishing 2.899 interventions between posts and comments. The staff support within the forum was provided by a tutor, who moderated the forum with 51 interventions, providing some stimulating questions and answering specific questions about the course content. The inability to provide students with the videos subtitling and lessons slides, canalized the students energies towards a collaborative work, in order to solve the problem of materials' lack. A group of students drew up a completely spontaneous and collaborative document, shared among participants, containing the complete transcript in English of each lesson, supported by pictures downloaded from the web. The creation of these artifacts, developed from scratch and without any request from the staff of the course, allowed the beginning of a true community of learners. Students independently made use both of the wiki space for building and

sharing artifacts, and of the forum for organizing the community and reflecting about the content, building in this way further knowledge.

In the course of Physic most of the forums posts, as many as 771 (table 2), were posted by the teacher, proposing and supporting the creation of a sort of metacourse. The teacher supported and encouraged participation by answering questions about contents and course organization, but also giving students the possibility of building their own knowledge, by problematizing, proposing new materials or participating to new knowledge building threads started by students. This aspect assumed great importance within the new born community: in completely spontaneous way social networking groups came up: i.e. special groups of users, Facebook groups, and a blog dedicated to discussions on the course at the end of it (http://relativitaquantistica.blogspot.com).

Staff posts typology	
Course organization / technical problems	135
Reinforcing learning	65
Problematizing	24
Giving explanation about content	118
Course extension / metacourse creation	11
Finding other materials out of the course	32
Supporting the community participation	114
Participating of new knowledge building	272
Tot	771

Table 2. Staff posts typology in the forums of the Physics course

Conclusion

The interaction within the forums was very active in both courses, but in a different way between the two. In the first course, interactions developed primarily among students, leading to autonomous knowledge building, in order to cope with course difficulties. The interactions in the course of Physic was widely supported and encouraged by the teacher, who participated both supporting the students community's work, both problematizing contents that students were discussing.

These data make us reflect on the possible overlap between the two pedagogical approaches that were initially used in a distinct way to categorize the different MOOCs. The xMOOCs do not hold in reality a totally transmissive approach, but may allow the creation of environments populated by small learning communities and foster collaborative knowledge building. In many cases we see that participants themselves work together in a spontaneous and autonomous way, driven by the habits that the web and social networks lead them to have; it seems that the habit to use these social virtual environments acts as mover of some sort of autonomy in being able to build knowledge together. A required condition for fostering participation and knowledge construction is providing sharing spaces such as Wikis and discussion forums that enable communication and knowledge work organization. It allows students to make themselves agents of their own knowledge and that of the community. The clear distinction between cMOOCs xMOOCs is likely overcome, as well as some authors assert (Conole, 2013, Sandeen, 2013).

Some considerations for the development and design of a third Sapienza MOOC were born from experience in delivering these first courses. In planning the third course the role of collaborative activities designed and supported by teachers was considered essential. The MOOC "Humankind Recovering the Past and Saving the Universal Heritage" is going to provide dialogic enrichment activities that will include: specific forums led and monitored by the tutor for collaborative construction of artifacts, inspired by the Progressive Inquiry Model (Muukkonen, Hakkarainen, Lakkala, 2004), and interactive webinars.

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A readiness gap for Opening Up education by OER and MOOCs at the University?

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Abstract

Developments in Information and Communication Technologies are not always paralleled by an equivalent number of transformations in higher education institutions. Indeed it seems that Open Educational Resources have missed the objective of transformation in spite of the potential of Open Learning to transform education. This paper reports on a part of some qualitative research carried out at the University of Parma, a case study involving teachers from UniPR Co-Lab Research Centre who share the values of being alert to innovation and aware of the importance of Technology Enhanced Learning in the academic pedagogical landscape; it examines whether educators are ready and willing to adopt open approaches in both a pedagogical and technological perspective and whether they have the necessary competences to do so. The aim was to explore the perceptions of University teachers who might become involved in the use of Open Educational Resources (OER) and the organization of MOOCs.

Keywords: Open Educational Resources, open learning, MOOC readiness, Technology Enhanced Learning

Introduction

Developments in Information and Communication Technologies (ICT) — (Laurillard, 2004) are not always paralleled by an equivalent number of transformations in education (Mishra & Koehler, 2006) (Gráinne Conole, 2007) (Kinchin, 2012) (Bryant, Coombs, Pazio, & Walker, 2014). This also apparently happened to Open Educational Resources (OER) in spite of their potential to transform education (Gráinne Conole, Mulder, & Mairesse, 2012). Missing the objective of transformation seems to be confirmed by actions being proposed as necessary for fostering it ("Paris OER Declaration," 2012) (European Commission, 2013). Some research was carried out at the University of Parma to respond to the question whether educators are ready and willing to adopt open approaches in both a pedagogical and technological perspective and have the necessary competences to do so. The aim was to explore the perceptions of University teachers who might be or become involved in the use of OER and the MOOCs (Massive Open Online Courses).

OER and MOOCs for learning enhancement: readiness to open up education.

Technologies are described as being disruptive (Christensen, 1997) (Sharples, 2002) (Gráinne Conole, De Laat, Dillon, & Darby, 2008); however, huge changes in technology have not been followed by the same level of transformations in higher education institutions. Recommendations made to the Member States during the 2012 World OER Congress imply that open learning has still to be researched and facilitated ("Paris OER Declaration," 2012). Moreover, some research trends and initiatives ("OPAL | Open Educational Quality Initiative," 2011) consider openness as a situation in which "resources are no longer the sole focus (…) but the practices within a specific domain are the focus of education" (Gráinne Conole, 2013b, p. 250). Open Educational Practices (OEP) include technology, pedagogy and competences. The "Opening Up Education" initiative is an effort to improve the use/reuse of OER, starting from the belief that ICT Tools, OER and OEP may enhance education effectiveness (European Commission, 2013). In the Italian context, the results of a survey conducted in Universities were presented in 2013 and show a developing situation, in which awareness of OER has increased in the academic environment and respondents acknowledge the important role that OER can play in learning enhancement. The authors recognize a need for institutional strategies on OER, for competences and support inside institutions (Tammaro, Roncaglia,

De Robbio, Panto, & De Rosa, 2013). A further phenomenon has emerged since 2012, that of MOOCs ("The Year of the MOOC", 2012); the United States were the precursors, with Europe following suit; the growth-rate of MOOCs and open courses available shows a worldwide increase ("European MOOCs Scoreboard," 2014). In spite of this, experiences in Italy are not so frequent; at the level of single academic institutions no significant research nor evidence is available that focuses on the **perceptions** of educators and learners concerning their **readiness, in a pedagogical and technological perspective, to open up education in MOOCs with a view to fostering teaching and learning** (and about them having the necessary competences). Currently, the complexity of the educational environment calls for a change, and change management theories identify readiness as an important factor for its successful implementation. Two levels of readiness are therefore to be considered: **readiness for change** on the one hand, **readiness for Technology Enhanced Learning (TEL) on the other**. The former is considered here as a necessary condition to support or refuse a change, a level of possible involvement of the members of an organizations in change (Holt, Armenakis, Harris, & Feild, 2007) (Armenakis, Harris, & Mossholder, 1993, pp. 681–2) (Jones, 2005, p. 362). TEL readiness has been discussed in the literature as readiness of institutions for e-learning; Chapnick (2000) listed psychological, sociological, environmental factors as affecting it. Human resources were considered important by Haney & Haney (2002); Aydın & Tasci (2005) confirmed this and discussed three constructs (resources, skills and attitudes) for each of the listed factors (technology, innovation, people, and self-development). Guglielmino & Guglielmino (2003) distinguished between technical readiness and readiness for self-directed learning, and identified knowledge, attitudes, skills and habits as the main aspects to be considered. Nevertheless, there seem to be no specific studies available as far as readiness for open practices or MOOCs is concerned. People are key where learning is involved; indeed there appears to be a gap in research in exploring the real perceptions of those people, i.e. learners and educators who might use/create OER, adopt OEP, or participate in MOOCs. This study aimed to gain a deeper insight into the issue at the University of Parma, from the point of view of educators with a special interest in TEL.

The University Context

The University of Parma is a middle-sized State Italian University; two-thirds of its students live outside Parma, a factor that needs to be taken into consideration when online learning and the use of ICT to enhance learning are concerned. Even though no specific strategies are present for TEL, there are administrative structures dedicated to learning and services for students, and some Centres provide services or do research related to online learning. Among these is **UniPR Co-lab**, a **research centre**, which started from an idea of a **collaboratory** (Wulf, 1989) (Bos et al., 2007), between the members of the Department of Information Engineering and the Department of Classics, Modern Languages, Education, Philosophy. Research is carried out **to create competences for TEL and to develop interdisciplinary collaborative networks**. The **main value** shared by members is being **alert enough to innovation** and **aware of the importance of TEL** in an academic environment, with a view to **enhancing learning**.

Methodology

The research question and aims about understanding teachers' perceptions are exploratory and descriptive; a **constructionism epistemology** was adopted, as well as a **qualitative approach,** primarily relying on human perception and understanding. Due to the complexity of the context and to the need to understand and gain an insight into perceptions about open learning and the phenomenon of MOOCs in a context of learning enhancement, a **qualitative instrumental case study method** was chosen. The case study was carried out on a group of University teachers who had joined the UniPR CO-Lab Centre. **Purposive sampling** was chosen as the most suitable way of identifying information-rich sources and gaining comprehensive in-depth pictures, and a **sample of convenience** was built, considering such practical issues as time, availability and willingness to participate. **Seven teachers** were included in the sample — **from different academic disciplines and subject-areas — who share UniPR Co-Lab's values**, that is, **awareness of the importance of technology as a tool to**

serve learning enhancement in an academic environment. The **primary sources of data** in this study were **semi-structured face-to-face interviews**; a loose guide was designed and later improved thanks to an initial pilot interview. The process comprised seven stages: thematizing, designing, interviewing, transcribing, analysing, verifying and reporting. The **secondary sources** were a **document study and analysis**, in order to be able to describe the context and the operational world in which these teachers act, and to provide an insight into institutional elements of readiness for e-learning and open learning. The trustworthiness model was adopted to establish the value of the research, including the concepts of credibility, transferability, dependability and confirmability, and the "**constant comparative analysis**" strategy was chosen for the analysis of data.

Readiness for TEL, Open Learning, MOOCs

A theoretical framework for readiness for open learning and MOOC was drafted as a tool, i.e. a list of initial concepts and directions for interpretation, to which to add themes during the analysis (Ryan & Bernard, 2003, pp. 274–277): it consisted of a schema, where people-related aspects of readiness for TEL are shown and integrated with **knowledge**, **feelings** and **skills** (Bloom, 1956) (Anderson et al., 2000). According to the constructivist and social constructivist theories, learning is an active construction of meaning; teaching is about "making learning possible**"** (Ramsden, 1992, p. 5) and the teacher's role is being a guide (Kelly, 1991) who promotes, facilitates, mediates (Brooks, 1999). Nevertheless, teachers also play a learners' role since they constantly need to learn and experience how to promote and enhance learning more appropriately by using technologies, and are therefore affected by the support they receive. The **domains** described in Bloom's taxonomy were therefore added to the picture; both the **technological and pedagogical perspectives** were further integrated into the schema, as they influence the domains. Starting from the concept of institutional e-learning readiness, aspects were actually limited to those specifically referring to people and their perceptions: **content and knowledge availability, attitude towards technology, towards self-development, towards innovation, sociological aspects and collaboration, technological skills**. The framework was developed and redrawn as a result of data analysis and discussion.

Findings and discussion: readiness gap to open up education in a pedagogical and technological perspective.

Some interviewees state that there is no specific focus by the institution on their **pedagogical preparation**: teachers are chosen for their knowledge of the discipline and literally "catapulted into the classroom" and no guidance is given on "how to explain their discipline". A need to develop a specific teaching methodology is perceived and it is argued that if no real pedagogical changes were carried out in spite of ICT being available, this was also due a general unpreparedness from a pedagogical point of view: a need is stated for coaching, to allow teachers not to only feel as if they were "carriers for scientific information". Some technologically competent interviewees perceive the gap between technology and pedagogy: "to use technology to enhance learning, the application of suitable methodologies would be necessary".

Within the framework factors were identified as "teaching experience", "knowledge and comprehension of the right approach and tools for the pedagogical approach" (**cognitive domain**), "motivation as teacher", "attitude towards teachers' role / teaching approach", "feeling about pedagogical competences" (**affective domain**), and "ability to use pedagogical skills" (**psychometric domain**). Data collection recalls a gap revealed in the literature between a personal use of technology and its use for educational purposes in Italy (Ranieri, 2012) which is probably not very different elsewhere. (Gráinne Conole, 2013a, p. ix) argues in fact that teachers are recruited because of their subject domain knowledge and research expertise and reports that many institutions in Great Britain offer introductory courses in good learning and teaching practice. The teachers in our survey, however, do not seem to perceive any specific additional pedagogical knowledge and competences needed to organize and teach in MOOCs, if compared to TEL. One refers to MOOC as not being necessarily pedagogically innovative, of its being about presentations and quizzes, and there is a general concern over teaching methodology in MOOCs.

The data analysis highlights some gaps in **technological competences and skill;** however the gaps are not so great as to prevent respondents from using technology to enhance learning; there seems to be rather a need for an improvement and development of competences, together with knowledge of sensible uses of technologies in the educational context. Time is a common issue for the interviewees; finding time for training might be difficult, so coaching is rather considered useful to judge whether a technological tool is useful or not and understanding its possible application to learning. Some add that tools are only used occasionally as a "support" and often their potential use is unclear. Some describe how they bridge the gap by using an effective conversational methodology, applied thanks to the collaboration with a technician who also has the relevant competences as a learning designer. Not all the respondents share the same perceptions about a technological gap. Engineers are aware that they have a completely different approach to technologies and are quite self-efficient; nevertheless, they are aware that a need to support teachers may exist for those whose domain is not connected to technology.

No specific experiences are reported regarding the use of technology-enhanced approaches for OEPs and in MOOCs; the technological skills reported are mostly related to the use of Learning Management Systems, web sites or specific tools for language learning and engineering, such as social bookmarking tools, social reading platforms, blogs and others.

In spite of recognizing that the majority of MOOCs include digital contents as e.g. videos and therefore acknowledging that such an emphasis on communication might require the mastering of further technological skills and competences, most of the teachers do not seem to worry about it; the impression is that the weight of such a factor might not be so relevant if compared to their pedagogical competences.

Some respondents underlined that having available technologies is nothing new; rather the point is finding the right technology for the most appropriate type of pedagogy for the subject matter. "**Pedagogy and technology must go on together**", but technology has to be motivated and only adopted if it is a real empowerment in the teaching-learning process and it is necessary to think about "which technology" is suitable "for which pedagogy" (Mansfield, 2000). One respondent focused on students, who should be made to know how to use technology effectively to learn. There must also be a balance between the technological and pedagogical coaching. The **necessity for pedagogy not to be considered in a dichotomy with technology** was a cross topic in data collection, which is coherent with the literature on TEL (Perkins, 1991)(Maragliano, 1998)(Maragliano, n.d.). Mansfield (2000) claims: *"It is essential to understand just how pedagogy and technology should interact in order to crack the right combination to promote effective learning at all levels of linguistic achievement*" which is a similar approach to Gráinne Conole's (2012); interestingly, Conole et al. (2004) map tools for effective learning design, asserting that *"a better articulation and mapping of different pedagogical processes, tools and techniques will provide a pedagogic approach that is more reflexive and consistent with practitioners' theoretical perspective on learning and teaching"*. Laurillard (2009, p. 6) also sees the need to "*ensure that pedagogy exploits the technology, and not vice versa"*. Such an approach is important in a context where priority seems to be for an open approach rather than for pure content. Balance and attention to both technological and pedagogical perspectives might be one of the bricks upon which readiness for open education could be built and gaps filled.

Conclusions and implications.

The results have an explorative value and our conclusions are envisaged as a springboard for further research, since the idea of a readiness to adopt OERs and MOOCs with a view to Technology Enhanced Learning is complex and multi-faceted. More than a gap in the ability to use tools (skills, psychometric domain), our research evidence shows the acknowledgement of a **gap in the pedagogical knowledge, under the cognitive and affective domain**, mostly regarding the following aspects:

1) comprehension of the right approach/tool for the pedagogical approach;
2) sociological aspect of learning
3) pedagogical competences;

4) concerns deriving from insufficient experience of open practices.

The focus is therefore on the lack of confidence felt by teachers and the need to improve their knowledge not only of past experiences but also of the right pedagogical solutions and possible technologies to use for the pedagogical approach they adopt.

On the whole, **the gap in technological competences and skills is apparently felt as less crucial than in developing pedagogical competences**; moreover, mostly for those whose domain is not related to technologies, it was generally believed that it was not the teacher's job to be technologically competent, yet with effective support it might be possible for them to enhance learning through technology. Thus there is a general agreement in the data that the existing technological support is not enough; some teachers would like to be constantly supported in their choice for the right technology, or at least constantly informed, about how they can apply technology to enhance their students' learning. The perceptions of the support needed are diverse, but the data suggest **a need for fostering a unitary and shared approach**. Moreover, the necessity emerged for coaching that might be offered by professionals with a wide range of competences, which are not limited to technical aspects, and be carried out in a conversational and dialogue-based way; this seems consistent with the results of the study on OER by Tammaro et al. (2013) concerning the current lack of appropriate and competent institutional support.

What emerged is a cautious attitude, a non-regular adoption of open practices — apart from content delivery — and no experience with MOOCs, which is coherent with what is stated, among others, by Raffaghelli & Ghislandi (2013). Nevertheless, the data show that the **broad attitude towards openness supersedes the mere content**, and strategies and practices for the potential fostering of openness are suggested. By considering the cognitive, affective and psychometric domains as intersecting with the technological and pedagogical perspectives, **the framework of readiness** might be **a useful tool to evaluate readiness for open education in the context in the most holistic way possible**, a starting point for an evaluation of initial strengths and weaknesses at the University, when open learning and MOOCs are involved.

A matrix was also elaborated from the findings, that shows a tentative teacher profiling and positioning according to their perceived technological and pedagogical knowledge and competences. Different aspects were considered from the readiness framework, such as parameters to position teachers on the matrix. The "**Open Innovator**" is one who has knowledge in both fields, and is important if the aim is both to take opportunities and overcome challenges in applying an open approach to maximizing learning enhancement. Nevertheless, all profiles have characteristics that might be useful to the system. If teachers are "**PT curious**" their knowledge and skills might be improved, as motivation is important and they might make a difference when strategic decisions are necessary. The "**Tech Innovator**" technical competences might be shared; the same applies for the pedagogical knowledge of "**cautious innovators**", who hold a critical view of technology which prevents them from using tools in the first place; they prefer to integrate technology and pedagogy.

It might be useful to consider the matrix in a system, together with the readiness framework elaborated in this contribution, and to inform appropriate decisions and strategies, based on the university context.

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SES-B2:

POLITICHE AGITE: IMPLEMENTAZIONE E INNOVAZIONE DELLE POLITICHE EDUCATIVE

Strengths and weaknesses in the future of the e-learning

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Abstract

With the development of Information Communications Technology (ICT), we observe an extraordinary opportunity in cultural and communication processes, with relevant effects on the education system and educational, pedagogical and teaching models that govern this relationship. The potential of these techno-social environments for educational systems, but not only, raises new questions for a sociological reflection more attentive to new social dynamics produced by these technologies. We start from the idea that, despite widespread criticism, the immobility of the education system, and the absence of an overview regarding the use of these new devices in teaching practices, we note a significant tendency towards the change. So, in this essay, we attempt to:

• highlight differences in perspectives and models in use among e-learning systems and teaching practices;

• draw a reflection of risks and opportunities, strengths and weaknesses associated with the use of such techno-social environment in educational processes.

Keywords: *e-learning, education, Internet, technology, ICT, sociology*

Introducion

This essay is an extract of a wider reflection[2] interested to understand the effects triggered by the advent of ICT on persons and learning systems.

We start from the idea of the relevance of technology in the education system but also on the responsability of policy makers in relation to the necessity to promote e-learning policies able to ensure a vision of system. On the basis of these considerations, the research attempts to:

• highlight differences in perspectives and models in use among the e-learning systems and teaching practices;

• draw a reflection of threats and opportunities, strengths and weaknesses associated with the use of such instruments/techno-social (Vespignani, 2009) environment in educational processes.

So, the essay presents a brief reconstraction regarding the use of technology in teaching (§ 2); some results (§ 3) connected with these uses; a reflection regarding strengths, weaknesses, risks and opportunities to consider using these instruments and environments in education processes, conclusions (§ 4).

Teaching and technology

With the transition from modern to postmodern society there is an extraordinary change in the landscape of cultural and communicative processes, with clear outcomes for the educational system and educational and pedagogical models which govern this relationship. These processes, thanks to the development of modern communication technologies, more and more versatile, inexpensive and easy to use, have been incorporated by the systems of distance learning.

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[2] The search, realized on data of secondary nature, shows the ICT equipment in Italian schools and the variety of uses practiced in schools and universities of these tools and e-learning platform (Capogna 2014/a; 2014/b).

With regard to the changes which have affected the communication system in recent decades, we can observe a paradigmatic change from a concept of communication conceived as "information" to another considered as "participation".
Communication is the essential medium for any form of relationship and the basic for any learning experience. It is linked to the developments introduced by new telecommunication technologies. The communication appears as a multidimensional and polysemic concept. Moreover, it can be studied from different perspectives with various semantic variations (Mc Luhan, 1989; Mc Quail, 1983; Ong, 1986; Wolf, 1985) and different disciplinary approaches.
There is a widely shared opinion about the evolution of ICT and enhancement of communication as a social space. These relevant changes have had an impact on the evolution of Open Distance Learning (ODL), so the most significant theories of learning have been incorporated in this separation process that characterizes the learning transfer by the presence of the teacher. We may recognize diverse theoretical approaches to learning, and different seasons of the evolution of distance learning, due to the progress of information and communication technology, modified through practices and experiments aimed to promote learning processes mediated by computer.
Through a brief reconstruction based on secondary data, we try to sketch a picture of various experiences spread in the Italian context. On this theme, in fact, among the most significant delays which the Italian educational system faces, at different levels, there are the informative dimension, at local level, and the resulting lack of knowledge or vision system. This produces a lack of structured links between center and periphery, with negative outcomes also on decision making processes that accompany each debate on the education system.
Today, we can distinguish three main types of technologies in use in the university, open source; proprietary and free environments. A special type of proprietary platforms are developed by some on-line universities for the exclusive management of their learning environments.
From a cursory survey on web portals Universities, we can observe a significant spread of e-learning platforms open source in Italian universities, in particular Moodle.
We can also distinguish, in summary, three main approaches in the design of learning environments and e-learning by universities (Fig. 1):

- the first-one is the blended solution to support and integrate the traditional education; it is oriented to the expansion of markets, targets and students;
- the second-one is the e-learning solution, based on the electronic communication, which involves the construction of the course entirely in distance learning; generally it is oriented to specific groups of students (e.g. workers, adults etc.). Thank's to this tendence, in our country, in last years, we observed the proliferate of on line universities. In fact, today we have eleven on line universities authorized to give qualification legally recognized;
- the third-one is the model of open course wares, which does not release formal titles, differently to the two models above. These kind of courses respond to specific information needs or auto-update of persons who, regardless of their spatial location, are interested in precise content. This appears like a communication strategy can have multiple purposes: to make known their areas of intervention, to do self-promotion, to attract students, to expand markets, to enhance possibilities to build networking and bridging with the broader socio-economic context. In this type we can include massive open online courses (MOOCs) around which there is a spread debate about the sense, the value and quality of these learning instruments teaching. But we think that the creation of platforms through which to connect an increasing number of learners and teachers does not solve the problem of knowledge construction or, even less, that of translating them into innovative models of teaching. The risk, we run, is to create an education market where the only goal is the certification more than the formation and its socio-cultural impact on subjects and contexts. The change triggered by ICT within education and training systems is indeed far-reaching. It stands at the intersection point between technology, education and market. Often, e-learning is considered as a way to respond to requests from market which come from a growing and articulated demand for training, posed by the knowledge society and developing countries.

Kind of technology	E-learning environments	E-learning approach
Open source	Docebo/Moodle	Close system
Proprietarie	Garamond Web conference E-learning environment developed by On-line University	
Free	You Tube edu GoogleAppEducation I Tunes U and so on…	Open system
MOOC Platform	OpendupEd (EU) Coursera (US) Ud-x (US) Udacity (US) Future Learn (UK) Oil Project (Italia)	

Fig. 1 – Technology, environment and e-learning approach (examples)

Methodology

The reflection has been realized on data of secondary nature: Rapporti Anee (2004, 2006, 2010), Omniacom (2006), Eurydice (2011), ANVUR (2013; 2014); Docebo (2014), with the intent to:

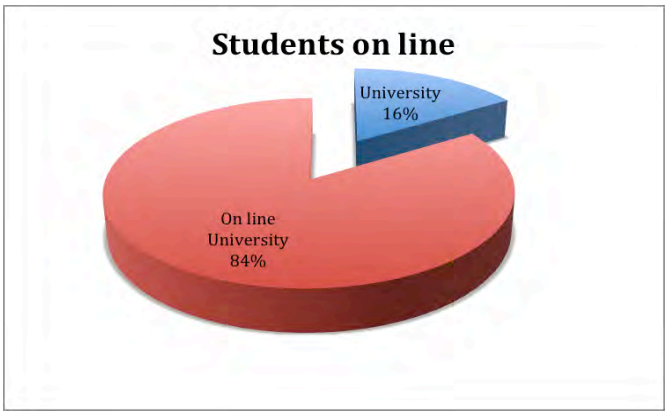
- analyze the trend and the variety of uses practiced in Italian universities regarding tools and e-learning platform (Capogna 2014/a; 2014/b);
- elaborate a SWOT analysis useful to develop a greater awareness about strengths, weaknesses, opportunities and threats that weitgh on the development of our country in the field of e-learning.

For the selection of secondary data, we considered the kind of contribution in relation to the aime of the analysis. Anee and Omniacom reports summarizing the trend of e-learning in Italy and universities in last ten years; Eurydice shows the kind of approache through which ICT are used in education contexts; ANVUR report illustrates the state of the Italian university on the basis of official data provided by the National Agency for the evaluation of University and Research, whereby we can have a clear overview about the current diffusion of online universities and courses of study; then, DOCEBO offers an interesting reconstruction of the future development of e-learning in the world.
All reports illustrate the extraordinary development of e-elarning in Italian universities and the growing importance that have taken on-line universities in our country. But all reports show some problems that we try to explain in the next paragraph.

Results

One of the most **significant problems** affecting the development of old and new media in education systems, and the necessary critical-evaluative reflection that should accompany every learning context in Italy, is given by the absence of a vision system of different levels of education, and lack clear empirical data on the use of these tools in teaching practices.
Although the Italian university arrived late to e-learning, since 2003 there has been a steady growth in the supply of educational courses, supported by e-learning systems. Italian universities that provide training courses organized based on e-learning systems increased from 24 to 45 out of a total of 77 (58,4%).

In 2006 six new telematic universities were established bringing the total to 11, evidencing, in this way, an Italian anomaly on e-learning universities, compared to more advanced European countries in which there are about one or two per country.
In most of the universities there are dedicated centers or facilities, although not all universities devote full visibility to this training method, which is not always readily available on the home page of the University. This shows a certain weakness in the universities policies regarding abilities and strategies to adopt an integrated communication plan, that can enhance and present the learning environment chosen.
In just two years, we registered a strong increase in the offer of Degree Courses in Distance learning. There has been a proliferation in the number of students who choose to study in an e-learning environment. The e-learning offered by telematic universities assume an increasing importance in the wider area of the university offer (CNSUV, 2010). In 2013 students attended on line courses has been 4071 (gr. 1) but only 16% of them attended a conventional university.
The report of ANVUR (2014) about the state of the Italian university shows that there are 96 universities: 67 public universities and 20 private universities, 11 of which are telematics universities. These collect a total of 2,6% of the total enrollment at the university: 4.071 are enrolled in on-line courses, while 5.066 courses use mixed-mode, with a total of 9.137 enrolled. In 2013 there have been realized 83 on-line courses and 6 mixed mode courses. These courses are distributed, according to the classification of Ministry of Education, as follows: 21 in the science area; 45 in social area and 17 in humanities. These 83 courses are divided into 7 single cycle courses; 54 Three-year degrees and 22 Magistral Degrees. In the academic year 2013-2014 the telematic universities advanced the call for thirteen new courses of study, but only two have been accredited, in the first instance, with regard to the system of Self-evaluation, Assessment and Accreditation introduced by DM 47/2013. In accademic year 2014-2015 University telematic universities have advanced a total of eight new courses of study.



Graphic 1: Students on line

Analysing the **composition of the population** enrolled in these universities, we find that, generally, these students are over 25 years of age; very often they are people with a past spent in conventional universities, or people who are already working.
In total, in the academic year 2007-2008, 249 undergraduate courses online were granted.
On the basis of the statements on websites, about 89% of Italian universities include in their educational offer proposals for distance learning.
The spread of e-learning courses has increased compared to previous years; in fact, we move from 32% of Italian universities who used this training method in 2004 to 57% in 2005, to reach 68,8% in 2006. There are 31 universities that offer activities in distance learning, 24 of which, corresponding to 77,5%, promote alongside this mode "pure e-learning". As in previous studies we have observed a significant rate of increase among universities that use distance learning (10 in 2004 and 28 in 2005), in 2006 the number of universities that use distance learning has risen by only three units to a total of 31 universities. Finally, the educational web enhanced, or ICT support traditional teaching, is affirming itself in the Italian universities, reaching 52% of universities offering on their home page site this type of service.

We observe an increased of Italian universities that offer training in e-learning courses, going from 73% of the sample in 2003 to 92% of the sample of 2006. A growing number of universities that have structured whole online degree programs courses, turning to a particular target (working students, disabled, etc.). This is especially true in the field related to education sciences, engineering and social sciences. This data is also confirmed by the ELUE (2006) research according to which e-learning initiatives conducted by Italian universities are concentrated in the areas of humanities (25%), engineering (23%) and social sciences (18%). Despite an appearance of immobility and a lot of criticism, not always well-founded, this short examination shows the significant turmoil that exists in the Italian university system.
In reference to the diversity of perspectives and **models in use**, we can observe different realities and it is currently difficult to delineate what might be the winning scenario. Of course, we can recognize that there is a spreading of hybrid models which use distance learning systems of first, second and third generation in various ways. Then, they often tend to use technology as a vehicle for transmission of learning content, characterized by lack of multimedia connotation. This should not be considered completely negative, because it also responds to the need to promote access and inclusion of subjects with technological, cognitive emotional and use digital divide (Dijk , 2006, 2011). In addition, on the basis of a comparison among different models in e-learning use, we may notice that some are inspired to spatial metaphors, so, they tend to reproduce in the virtual space a kind of representation of real environment; while others, on the contrary, stimulated by the idea that it is necessary to reinvent a method, completely, considering characteristics of virtual environments. For this reason, they prefer to focus on the social and relational dimensions of the network. Obviously, these are two ways that they are not in opposition to each other, but they can be integrated both on the theoretical and the implementative plane. The first model aims to organize the on-line learning environment geared to replicate symbolic spaces that represent the places of knowledge, to accompany the insertion of the new entry activating resources gained in experiential education. The second one winds around the role of actors involved in the training program. In this case, the emphasis is on the relationship between parties involved and different areas of interaction. In this case, therefore, the accompaniment is oriented to activate in the new entry inner and intuitive resources. The first model enables the routines of knowledge, while the second stimulates most creative and subjective dimensions.
Whatever technical and methodological choice is adopted, a clear policy of copyright is necessary to protect the quality and dissemination of materials.
It is important to remember, moreover, that proliferation of courses, tests and telematic universities, up to open courses experiences which are spreading across the border, to consider the transition from the traditional model of universities, that incorporate the process of building and transmission of knowledge, within rigidly determined borders and paths, in what is called multiversit@s, which gives rise to a multiplication and differentiation of opportunities for students and mode to do teaching. It is evident, however, that the multiplication of universities, courses and opportunities may not result in the risk of de-skilling of knowledge, nor of its certifications, especially in a country where (and as long as) the regulatory framework recognizes the legal validity of titles of study.

Finally, in order to desire to operate a reflection based on the logic of a **Swot Analysis (SWOT)**, we offer a summary of risks and opportunities, strengths and weaknesses, associated with the use of such instruments and techno-social environments observed in educational processes.
Among the **strengths** we can include:
• the liveliness of experimentations we register at bottom-up level,
• diversity of models and theoretical approaches which correspond to a variety of implementative solutions, strongly user oriented;
• the advanced state of experimentation that allows us to operate critical reflections and evaluation actions, in order to drive towards the continuous improvement of the quality both of e-learning and production of learning materials;
• the speed of information and communication that enables us to speed up, as never before, each type of exchange and relation;
• the opportunity to capitalize the knowledge and to build and multiply, in this way, the possibilities of connection and spread both inside and outside;
• the greater attention to the quality standards of process, contents and products;

• the skepticism that exists between a certain part of the teaching staff at different levels, which can act as a "critical eye", related to the risk of falling in love with technologies, methodologies and approaches;
• the attraction to younger students who live with difficulty the anachronism of education systems towards new and old media;
• the ease with which the younger generation move in these techno-social environments;
the potentiality offered by these techno-social environments to be used in different ways;

With regard to **weaknesses** we can mention:
• the chronic shortage of economic, human, professional, structural and technological resources, that for some years affect the educational system at all levels;
• the shortage, except when there is a total absence, of clear e-learning policies at the structure level (university and school);
• the shortage, except when there is total absence, of development centers inside education agencies and of the administrative apparatus connected to them;
• the absence of a copy right policy to protect specific know-how productions;
• the lack of skills and technical figures in educational institutions, at various levels;
• the lack of educational and methodological skills for the development of ICT in teaching by the vast majority of teachers;
• the lack of technical competences, vision and e-learning design among middle management and directive figures that deal of the education system at various levels;
• the significant resistance, still implemented by most of the teaching staff at different levels, which, as in the whole system of the Italian Public Administration, especially in schools, is plagued by gerontocracy;
• the risk of dispersion and fragmentation present in these technologies;
• spontaneity of initiatives which, often, remain isolated and unable to run critical mass and promote learning organization.

Regarding the **opportunities** we can indicate:
• the progressive lowering of costs in relation to the diffusion of ICT and technological infrastructures;
• the presence of diversified technology partners in this area which would be hypothetical partners in competition with each other;
• the increasing ease in the use of technology;
• the variety of ways of teaching made possible by the old and new media panel;
• a market that, as all research in this sector show (Haggard, 2013), is still expanding and able to offer new employment opportunities or, otherwise, to renew traditional crafts;
• the openness to the global market;
• the establishment of a clear idea of lifelong learning policy that could open training for a new 'student-target' and could become an opportunity for innovation and development of entire socio-economic sectors of our country as, for example, touristic and artistic, historical and museums;
• the variety of opportunities that are open to students who can, in this way, build customized learning paths, grafted on training needs defined and free from any space-time limit;
• the multiplicity of opportunities for teachers so they can take diverse career paths, experimentation, research and positioning.

Finally, for a reflection on **threats** we have to mention:
• the absence of vision and policies of development at the decision making level, with serious consequences on the possibilities of improving the technological gap of our country in this area, in comparison with new and old countries of advanced technology;
• the lack of public investment in this segment (but not only) in educational systems;
• the inadequate technological infrastructure support of our country (Caio Report, 2009);
• the absence both of a system vision, determined by a general lack of knowledge and lack of adequate information on the state of education systems at summit level, and, of a knowledge management policy;

• a certain lack of research on these issues, which has now been reduced by some institutions that operate continuously in this field, in order to produce a comprehensive understanding of the phenomenon. In fact, for any founded decisions, it is important to understand local implementation strategies adopted, to know effects and distinguish best and worst practices on which to assess and intervene with appropriate measures of support, transferability or correction;
• a considerable national delay in the ICT sector in the development of products, management software and contents marked by culture, creativity and Italian design, and applied to the traditional areas of trade and development which should be the core development of our country: tourism, artistic heritage, archaeology and museums; historical and cultural productions to spread the Italian language in the world and so on.

Conclusions

This reflection, based on a critical reading of previous research, shows that we need to mature, at the level of policy, a vision system on what could be the contribution of this sector in the overall framework of national development. We observed tha also in the last contrubute of the Government (The good school) there is not a clear indication about the question of massive online open courses on which we observed a significant investment in foreign countries.
In addition to, we need to advance a management awareness of the importance of developing the level of organizational contexts and micropolitics of organizational development. This is the first step to capitalize the wealth of isolated experiences and produce a real organizational change in a logic of learning organization and quality assurance of training at all levels, and in all modes of delivery.
We can consider that two closely related myths have inspired the widespread approach to ICT and their incorporation into the education system. The first refers to the irresistible power of globalization, the other regard the determinant effect of technology. The result is expressed in the widespread idea that the acceptance of e-learning in all sectors of education system is inevitable. This leads some through enthusiastic attitudes towards the use of new media, and others through the resignation of those remaining to look this inevitable development. However, as we have also tried to show in the research work, any uncritical acceptance must be repudiated. The form in which it is spreading the use of old and new media in education can not be passively accepted. Agreeing with Sue Clegg, Alison Hudson and John Steel (2003), here it is argued the need to counter both the technological determinism as the uncritical acceptance of a neo-liberal vision of technological globalization. The technologies are never neutral but are always a concrete product and outcome of the historical and social relations and, as such, the embodiment of power relations and technique capabilities emerging that derived from it. ICT, being manufactured, is the result of complex social processes, which are never free from the risk of gender differences (not just regarding differences among male or female) and accumulation strategies of their manufacturers and suppliers. Even looking at the way in which e-learning has developed in the university we can not avoid the fact that this has occurred, for the most part, under a managerialist fashion, sometimes more oriented to a ‘save’ or 'invest’ objective rather than learning. Now, we need to develop a new philosophy and practice in distance education, with special regard to the quality assurance of processes and results. Today, the e-learning we realize was unthinkable fifteen years ago. "*But technology alone is not enough, it needs of a broader vision*". We need of a "humanization" of development of e-learning policies to do not forget that the person is always at the center of learning and development. The risk I see is what to produce a dehumanizing reductionism. We need of a vision of elearning policies, because t”he essence of technology is nothing technical” (Heidegger, 1974).

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A training model for professional development of teachers in Italian Southern Regions

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Abstract

The Italian Ministry of Education has launched within the PON (National Operational Program), funded by the European Community, innovative training courses for the teachers of secondary schools in the South of Italy, that has involved in the last 3 years, more than 12.000 teachers. The training methodology has been a 'blended' one, offering to groups of teachers regular meetings with a trained tutor in one of the schools of the region, experimental activities and experience comparison, web activities with teaching materials to download and implement, web meetings with disciplinary experts, evaluation units, Forum for debates.

The teaching methodology proposed, the organization of contents, and the very organization of the teachers courses constitute a new model for teachers training in Italy. The first results collected show a large teachers satisfaction and an improved interest to new approaches in disciplinary education.

Keywords: Teacher Training, Blended Learning, Education, Lifelong Learning.

1. THE CONTEXT

The OCSE-PISA comparative survey carried out in 2000, 2003, 2006 and 2009, highlighted that many Italian 15-year-old students lack the basic competences and skills required not only in school life, but also in society.

The results are based on average data (OECD PISA 2007, 2010, 2013), but the National Analysis stressed the profound differences between Northern and Southern Italy and between different types of schools (INVALSI 2008, 2010). Data reveal (TIMMS, 2007) that in mathematics and science education in Italian Southern regions, for example in there is a possible responsibility of lower secondary school (11-14 age group), where students usually decide what type of upper secondary school (15-19 age group) they will attend.

In 2006, the Ministry reacted to these results by launching specific plans for teacher training. INDIRE was commissioned by the Ministry to design a professional development the plans.

INDIRE introduced two types of actions:

1) together with a group of experts, it carried out an in-depth analysis of the curricula, which led to the development of a complete and innovative content plan covering all the subjects and activities corresponding to the lower Secondary School level.
2) it developed a new teacher training model that combined the need of change in teaching/learning with that of bringing about a transformation on a national level. The result was a 'blended' teacher training model which completely integrates face-to-face teaching with online teaching.

The outcome were the three different multi-year national training plans for Italian, Mathematics and Science teachers:

1) The Poseidon National Plan (2005/2011) was a pilot project aimed at the development of methodological and disciplinary skills of teachers of Italian language, foreign languages and classical languages in a plurilingual perspective.

2) The M@t.abel National Plan (since 2006) is a project for the renovation and improvement of teaching and learning mathematics, aimed at mathematics teachers in the lower secondary school levels and the first two years of upper secondary school.
3) The ISS - Insegnare Scienze Sperimentali (Teaching Experimental Sciences) Plan,(2005/2011) was a training/ action-research project which was meant to systematically initiate hands-on learning at all school levels.

From these experiences, in 2008 the National Operational Programme 2007-2013 "Competencies for Development", co-funded by the European Social Fund (ESF) and administered by the Italian Ministry of Education, funded a Professional Development Project specially for lower secondary school:

1) PON Educazione linguistica e letteraria in un' ottica plurilingue is based on the Poseidon Plan.
2) PON Lingua, letteratura e cultura in una dimensione europea is an evolution of Poseidon, focused on the teaching of foreign and Italian languages;
3) PON Matematica (m@t.abel) has expanded the offer of M@t.abel about mathematical curriculum;
4) PON Educazione Scientifica is based on the ISS Plan.

The PON Plans, which takes their place alongside the National Plans, exclusively involves four regions, called the "convergence regions": Calabria, Campania, Puglia and Sicily. The Regions of the Objective Convergence in Italy are regions eligible under the Objective Convergence of the European Union because they have a GDP pro capita below 75% of the Community average.

The decision to dedicate a substantial portion of the resources offered by the Structural Funds to improve the skills of the operators educational campaigns reflects a systemic view of learning. A key role in the development of the educational system is fulfilled by the teaching staff. On this side, the Italian situation gets behind compared with other countries. The gradual and steady aging of the teaching staff itself sets the problem of life-long learning. This general consideration is even more valid if we evaluate the changes produced in the society, especially by technology. The improvement of professional skills of teachers is a priority, as far as the fight against early school leaving. For these reasons within the activities provided by the National Operational Programme 2007-2013 "Skills Development" (co-financed ESF) the training projects PON "SKILLS DEVELOPMENT" for teachers were realized. These projects have aimed at the training of teachers in schools secondary of the first and second cycle. The actions have focused on updating and strengthening of powers with respect to the teaching of Italian, mathematics, languages, science.

2. THE PROJECTS

Educazione Linguistica e letteraria in un'ottica plurilingue is a training course aimed at teachers Italian language, foreign languages and civilization, classical languages and literary subjects of the lower and high secondary school (http://formazionedocentipon.indire.it/?cat=11). Since 2009 the Plan trained 5802 teachers of whom 2675 obtained the full certificate of participation (Ch. 1).

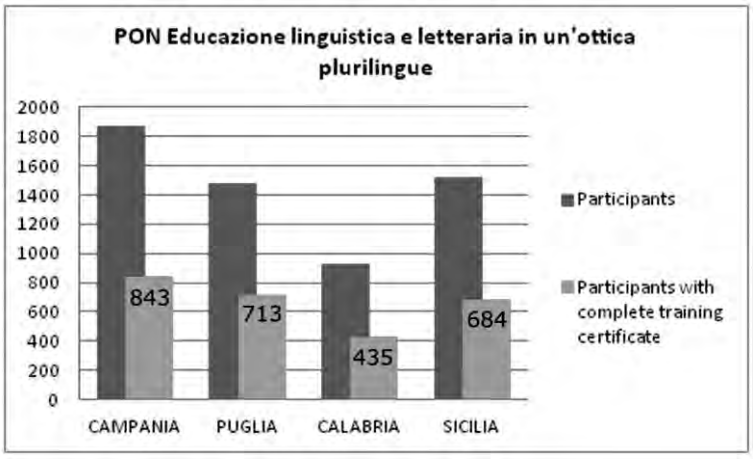

Chart 1 - Percentage of participants who have completed training on the total number of participants of the editions from 2009/2010 to 2012/2013 for the project Pon Education linguistic and literary perspective in multilingual.

Lingua, letteratura e cultura in una dimensione europea is designed on programmatic documents issued by the Italian Ministry of Education and promote and develop the professional skills of teachers of lower secondary school. The project is divided into two distinct subject areas: Italian (http://formazionedocentipon.indire.it/?cat=5) and foreign languages (http://formazionedocentipon.indire.it/?cat=9). Since 2009 the Plan trained 2311 teachers of whom 1010 obtained the full certificate of participation (Ch. 3).

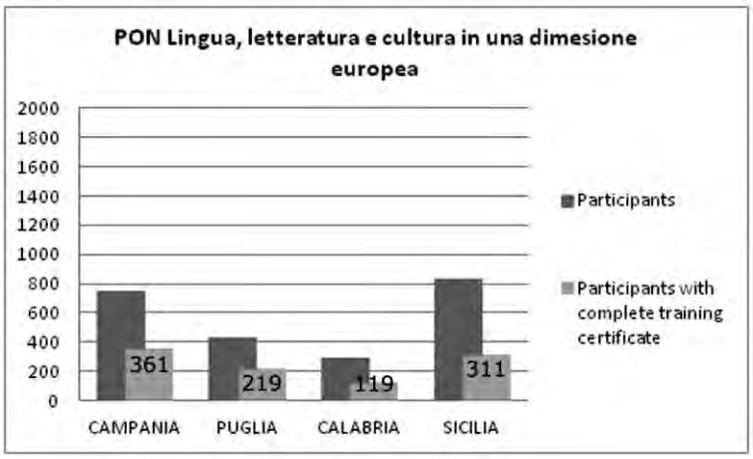

Chart 3 - Percentage of participants who have completed training on the total number of participants of the editions from 2009/2010 to 2012/2013 for the project PON Language, literature and culture in a European dimension.

Matematica (m@t.abel) is intended for teachers of mathematics at the lower and high secondary school (http://formazionedocentipon.indire.it/?cat=4). Since 2009 the Plan trained 3256 teachers of whom 1834 obtained the full certificate of participation (Ch. 4).

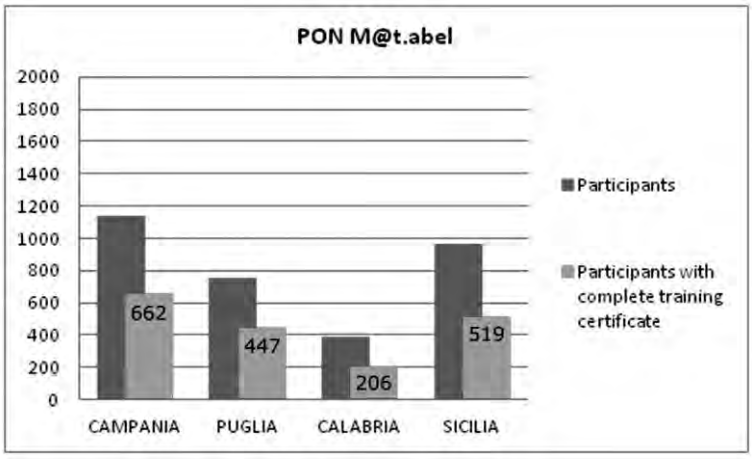

Chart 4 - Percentage of participants who have completed training on the total number of participants of the editions from 2009/2010 to 2012/2013 for the project PON M@t.abel.

Educazione Scientifica: The PON *Educazione Scientifica* is an innovative science training course *Educazione Scientifica* is an innovative science training course for the teachers of lower secondary schools (http://formazionedocentipon.indire.it/?cat=3). Since 2009 the Plan trained 1125 teachers of whom 627 obtained the full certificate of participation (Ch. 2).

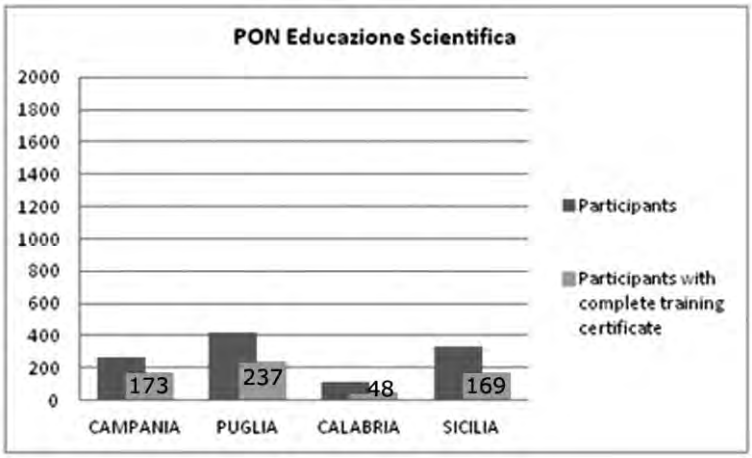

Chart 2 - Percentage of participants who have completed training on the total number of participants of the editions from 2009/2010 to 2012/2013 for the project Pon Science Education.

Here a recapitulatory graphic about the three annual courses in the convergence regions reporting the number of trained teachers who received the final certificate (Ch. 5).

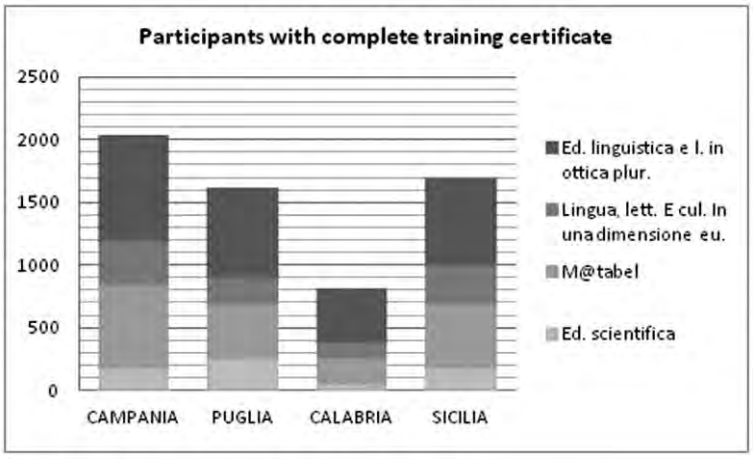

Chart 5 - Percentage of participants who have completed training and got the certificate.

3. TRAINING MODEL

3.1 The Aim

The primary aim of the project is not updating the contents of the school subject (though presumed essential), but introducing changes that can improve teaching practices.

The PON projec*ts proposes i*nnovative *pra*ctices organized according to different contents, methodologies, tools and levels of competence.

Unlike other proposals, the “innovative" approach of the projects engages the teacher together with the class: the course includes an experimental phase in the classroom forming part of the professional development programme.

The change, and hopefully the breakthrough in educational practice, takes place through practical actions, as well as through reflection on the conditions and effects of such actions.

In this virtuous circle the first actor involved in the activity (the teacher-participant) carries along with him/her others as subjects of the research study: the students, as well as the tutor, the colleagues at school, the experts, the territory (the socio-economic-environmental context in which the school is located).

3.2 The training programme

With slight differences between the single plans, the training programme consists of 100 hours, 80 hours to be carried out on a dedicated online platform and 25 hours face-to-face (for the most part in computer labs) in a school in the area selected by the regional school offices. The class groups of about 15 people, that meet both face-to-face and online, are coordinated by a tutor selected and trained by INDIRE. The course follows the school year and is offered as in service teacher training. The tutor is a central figure throughout the whole process and is obliged to follow a long training phase (about 3 months of blended training) where the teaching contents, the technological and methodological aspects are expanded upon. The tutor is guided by an expert through the whole course. The characteristic feature of the programme is its peer collaboration dimension, both in the content research phase and in the phase dedicated to reflection on the experience. An expert use of technology facilitates the course and effectively favours the creation of communities of practice.

The course, which takes inspiration from the research-action cycle, follows four phases for which goals, activities, face-to-face meetings, tools and documents to produce, are assigned.

Phase I – Analysis and self-analysis

Under the tutor's guidance, the course participants together analyse the materials, compare their own knowledge and experience with that of the other participants and with the new didactic proposals. In this phase the participants identify their training needs.

Phase II – Peer testing, choice and planning

Depending on the training needs, the tutor together with the participants choose the activities and topics to analyse and test with their colleagues in the school lab. The participants will therefore be able to choose the activities (or part of them) to adapt to their contexts in view of the class experimentation with their students. The resulting project, even though personal, will be the product of a shared study itinerary.

Phase III - Class experimentation

The chosen learning activities will be carried out in class with the students during the same school year. The participants will have the continual support of the tutor even during this phase and they can share their classroom experience and any teaching problems that might arise with their colleagues. The participants share the problems they encounter during the experimentation in groups and subgroups. At the end of the phase evaluation tests on the single activities are carried out.

Phase IV – Feedback

The experimentation results are analysed and a shared self-assessment on the acquired professional competences is conducted. On the basis of this assessment, the participants will be able to plan how to continue the work with their class.

Apart from the colleagues' and tutor's contributions, participants can also resort to advice from the authors of the materials by booking a videoconference session or in moderated forums where didactic innovations, strategies, contents and personal experience are discussed.

3.3 Instructional design

The each project core units were conceived as containers of learning activities aimed at developing knowledge and particular competencies. Each 'core unit' can be structured as follows:

1) Theory resources.
2) Learning activities.
3) Tests related to learning activities.
4) Video.
5) Online resources.

The *theory resources* are organized around core ideas and their goal is to update or further the teachers' knowledge of teaching methods in a way that is functional to the proposals in the learning activities. The *learning activities* are the activities proposed to the teachers during the training, and are linked to one or more topic core units and can be tested in class after re-adaptation. The learning activities also have their corresponding *tests*, and, in many cases, videos in which the experts propose workshops or give explanations about the activities.

4. RESULTS

A cross-monitoring of the project was carried out for the latest edition of the courses (2012/2013). This highlighted strengths and weaknesses and prospected a path towards a renewed design for PON 2014-2020.

Starting from the documentation from the four disciplinary projects, it has been identified criteria and tools for the detection of qualitative and quantitative data.

For the detection of quantitative data we used: the database with the records of the participants; tutor, "scuole presidio" schools of service; the database of the online training platform and a questionnaire CAWI.

For the detection of qualitative data, focus groups were organized with trained teachers and tutors plus interviews with school principals where the courses were taken place.

The figure below (Fig. 1) shows a summary of the survey results in the form of strengths and weaknesses and the reflections that followed them.

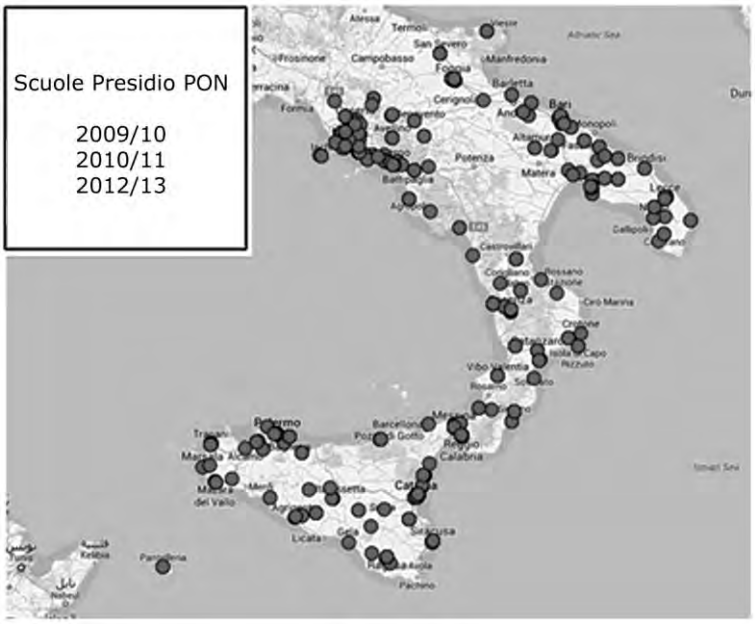

Figure 1 - Distribution of the "scuola presidio" that have implemented at least one PON course disciplinary edition 2009/2010 to that of 2012/2013

4.1 Strengths

Analysis of the data revealed a strong satisfaction with training and a consequent motivation of the participants to professional development.

The major element of satisfaction (Tab. 1) is about the tutor who is a teacher / disciplinary expert, especially with regard to the function of Facilitator / Counsellor (Keddy, Johnson, 2011). The tutor, in fact, is called upon to support learners in understanding how the environment works, animating and moderating communications and to organize tasks and deadlines of the class online. This is consistent also with respect qualitative survey which shows a fundamental contribution of tutors especially in the early stages, in the grip of confidence with the programming of the course, the learning content and multimedia tools.

Assessment on the ability of the tutor (Scale 1-10)	Average net of participants with voting homogeneous (0 to 10)
Organizational skills (N = 249)	8,0
Mediation of the relationships within the group (N = 254)	8,3
Content management (N = 247)	8,0
Knowledge of content (N = 253)	8,3
Organization of workshop activities (N = 250)	8,0
Ability to meet the needs of students (N = 253)	8,5

Table 1 – Data about the satisfaction about the tutor

Another strength shown by the data quantity and quality is the quality and breadth of educational offer. The didactic objects are also appreciated for its ability to "customization": the teacher who decides to experiment in class with his / her students easily find the way to use the materials, the teaching / methodological suggestions and verification tests bending them to the needs of the students. It is no coincidence that among the different phases of the training of the teachers is the phase of experimentation in the classroom, peculiar characteristic of our training, the most acceptable (52%).The teachers seem to appreciate, in fact, the 'immediate "marketability" of the paths.

Another element of the sustainability of these initiatives felt like a positive one is the consolidation of innovation in the territory of a network of schools with adequate infrastructural facilities.

So, in the perception of the participants, the action B10 has over the years has enhanced the investments of resources that can be re-used: trainers, content and a regional network of schools.

From the point of view of perceived effectiveness by trained teachers about the impact on the performance of their students is interesting to note that this value increases with the passage of time (Ch. 6): a survey carried out on trained teachers from 2009/2010 and 2010/2011 also shows that the percentage of the subjects believed that experimentation in the classroom has led to improvements in the learning of students increases by about 14% compared to the percentage of students of 2012/2013, which nonetheless remains at 66, 5%.From this we can deduce that the proposed educational innovation in courses PON needs a certain period of time to be metabolized and perceived as useful to affect the educational success of students.

Chart 6 – Experimentation and educational success

The survey also allowed us to segment the sample of users in relation to the level of involvement of trained teachers: the survey combined indicators of perceived quality, propensity to repeat the experience and willingness to be a promoter of the initiative towards third persons. The result of this analysis is illustrated in the graph below.

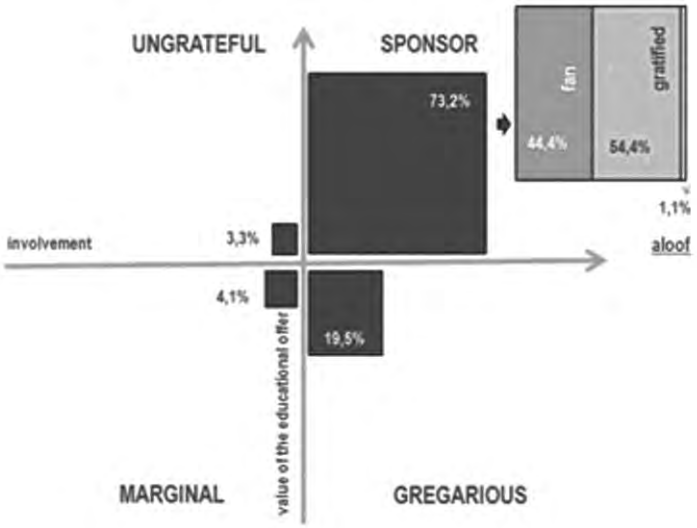

Chart 7 – Sponsor, Gregarious and Marginal

In the segment of the sponsors we highlight those who are not only satisfied with the course completed, but they say that they are likely to repeat the experience, and to sponsor the initiative with colleagues and acquaintances (Ch. 7): in many cases they are people who had a positive experience, happy with the path and so they would be available to sponsor for possible future activities. Another worth mentioning segment is that of gregarious teachers (19.5%), they are participants with a relatively lower level of satisfaction but with a high level of involvement. In both cases it is an important prop to boost innovation initiatives-disciplinary teaching.

Finally, the analysis of the data regarding the career choices of participants has identified four types of teachers in relation to the upgrade paths chosen, as shown in the following chart (Ch. 8).The results light that over the years the ability of PON courses has created by their resources not only followers of updating and improving teaching skills but also the PON courses intercept teachers outside of the cycle of lifelong learning.

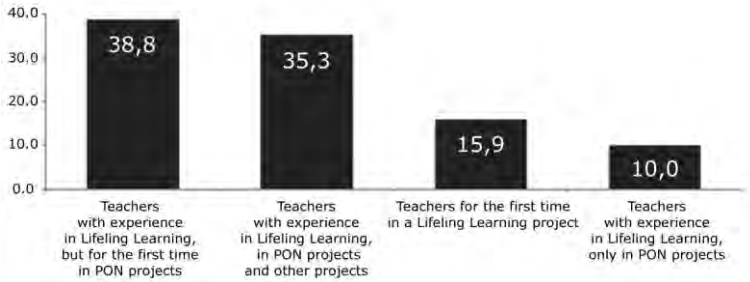

Chart 8 – Types of participants

4.2 Weaknesses

The most obvious critical point regards the phenomena of the drop out and absenteeism - the number of members that exceeded 25% of absences (Ch. 9). This number has remained more or less constant during the three annual courses (about 50% on the starting number of subscribers).

Chart 9 – Percentage of participants with a complete certificate

From the conducted monitoring on the courses edition 2012/13 a serious phenomenon of interesting negative correlation is detected between the data relating to dropout and absenteeism: in front of low rates of withdrawal you are experiencing very high rates of absenteeism and vice versa. Based on the quantitative and qualitative investigations have revealed the following possible reasons:

1) The absence of incentive mechanisms and / or recognition for career.
2) The low number of participants from the same school (3.3%) and the resulting fragmentation of the total of the group produces the isolation of teachers in their school , putting at risk the aim of the course as vector of educational innovation of the single school and of the system in general.
3) Difficulties in terms of mobility and logistics in local contexts.
4) Lack of structured forms of compensation for the digital skills of the participants. Training teachers often have difficulty on the use of online communication tools or they prefer instruments more "traditional" e-mail (Ch. 10).

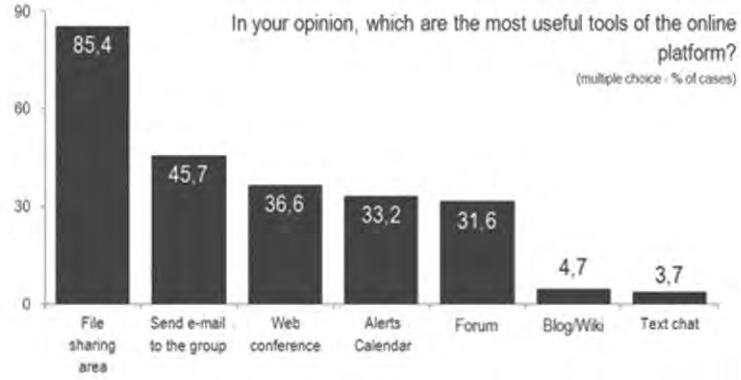

Chart 10 – Tools of Online Platform

Quantitative survey showed that the participants with too many absences have a definite age profile: teachers with more than 15 years of experience are the 65.5%. From that we assume that teachers at the end of their careers are less likely to complete the training or teachers with many years of service may appear more reluctant to change their way of teaching.

Another element of weakness is the lower rationalization of procedures for the access / start of training. The participants are stressed by bureaucracy and delays that make to drift the training activities in a time of year when teachers have professional duties more consistent.

In a context of a general positive evaluation about the courses, a critical issue stands out regarding the opinion of efficacy of the methodological tools and process documentation required for each step of the training course (Initial questionnaire for self-analysis, a tool for analysis of needs, logbook of the

trial, final document of restitution, etc.).71% of the participants believe that these instruments were not useful for the training. The compilation of the reports has been perceived as a bureaucratic exercise and not as support for reflection on the process triggered, as it was in the intention of those who designed them.

Seem to contribute to this judgment:

1) The excessive number of documents to be produced. the participants are asked to write 5 / 6 reports such as forms and questionnaires, probably an excessive load of work that influences negatively the articulation of the information provided, forcing the teachers to express themselves too much synthetically.
2) Fragmentation of the documentation into many parts, which does not help teachers to understand the sense of the process of monitoring their own path. The forms are not felt as real instruments and accompanying verification but such as tools of "bureaucratic control".
3) The request to use word processing documents for collecting and organizing information reinforces in the mind of the participants the image of bureaucratic monitoring process.

In addition to these contingent elements it is natural to wonder whether if the not very common habit / attitude of the average Italian teacher to a continuous reflection on practice helps the misunderstanding about the documents, designed instead to help the self-observation.

5. FUTURE DEVELOPMENT

INDIRE is now designing the new training proposal for the National Operational Program 2014/2020, that this time will be open to the entire national territory.

The starting point of the new project are the results of the experiences described in this paper. Our challenge is to capitalize on the strengths and correct the weaknesses.

Focusing on strengths:

1) Invest even more on the skills of the tutor as vehicles of innovation and professional change.
2) Enhance the contents of the training by implementing the repository that hosts them with guidance and support services.
3) Exploit the generative potential of the course enhancing the trained teachers that could act like a sponsor of project , also offering support for the creation and development of networks and communities of practice in the territory in a perspective of lifelong learning.
4) Disseminate good practices emerged from the course.
5) Imagine forms of accompaniment for experimentation of innovative practices in the classroom.

Correcting the weaknesses:

1) to diversify training initiatives having care of places and contexts, as indicated by the new cohesion policy;
2) to design multiple training offers based on different needs and skills, technological too.

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Evaluating academic professional development as online learning

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Abstract (200 words)

The Postgraduate Certificate in Higher Education moved from face to face to online delivery in 2011. It includes two core modules accredited by the Higher Education Academy (HEA) for Fellowship of the HEA plus a third option which includes learning technologies, research supervision and a workbased project module. It provides a flexible course for academics across disciplines, and sites, both part-time and full time and those joining from outside the institution and overseas.

The research project, carried out between April and July 2014, reports the perspective of those graduating since 2011. The stages included an online survey sent to all of the graduates to date and a series of in-depth interviews with 11 graduates.

Firstly, we report on the evaluation of the success of the course in terms of student satisfaction and the impact it has had on the participants' professional development and practice as teachers in HE. Secondly, we discuss what we learnt from the experiences of participants on the course in order to improve our own practice as online educational developers, and to share these lessons with other colleagues who may find them beneficial in their own practice.

Keywords: Postgraduate Certificate in Higher Education, Professional Development, Online Learning.

Introduction

In recent years Higher Education (HE) institutions in the UK have started to deliver their educational development courses online as a part of flexible learning packages of accredited Continuous Professional Development (CPD). In 2011, the University of Westminster revalidated the Postgraduate Certificate in Higher Education (PgCertHE) course and moved it into online distance learning mode. The University of Westminster also developed a number of optional modules including two on technology enhanced learning, to support this agenda within the university. There are challenges in engaging busy academics with an internal, online course that mirror those of other distance learning courses, which traditionally have high drop-out rates. Therefore in our research project we wished to explore participants' perceptions of the course and its impact on their professional development and teaching practice. This report discusses the particpants' experience of the way that the course has impacted on their pedagogic thinking, teaching practice and use of technology. Suggestions are made for ways in which we can learn from our participants' experiences and improve our practices as online educational developers.

Project background

In most developed economies, and widely in europe (Parsons et al., 2010), teachers in HE are not required to hold accredited teaching qualifications either by statute, standard or convention (Parsons et

al, 2012). University teachers are considered as the last of the 'non-professions' by some writers (Baume, 2006). UK legislation has started to recognise and respect the professional status of university teachers but it doesn't legislate with respect to professional qualifications for HE teaching. In 2010 the UK government expressed its interest to professionalise university teachers' status in the Browne report (2010, p. 47) 'Securing a sustainable future for Higher Education' in which it proposed that: 'the [Higher Education Funding] council will provide students with assurance of the quality of courses – and there will be more qualified teachers. Students will also expect that those teaching them have a minimum level of skill in teaching. Teaching in HE is diverse and a one size fits all 'licence to teach' is not appropriate.'

2012 saw a growing policy interest in teaching development of academic staff and the adoption of a revised framework for professional standards for teaching and supporting learning. The UK Professional Standard Framework – UKPSF). This provides a focus through a framework of common standards which can be used for accrediting individual institutions' own teaching development activity so that it meets a nationally recognised minimum standard. Thus allowing institutions to design teaching development programmes for their staff which make sense locally, yet meet nationally recognised standards (Parsons et al, 2012).

Whilst much has been published about the processes that exist for educational staff development there is much less available that analyses the teacher's experiences on the way online educational development at universities has impacted on the teaching practice of participants. There is also a gap in understanding how experience of online CPD impacts on their professional development as HE teachers in relation to the use of technology with their students.

Methodology

The project was divided in two separate stages: the first, was to develop an online survey sent to all of the graduates to date and the second was a series of in-depth interviews with both graduates and tutors participating in delivery. Both stages took place between April and July 2014. The survey was sent to a total of 60 graduate students in the form of an online survey, developed via Survey Monkey. It consisted of 25 questions, some of which were open to comments. A total of 36 graduates responded, representing a 60% response rate. 11 students were interviewed using a semi-structured interview schedule and White and Le Cornu's (2011) Visitor and Residents mapping framework.

Results of the online survey

In general, students declared a very high degree of satisfaction with the course. Figure 1 below shows that the vast majority of the students (85.3%) are either Satisfied or Strongly Satisfied with their

experience of the course overall.

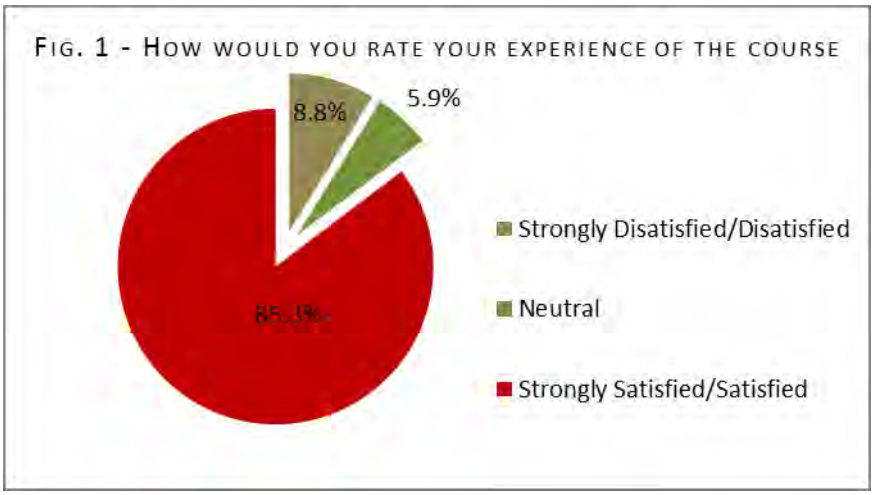


FIG. 1 - HOW WOULD YOU RATE YOUR EXPERIENCE OF THE COURSE

1. Impact on pedagogic thinking and teaching practice

At the same time 85% of participants reported a high or very high impact on their teaching practice. In line with the main motivation to do the course reported by the participants of the survey, it is interesting to observe that when asked about the outcomes of the course, a vast majority (see figures 2 and 3) indicate that the course helped them to develop professionally. In particular, they highlight the impact it has had in changing their skills and teaching behaviour, as well as the focus of their teaching practice towards a more student focussed approach.

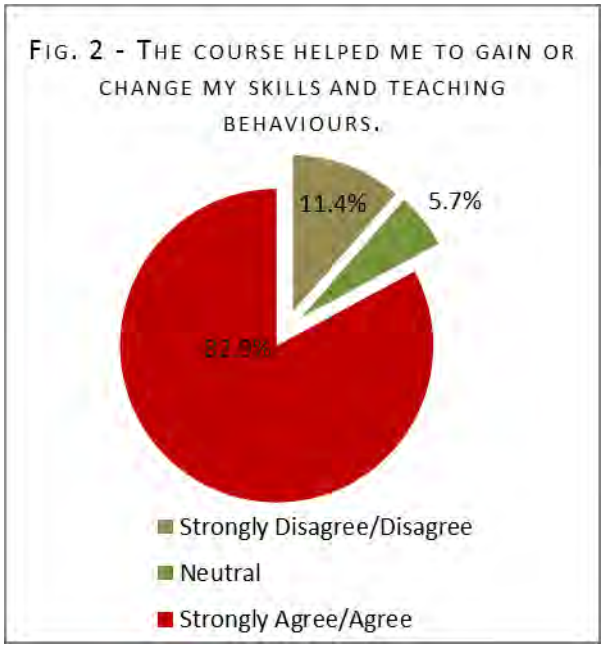


FIG. 2 - THE COURSE HELPED ME TO GAIN OR CHANGE MY SKILLS AND TEACHING BEHAVIOURS.

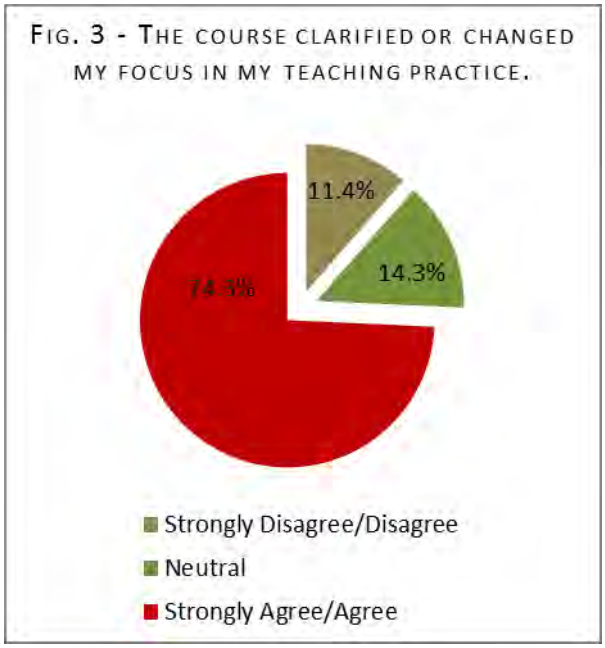
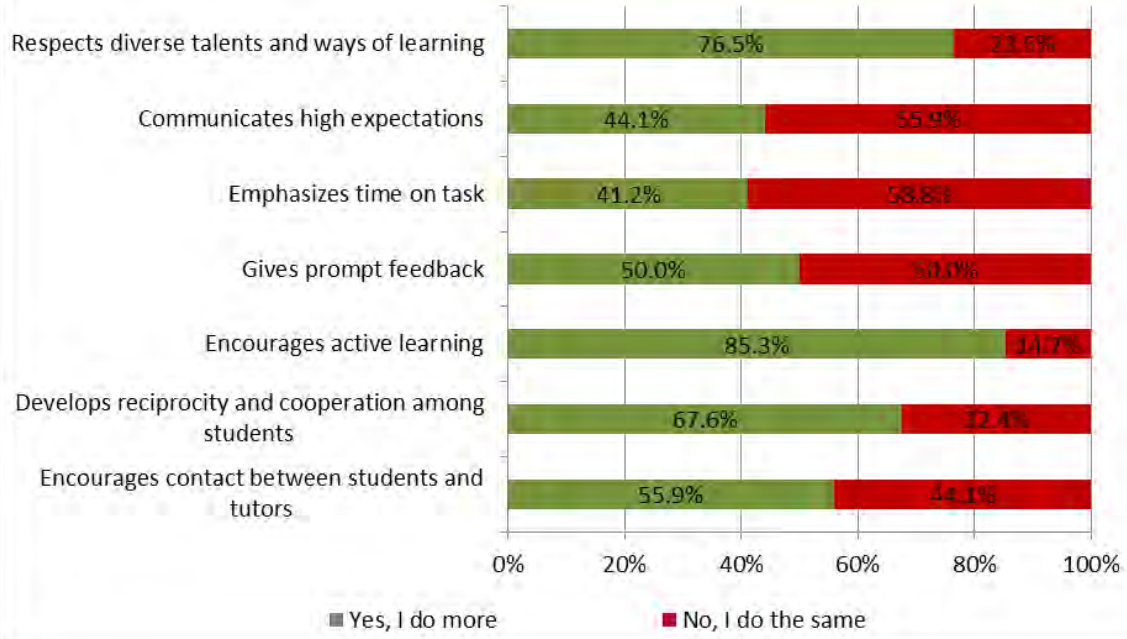


FIG. 3 - THE COURSE CLARIFIED OR CHANGED MY FOCUS IN MY TEACHING PRACTICE.

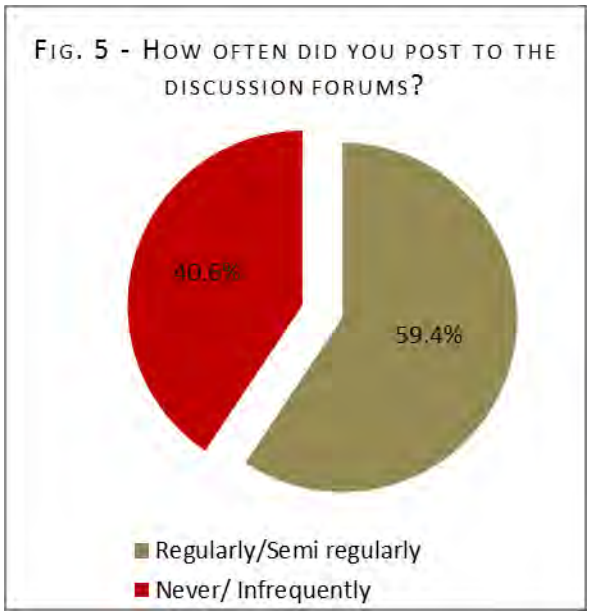
Chickering and Gamson (1987) developed a seminal set of teaching principles, still applied extensively today for evaluating good practice in HE teaching. Using these we can see - as Figure 4 shows - that in general, the students identify that after taking the course their own teaching practice has improved.

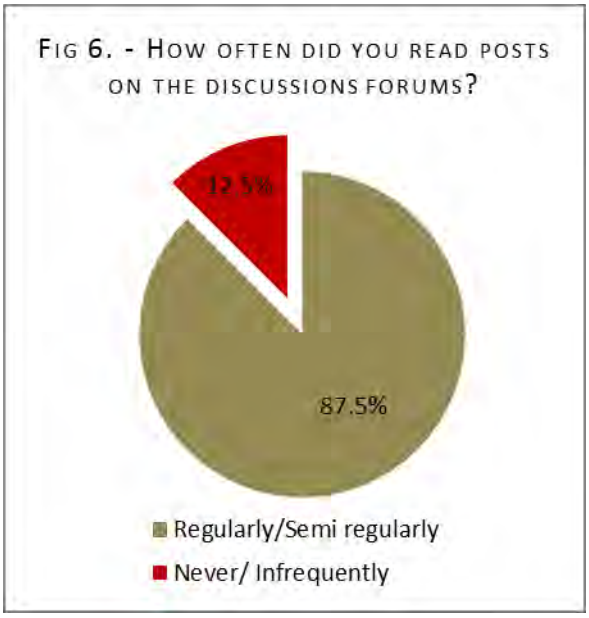
Fig. 4 - As a result of taking the course has your practice changed in relation to Chickering and Gamson's (1987) teaching principles below?



2. Impact of online delivery

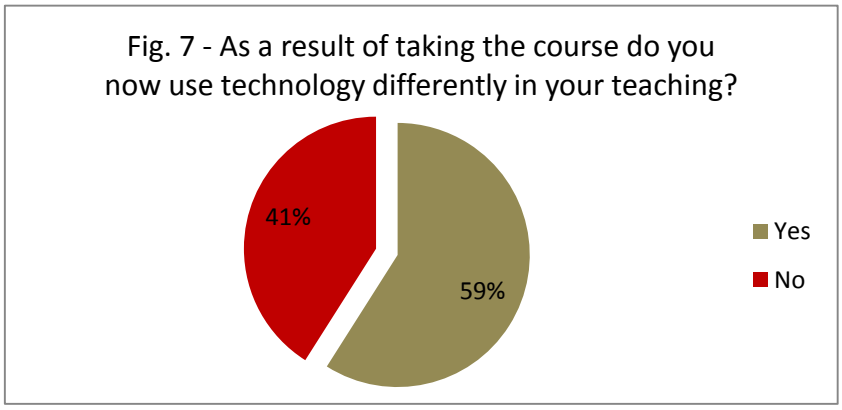
As it can be seen in figures 5 and 6 below, the majority of the students reported participating in online activities. It is notable here that a higher percentage of the students were more comfortable with reading other people's posts than with posting themselves. This reflects the position of the vicarious learner in the physical classroom (Northedge, 2003). Speaking and writing are not always necessary indications of engagement.





3. Impact on teaching practice in relation to the use of technology

A consistent perspective was that the course indeed had an impact on their teaching practice and use of technology with their students. The course not only gave them 'a set of sharper tools' but it also revolutionised their approach to course design and pedagogy. A common view was that being an student on the course and using a variety of technologies 'was hugely insightful' and that even though at times it was 'weird' and 'uncomfortable', it was 'definitely a valuable experience to see what it's like and what we make our students do, what they go through'.



4. Mapping of online engagement

One of the issues we wanted to explore was the use of social tools in educational contexts. To understand online behaviour, we used the Visitors and Residents (White and Le Cornu, 2011) model of internet use. It suggests a continuum of modes of engagement with the online world and provides insights as to how participants undertook their online study and what use they made of the different

tools and approaches we provided. This could also be related to a sense of belonging on the course. The interviews started with a short video clip and a mapping exercise using the Visitor and Residents framework. This is related to online social presence. We operate in visitor or resident mode depending on what we are comfortable with and what we are trying to achive. The initial mapping related to the nature of the social presence participants had online in their personal and working life and at the end of the interview a second mapping was undertaken relating to their social presence on the PG Cert HE as a student. Figure 8 shows an example of someone who operates largely in Visitor mode both when using tools for personal use in private life and when using technologies on the course.

Fig 8. - Mapping of online engagement A

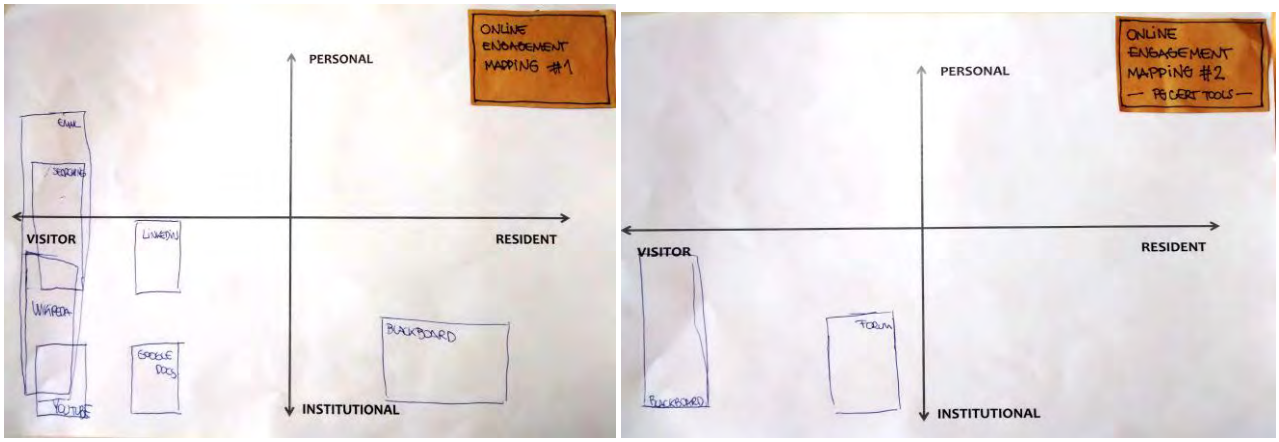
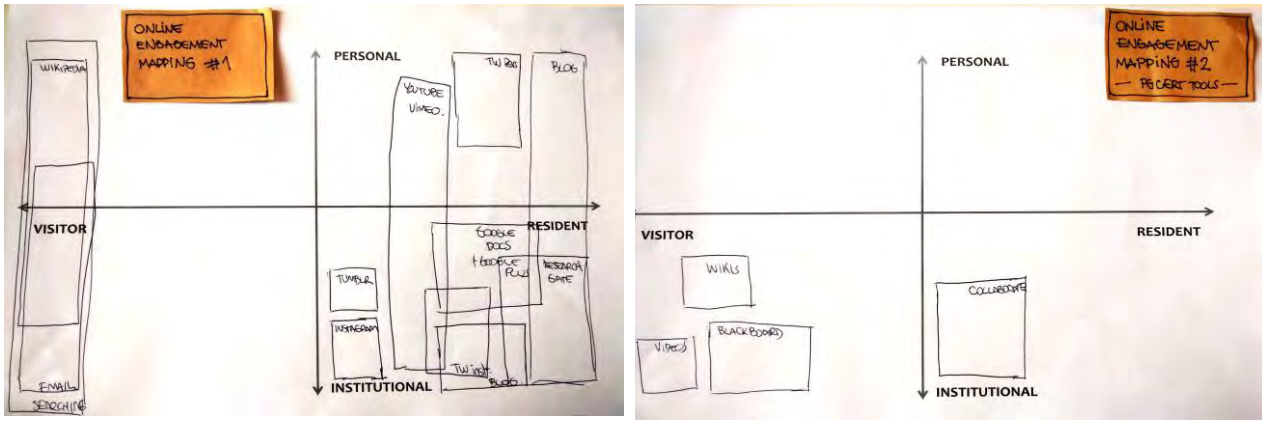


Figure 9 shows an example of someone who normally operates in Resident mode when using tools for personal use in private life but operated in Visitor mode when using technologies on the course.

Fig9. – Mapping of online engagement B



In our sample we had a mixture of Visitors and Residents' engagement continuum profiles exhibited

in the personal and working life of participants. However the participants' perception of their online PG Cert HE presence was predominantly as Visitors or, as one participant put it, 'reluctant residents.' It is therefore very interesting for us that all participants interviewed expressed satisfaction with the course irrespective of their preferred mode of online presence in their personal life. This is supported by the statistical satisfaction and impact ratings in the previous section. Interviewees comments were largely related to explaining their own lack of social presence on the course and, where they saw this as an issue- which not all did, what might be done about it. Their suggestions form the basis of our recommendations below.

Conclusions

The positive impact on the development of participants' professional practice through attendance on the course is clear. Colleagues find the course valuable to their thinking and their practice. Drawing from this evidence it seems that the following approaches and ideas taken from the research data can provide a good basis for developing the course into the future.

- Plan and make clear the motivation to be online and participate.
- Provide clear structure and minimal links to materials in different formats.
- Support the process of time management through the module.
- Develop an authentic tutor presence online modelling the appropriate style of communication for the tool or activity.
- Focus on active learning bounded by time constraints and clearly linked to appropriate tools.
- Provide synchronous opportunities for learners to discuss ideas through an appropriate tool.
- Provide ways of including learners who have fallen behind.
- Recognise the initial hurdles online learners have to navigate and provide scaffolded support.
- Provide an opportunity for people who wish to do so and are able to do so to meet face to face at the start of the course.
- Make clear the nature and extent of tutor support available.
- Develop learning communities using empathy and the modelling of positive online relationships and supportive forms of communication.

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SES-B3:

STRUMENTI E PRATICHE DI RICONOSCIMENTO DELLE COMPETENZE NEL RACCORDO FORMAZIONE-PROFESSIONI

Representations, technologies and competence for Learning Disabilities

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Abstract

Learning disabilities (LD) are a core topic in the recent regulatory and scientific debate in Education. Teachers must develop new competence because some students may have reading, writing and math disabilities. For this reason, they have to become mediators and have to create an inclusive organisation of learning environments. Starting from this framework and within a research approach on Teachers' Thinking that takes pre-reflective knowledge in the educational practice of teachers-to-be into account, the research study "Rappresentazioni, tecnologie e competenze per i DSA" (Representations, technologies and competence for LD) has been carried out. This research project, in cooperation between University of Foggia and University of Bari, is made up of a 23-question questionnaire including multiple choice and open questions submitted to 972 teachers in the making.

Keywords: Inclusion, Teachers' Thinking, Implicit, Competence, Learning Disabilities

Introduction

The research study has been developed in cooperation between University of Foggia (ERID Lab, *Educational Research & Interaction Design* Laboratory) and University of Bari (Laboratory of Experimental Education). It provided the representation of Education by teachers in the making towards students with Learning Disabilities (LD), focussing on the competence needed to manage classes, to use offsetting educational tools and measures as well as complementary methodologies and sharing measures.

In the framework of inclusive education, teachers have to know how to use educational mediators and technologies wisely thus obtaining different organisation of learning environments and in order to overcome any barrier and to foster a global involvement.

In the wake of Anglo-Saxon studies dealing with *Teachers' Thinking* and here taken as a reference model, the project aims at understanding the experiences of teachers in the making, acknowledging Teachers' Thinking as specific professional knowledge. In particular, this research ensues a survey carried out by Loredana Perla (2009) dealing with the effect of pre-reflexive knowledge in the educational practice of teachers in the making and the beliefs of specialised teachers-to-be through the use of metaphors and explanation interviews (Vermersch, 2005).

State of art

Reading, writing and math disabilities are a core topic in the recent regulatory and scientific debate in Education (in Italy, see: L. 170/2010, Directive 27.12.2012; M.D. 12/07/2011; Consensus Conference, 2011; Cornoldi, 2013; Stella, 2010; Stella & Grandi, 2011). This debate revealed the importance of the organisation of learning environments and school contexts in an *inclusive* perspective, overcoming the scenario of a simple integration of those needing Special Education (Thomas & Loxley, 2007) and in favour of a new organisation of educational settings that aims at eliminating any barrier to learning (Booth & Ainscow, 2008; Florian, 2012; Perla, 2013). Inclusion is considered an educational and social priority (Pijl, Meijer & Hegarty, 2013); in the *Education for all* program (Dakar, 2000), many initiatives have been organised. Recalling the values of the Salamanca Conference (1994), of the Madrid Declaration (2002) and the UN Convention (2006), an "education for all" can be fostered only if educational systems are reorganised.

Teachers should be able to make sure that school contexts may be fruitful for everybody, reorganising the school framework and organising time, space, educational tools and mediators (Damiano, 2013; Perla, 2013). Teachers become more and more learning *co-designers*, able to create educational itineraries together with students in real, hybrid and virtual environments (Kalantzis & Cope, 2012; Limone, 2012).

EADSNE, *European Agency for Development in Special Needs Education,* (2011) has also underlined the need of training for teachers' competence in the spreading of inclusive practices.

Based on these considerations, the project "Representations, technologies and competence for Learning Disabilities" has been created in order to look into the education models carried out by teachers in the making and addressed to students with LD.

This research is part of a framework of Anglo-Saxon studies known as *Teachers' Thinking*, born in the wake of Shulman's studies (1986a, 1986b) on the scientific acknowledgement of teachers' professional knowledge (Clark & Peterson, 1986; Calderhead, 1987; Day, Popoe & Denicolo, 1990). Currently, this framework is well-established in the international organisation ISATT. Research on Teachers' Thinking showed the importance of pre-reflexive knowledge that are embedded into the apprenticeship period of teachers-to-be, that is all those elements that typify teachers: beliefs, implicit theories, intentions, desires, feelings, memories. These elements, though not made explicit by teachers, play a decisive role in the creation of relationships, decisions, rules and management of class activities (Gommers & Hermans, 2003; Stadler & Frensch, 1998; Calderhead & Robson, 1991; Cabaroglu & Roberts, 2000). This is what Loredana Perla (2010; 2011) defined as "implicit" in Education and the core of her recent research: in particular, one research topic dealt with specialised teachers' beliefs and his/her peculiar traits of his/her competence (Perla, 2009).

Considering this research framework, this study aimed at understanding and fostering the point of view of teachers in the making about education methodologies, inclusion and competence needed in order to manage students with LD, acknowledging implicit and pre-reflexive knowledge of teachers in the making as professional knowledge.

Methodology

The research project has been carried out by submitting a 23-question questionnaire including multiple choice and open questions to teachers in the making for the academic year 2012-2013. The sample is made up of 972 people coming from three different educational trainings:

1) 368 attended a teaching qualification course (TFA courses at University of Bari and Foggia);
2) 528 attended an educational training course for LD organised by USR Puglia (Regional Education Authority) and ERID Lab (University of Foggia);
3) 76 attended a Master's program/refresher course in *Psychopedagogy for Learning Disabilities* (University of Foggia).

78% of the sample is made up of women (174 men, 760 women, 38 did not answer).

The questionnaire has been submitted to the teachers by using Google Forms and it is split into 4 sections:

1) *Personal details*;
2) *Representation of LD,* in which it is possible to understand teachers' representations about some features involving students with LD: relationships in the class, interaction among students, involvement in class activities, interventions made to foster students' autonomy;
3) *Technologies for LD*, dealing with the use of technology in educational practice for students having LD and with the increase of competence using offsetting technologies and mobile devices for LD;
4) *Competence for LD*, focused on: competence that teachers may have developed and need in order to work with students having LD; their degree of competence using offsetting educational tools and complementary methodologies with students having LD; training contexts of competence; reporting tools and assessment modalities.

Only results coming from section 4 will be here analysed.

Results and discussion

The first analysed question deals with any competence developed by the teachers involved in the research project. Among the available options, the highest number of affirmative answers is for "Enhance communication between school-family-health service", "Develop problem-solving strategies", "Organise educational activities for students having LD", "Define and support strategies to achieve a successful training"; conversely, the questions being less chosen were "Handling specific educational and assessment tools" and "Identify a problem" (see Table 1).

	1= scarce	**2**	**3**	**4**	**5= excellent**	**no answer**
Develop problem-solving strategies	3,7%	8,1%	25,9%	39,5%	10,3%	12,4%
Being responsible for a student with LD	6,5%	12%	22,7%	32%	14,8%	11,9%
Organise educational activities for students having LD	5,9%	10,4%	24,1%	33,7%	13,8%	12,1%
Identify a problem	8%	13,9%	29,2%	27,6%	9%	12%
Enhance communication between school-family-health service	5,2%	9,1%	22,1%	33,8%	17,7%	12%
Define and support strategies to achieve a successful training	4,7%	8,2%	27,3%	35,4%	12,1%	12,2%
Handling specific educational and assessment tools	4,9%	10,3%	31,5%	29,3%	11,4%	12,6%

Table 1 - Answers to question 11 "Which of the following competence do you think you have developed?".

Analysing the answers provided by the sample, it is interesting to underline that those who attended the educational training courses for LD and the Master's program show higher self-confidence when dealing with LD-related competence, while teachers in the making attending TFA (educational internships) seem more uncertain; most of "1" & "2" marks belong to the latter category. As for the entry "Being responsible for a student with LD", mark "1" was chosen by 61 teachers attending TFA courses, while only 2 teachers attending educational courses have chosen this option; no one attending a Master's program has chosen this mark. Mark "2" was chosen by 89 teachers attending TFA courses, 25 attending educational courses and 3 attending a Master's program. These results become more relevant because the number of teachers attending TFA courses is approximately half of the total sum of the sample in the remaining two categories.

As far as the question about preparatory knowledge for professional competence of teachers of students with LD is concerned (Customised Educational Plan, rules, offsetting tools, basic prerequisites of writing, reading and math abilities), there is a sort of balance in the answers provided; nevertheless, the imbalance involves the teachers attending the different courses.

The offsetting tool teachers can handle the most is "a computer with a word processor and a spellchecker" (654 people have chosen it, being two-thirds of the overall sample – 67,4%). Other tools chosen are: "non-technological devices: tables, multiplication table, questionnaires, concept maps" (61,9%), "audio-video recording" (56,3%), "E-books (textbooks, dictionaries)" (52,3%), "Maps" (49,1%). Other options are "a computer with speech synthesis software" (35,1%), "a digital recorder" (25%), "a daily record" (21,1%), "a voice-controlled calculator" (17,7%). These options are quite

scattered among the three groups and there is a balanced distribution between digital and traditional devices.

As for the question that deals with competence in using sharing measures, the analysis of data develops the following list of answers (in descending order): “Assessing performance of students with LD focusing on content rather than structure” (38,4%), “Using maps during oral tests, a preferred assessment form to written exams” (32,4%), “Creating educational contents and assessment tests that foresee an higher amount of time, and a reduced number of exercises for homework” (27,4%), “Organising tests using multiple choice questions” (31,8%), “Using abridged texts” (26,3%).

Assessment is taken into account in questions 20 and 21. Customised plans (chosen 498 times – 51,3%) are the most used reporting device in LD assessment. Then, achievement tests (28,9%), daily records/narrative tools (15,1%) and competence portfolio (12,4%). Teachers underline that LD assessment should be carried out by managing time variables flexibly (61%) and using simplifying methodologies (55,8%). “Encouraging communication” proves to be another widely chosen option (44,4%). One-third of the teachers agrees on the identification of specific assessment criteria (329) and the use of IT-based tests (35,8%).

As for the question “Which complementary methodology for students with LD do you think you still need to develop?”, the most chosen answer was “Cooperative education” (51.9%) and “Offsetting methodologies” (49,6%). Then, “Organisation of the learning environment” (47,7%), “Educational technologies” (46%), “Sharing methodologies” (34%). It is meaningful to underline that the most chosen option is a non-specific methodology for LD as it involves the whole class. The percentage is higher in the group of teachers attending TFA courses, reaching peaks of 60% of the overall number.

The most needed competence deals with a series of fields such as methodologies, education, assessment, education, organisational/relational (the latter especially for teachers attending TFA courses), medical-health-rehabilitation. Half of the limited sample of teachers attending the Master's program thinks that a research competence-based training is fundamental.

These observations (see questions 11, 12, 15, 16) are confirmed in question 17: “Which context has influenced you the most in the development of educational competence for students with LD?” Half of teachers attending a TFA course (165, 17% of the sample) thinks he/she is not able to deal with LD. What is more, 437 teachers (45%) involved in the research project think that actual work experiences with LD are the best way to get an adequate, specific experience: 253 teachers (26%) who attended a postgraduate training course agree with the same view. One-third of the sample states that he/she has already taken part in training and refresher courses on LD and 20% of the sample states that he/she has taken part in the promulgation and diffusion of this kind of events.

Research results

In line with the standard profile of “inclusive teachers” suggested by the EADSNE (2011), the answers provided indicate that teachers should take on responsibility of an *inclusive mission*, as “values and expertise indicated in the Inclusive teacher profile involve all students, not only those at risk of being excluded”. Among the complementary methodologies for students with LD that teachers feel they still need to develop there is a widespread methodology that is not DL-specific but envisages involvement and active participation of the entire class, that is “Cooperative Education”. This choice entails the whole class to be involved, thus avoiding teachers to focus on exclusion-related variables only. Another result can be analysed in this sense: “complementary methodologies” should be further developed so that students may overcome their boundary conditions and in order to achieve an educational success. Some of these methodologies are: offsetting methodologies, management of the learning environment and educational technologies. This is why it is not a surprise the fact that methodology-, educational- and organisational/relationship-related competence are those which teachers feel they need to develop most in order to favour inclusive educational activities. In particular, teachers attending TFA courses are more prone to look for this kind of competence. This result, which has repeatedly appeared in the questionnaire, indicates the need to implement the general methodological framework into university training programs; at the same time, it also indicates the need to foster further training activities through which experimental actions focusing on multiple

methods and educational interventions can be carried out. What is more, the competence that teachers are eager to develop deals with medical-health-rehabilitation activities. This element relates to a widespread phenomenon, that is a lack of cooperation among people because people of different domains (e.g., teachers and clinicians) belong to different professional environments, knowledge, codes. Only half of the restricted sample of teachers attending a Master's program believes that a competence-related training programme is of essential importance. This demonstrates poor interest towards practical reflexive activities, even though they should guide the operational practice of teachers: therefore, there is a sort of "emergency" to create learning environments for training and professional development of teachers able to withstand professional profiles, the latter showing the ability to deal with complex activities depending on participative, negotiation and critical reasons.

Probably, the most surprising result deals with assessment, a field scattered throughout the whole questionnaire. Results dealing with reporting tools used in assessing LD show that the most important device is the Customised Educational Plan. Nevertheless, this document is meant as a simple *list* of offsetting measures and tools, and for this reason assessment criteria are in the background. On the contrary, in order to make this document functional for assessment purposes it should contain relevant, realistic, congruent, practical and verifiable information (Fogarolo, 2012). Another result to be highlighted is the fact that one-third of teachers who answered the questionnaire agrees on the identification of precise assessment criteria and the use of digitised tests. Nevertheless, the quality of the assessment process is connected with the openness of criteria and the modalities of judgement attribution: to achieve this goal, the appropriate tools should be valid and reliable. A remarkable share of the sample states that he/she uses objective achievement tests but does not complete tests with other assessment tools. Most of teachers state that assessment procedures are taken into serious consideration: flexible time, simplifying methodologies and encouraging communication are some of the variables used by teachers to ensure "inclusive" assessment. As for assessment is concerned, there are some other critical issues that deal with competence teachers think they have developed. In this field teachers state they have not developed the competence "Identify a problem" and "Handling specific educational and assessment tools". As previously stated, even in this case teachers who have attended a TFA course feel they lack adequate and specific competence as for being responsible for students with LD. Some good results concern competence that deal with scheduling, problem-solving strategies and communication between school-family-health service. As for preparatory knowledge for professional competence of teachers of students with LD there are some good results, even though there are some differences among teachers coming from different environments.

As for responsibilities towards students with LD, the competence framework indicates a complex, functional educational behaviour that needs further technical qualification. This result appears more manifest in the group of teachers that have attended a TFA course. The final purpose is to enhance the quality of teachers' training; to achieve this goal, a training system that focuses on inclusive education rather than "special" education has to be planned and developed (Perla, 2013). What is more, research findings indicate that high technical qualification can be attained not only by means of university or post-graduate qualification courses, but most of all by means of direct experience. In this sense, operational plans may foresee:

1) re-definition of research, lifelong training and professional development models for teachers, aiming at a *bottom-up* approach in which competence from direct experience plays a central role. Our proposal aims at appraising *time & space* in which inclusive educational models, class management and specific activities may be examined in depth.
2) investing in training of people who carry out complementary, professional ongoing actions. According to the results coming from teachers who attended a TFA course, some specific knowledge can be acquired by flanking co-workers, assessing and evaluating situations and competence.
3) quality-based mapping of educational reporting tools that support assessment and planning procedures as well as offsetting/digital devices to support education of students with LD, thus aiming at highlighting both positive and critical features.

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Notes

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Skills mapping in SELF Emilia Romagna

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Abstract

This paper presents the activities devoted to the mapping of skills and experience-related knowledge that the SELF (Sistema di E-Learning Federato) System provides for trainers belonging to organizations and public agencies of the region. The outcomes of the research will enhance the formal and informal (experience-related) skills of the trainers belonging to the SELF network.

It will be also possible to obtain a shared definition of the aims of training and consulting serivices offered to the community of trainers of SELF.

Keywords: participated design, skills, experience-related knowledge, situated knowledge, community of practice

Introduction

The experience that we present is still in progress. It is an action-research oriented to realize a system for mapping skills and experience-related knowledge owned (or needed) by the trainers belonging to public agencies of Emilia-Romagna or to the network of trainers SELF.

SELF (Sistema di E-Learning Federato) is both an organizational unit and a service offered by Regione Emilia Romagna to public agencies and administrations that use e-Learning and ICT for knowledge management and training practices. SELF is divided into a central unit, called "Centro Servizi Regionale", that manages the integrated e-learning environment (MOODLE, ELGG, LAMS) and offers training and consulting, and local training units belonging to the public agencies and administrations agreed upon SELF. The central unit has the aim to provide: a training courses catalogue, feasibility studies for training projects, training of trainers of SELF. The training of trainers activity has determined the development of the community of practice of the trainers that is involved in all the activities related to collecting the needs of training and participated design of training courses. The community of practice (Wenger, 2002) has cooperated in setting the focus, the aims and the methods of the research described in this paper.

Motivation and state of the art of the action-research

The skills needed to conceive and manage e-learning events are a topic developed by researchers in Italy and abroad. The methods formerly used was focused on work process, job description and the analysis of skills fit to be assembled and compose some particular "vocational profile"; these "profiles", when related to e-learning, could be mainly oriented to information technology, or to process management, or to instructional design. About this subject matter is possible to refer to Isfol, to the e-learning skill profiles in "Thesaurus" of Italia Lavoro (2008), to the description of the profiles certified by AIF (2008) and to the "Vademecum" of CNIPA to guide public administrations to realize e-learning projects (2004 and 2007 editions). The offer of training courses was adequate to the methods above. There was mainly complete courses based on specific profiles (like instructional designers, e-tutor, e-learning manager and so on). In these last years it has been ascribed more importance to experience-related knowledge (Polanyi 1966) (Nonaka Takeuchi 1995) (Davenport

Prusak 2000) that can be produced in non formal as well informal ways and in situations not analyzable in terms of work process, job description and e-learning profiles; the consideration dedicated to these topics by European Programmes like LLL (Life Long Learning) 2007-2013 and Horizon 2020 is a confirmation of this thought pattern. Moreover, since the public agencies belonging to SELF are small organizations, it is unlikely to find roles and professional profiles entirely dedicated to e-learning in their training staff, therefore they need to appraise the trainers skills achieved by "situated learning" and "experience-related learning" to obtain the best from training, but these skills are achieved in specific projects or initiative, they are various and fragmented, in spite of their importance. These considerations are confirmed by some outcomes from the focus groups which took place in the SELF convention "e-Learning esperienze di oggi prospettive di domani" (2013) and from the meetings of the SELF community: the needs of training are related to the development of training and knowledge management practices.

A useful system for collecting and mapping skills should pick up the ones needed by the SELF organizations.

The aims of the action-research are: to collect and map the skills owned or needed by trainers, related both to everyday work practices and to specific projects; to collect their actual training practices; to appraise experience-related knowledge, situated knowledge and culture; to design training courses or informal situations that allow the trainers to develop these skills.

Tools and methodology

The action research is divided into three phases:

1) 1st phase (concluded): definition of the research range and production of a table to map the skills. The SELF trainers community was involved in developing hypotheses, range, aims and methods of the research. The members of the community have tested a questionnaire proposed by the central unit. The test has included validity evaluation, usability evaluation, revision.
2) 2nd phase (in progress): mapping of the owned and expected skills. At the and the revised questionnaire will be distributed to all the trainers of SELF.
3) 3rd phase (to be realized): processing of the outcomes and selection of training, consulting and services primarily needed. In this phase there will be several activities: selection and grouping of the skills; classification of the skills (techno-operational, organizational, communicational); profiling of training needs (based on how many times a set of different skills is chosen); drawing up of an offer of: training, consulting, non formal and informal opportunities to share experience-related skills and knowledge (conventions, meetings, workshops, production and sharing of artifacts).

Skills are mapped by means of a questionnaire for self-interview, whose sections are based on categories of activities that trainers have stated to be recurrent or strategic in their job:

1) training needs analysis and training activities planning
2) training start up and process tutoring
3) teaching and content tutoring
4) learning evaluation, evaluation of the appreciation of training, effectiveness evaluation
5) educational tutoring or community tutoring
6) production and publication of simple contents

Respondents are requested to indicate which activities they are used to carry out, how much frequently they do it, how much autonomous they are in carrying them out. They are also asked to indicate the activities in which they would like to improve, the topics whose knowledge is most important and the topics they would to know. Finally they can add new activities to be checked to each category.

The questionnaire is easy and quick to be filled (about 20'); it will be distributed to all the members of the community of the trainers of SELF (about 150).

Expected outcomes

The action research is expected to produce a map of the experience-related skills owned or needed by the SELF trainers. This map is expected to help the improvement of the training services offered by SELF. Particularly three main results are pursued:

1) To provide a self-evaluation system that allows the trainers both to make a balance between the owned experience-related skills and the lacking ones and to steer their LLL path.
2) To project and deliver experience-related workshops, along with learning objects and trainers training courses, in order to increase specific groups of skills according to the needs of specific target of trainers.
3) To promote informal and non formal opportunities (conventions, meetings) to integrate and develop experience-related and situated skills and knowledge.

After being tested in the trainers community, this research pattern could be extended to other communities and groups in SELF: school teachers, digital facilitators of the "Pane e Internet" project and, finally, the whole system of communities joined to SELF.

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Defining and accrediting core competencies in higher education: perspectives and proposals from a pan-European research project

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Abstract

Contemporary health education and promotion (HP) practice is characterised by a complex network of a diverse workforce drawn from a broad range of disciplines of which teachers and educators are a crucial part. It is a field that brings together an extensive breadth of knowledge, skills, abilities, attitudes and values stemming from bio-medical and social science frameworks. Structuring HP training and practice to ensure it is well-grounded in evidence was the aim of the CompHP project, which identified the Competence-based Standards needed to set up an online European accreditation system to accredit courses and professionals. For accreditation, mastery in three of the nine core competency domains must be attested. Besides offering a best-practice approach to define these Standards, the focus on competence acquisition rather than on learning objectives and content, demands a reflection on the pedagogical models and strategies adopted in Italian higher-education curricula.

Keywords: competencies, European online accreditation, health education, health promotion

Introduction

On an international level, as well as in Italy, health education and promotion practitioners are professionals drawn from an array of scientific fields with their personal epistemological beliefs and competencies (Dempsey, Barry, Battel-Kirk & CompHP Partners, 2010). Throughout Europe, the approach in higher education and training in the field varies widely, with curricula based on bio-medical models, as in Italy, and others founded on social sciences, with Northern European countries as an example (Contu & Sotgiu, 2012). Yet, within a European Union perspective and in light of the Bologna process, which aims at providing tools to facilitate the recognition of degrees and academic qualifications, mobility, and exchange between institutions, the need to establish the theoretical, epistemological and methodological foundations of such an ever-growing profession has become a priority (Tremblay & Richard, 2011). Meanwhile, WHO initiatives such as the Health Promoting Schools network, recent literature on the role of teachers in Health Education (Jourdan, 2011), as well as the inclusion of health education modules in teacher training programmes provide ample evidence that teachers and educators are key figures in promoting and educating about health.

Due to this dynamic and heterogenic nature of Health Promotion, as well as the need to define a shared model as well as the competencies required for effective practice, a pan-European project undertook the challenge to set up a European accreditation system that is based on well-defined Competence-based Standards as indicators and benchmarks. In addition, the CompHP Framework provided a useful tool for curricula planning in undergraduate and postgraduate programmes. This paper introduces and suggests the integration of CompHP results in the training of under and post graduates as well as in-service training courses in the fields of health, social work and education in Italy. Scholarship should reframe health education courses and practitioners should change their

attitude towards theory and practice. In fact, tracing one's own experience, to demonstrate the three competences required for accreditation, is more reflective, critical and challenging than in the past.

Current development

Since the 1970s, in Anglo-Saxon countries, the competency-based approach in the field of professional development represented a significant trend in reforming pedagogical perspectives in this field. The shift from planning courses starting -from the content to be taught to identifying the knowledge, skills and attitudes needed for students to master competencies for building capacity demanded new methodologies for the teaching-learning process such as distance and blended learning (Falcinelli, 2003, 2009) and new standards for evaluation, certification and continuing professional development and accreditation (Varisco, 2004). As stated by Hamel and Pommier (Idem, 2012) competencies-based approaches and ICT are the answers for lifelong learning in health promotion and education. Health educators build their health promotion knowledge through their experience, in action and on action (Schön, 1993), inside specific situations. Piaget, who could be considered the father of the constructivist paradigm, can be easily collocated within the discourse on competencies. Another contribution highlighted in the revolution of health promotion training is Vygotskij's vision on socio-constructivism (Brahimi, Farley, 2012). The emphasis is on the socio-historical role and social interaction in building knowledge. The CompHP project was born from the reflection and value of a new approach in the health promotion system for professional development.

Methodology

The 'Developing Competencies and Professional Standards for Health Promotion Capacity Building in Europe' (CompHP) Project, funded by the Health Programme of the European Union was a three-year endeavour, which brought together 11 Partners and 13 Collaborating Partners from policy, practice and academic sectors in Health Promotion across Europe. The aim of the Project was to develop competency-based standards and an accreditation system for Health Promotion practice, education and training that would positively impact the workforce capacity to deliver public health improvement in Europe.

Eight teams or work packages (WP) were set up with 3 core work packages which concentrated respectively on the coordination and management, dissemination, and evaluation of the Project. Other WPs focused on the development and testing of the CompHP Core Competencies, Professional Standards and a Pan European Accreditation Framework. Two distinct WPs were responsible for the mapping and piloting of these Frameworks in academic and practice settings. Different partners led the 8 WPs, but all partners in turn contributed to all by disseminating information, conducting research and providing feedback from their countries and networks. The eleven Collaborating Partners and an International Expert Advisory Group actively contributed to the Project in the consultations and consensus building stages, together with more than 600 practitioners, policy makers and education providers working in the field of Health Promotion across Europe and worldwide. Fig. 1 presents the organizational structure of the Project and the main Partners involved.

Results and discussion

The CompHP Core Competencies Framework comprises 11 domains of core competency. The domains underpinning all health promotion action are Ethical Values, considered integral to the practice of health promotion, and the Knowledge domain, which describes the core concepts and principles, that make health promotion distinctive. The remaining nine domains each deal with a specific area of health promotion practice with their associated competency statements detailing the skills needed. One of the distinctive aspects of this Framework is that it embraces the concept of ongoing and lifelong professional growth. In fact, young graduates are not expected to have acquired all the competencies identified and the accreditation system requires professionals to present proof of continuous professional development in order to renew their accreditation.

In terms of university course programmes, the framework gives the opportunity for scholars who plan, teach and assess health promotion competencies in undergraduate and postgraduate courses, to redesign their course programmes and to reflect on their epistemological beliefs and teaching methods. Although the Competency-based Standards are dealt with in great detail and are well-defined, the

CompHP Handbooks do not offer any advice on how to transfer these competencies into learning objectives and programme contents for university courses, leaving this in the hands of higher education institutions. This pedagogical challenge can be considered as an opportunity to reflect on pedagogy in health promotion and on more innovative methodologies such as experiential learning, active methods, digital tools, self-directed learning, reflective practice, as well as visual and narrative methods that have proved to be effective in other fields of professional training for the acquisition of similar competencies (Garista et al., 2005; Garista et al., 2014).

Another pedagogical digital skill in writing Curriculum Vitae, describing one's own experience related to standards, organising digital documents and their web access for the evaluation. The online accreditation is a process similar to the creation of an online portfolio. A portfolio recognises and encourages autonomous and reflective learning (Nicol & MacFarlane-Dick, 2006). It is based on the real experience and in that way consolidates the connection between theories and practices. It enables assessment within a framework of transparent criteria and it provides a process for both formative and summative evaluation, hence a suitable model for lifelong learning (Varisco, 2004).

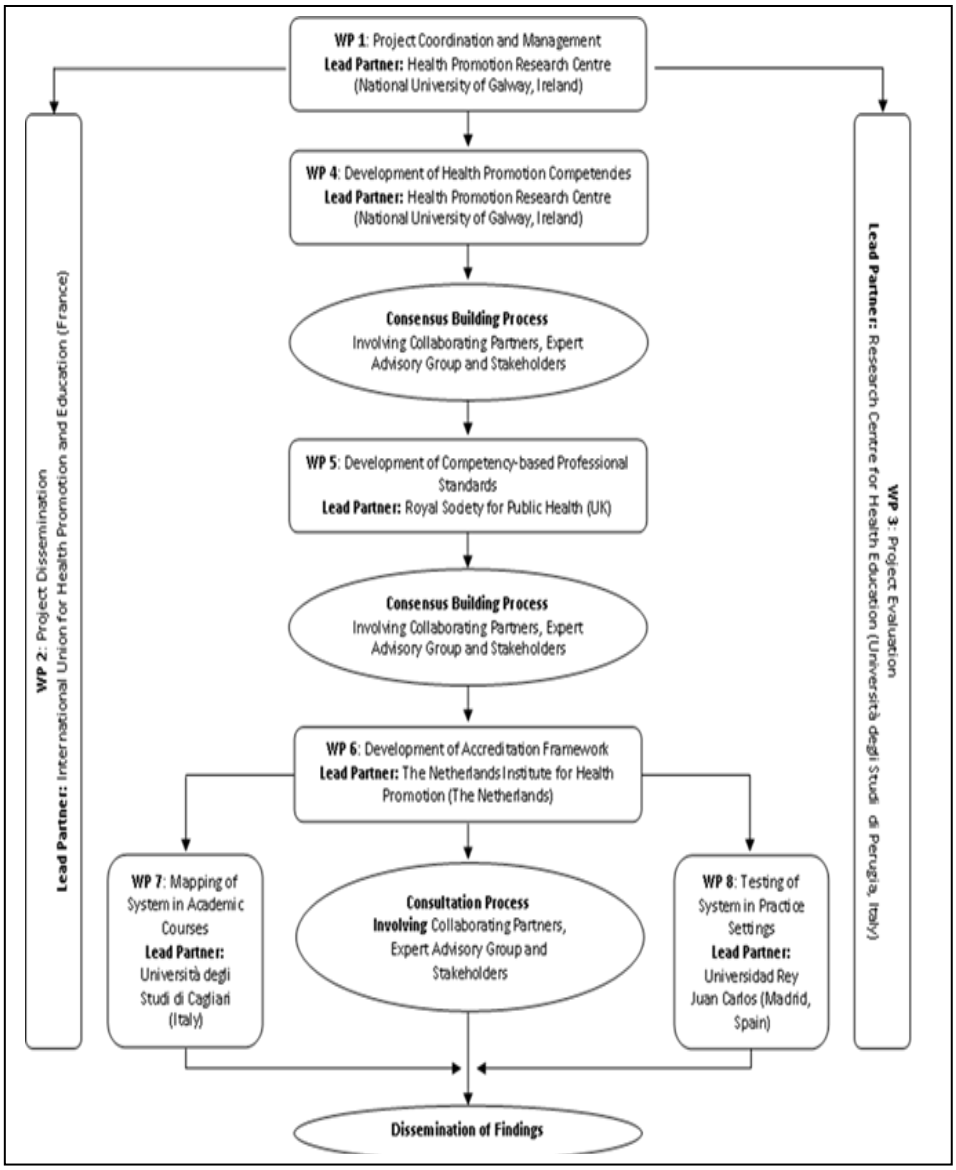

Figure 1 – The organizational structure of the Project and the main Partners involved

Conclusions

The CompHP project focused on health education competencies and, through a consensus-building approach, was an interdisciplinary effort, which brought together the health, social and educational fields. It represents a model, which links theory to practice, undergraduate to postgraduate training, research to best practice, and teaching to self-directed learning. It has provided the basis for the planning of higher-education programmes on a cross-curricular level. The next step is to engage in a deep pedagogical reflection to ensure that university students acquire these competencies and that modes of assessment are reliable and valid not only for accreditation purposes, but also to ensure a stronger more competent workforce. The translation into Italian of the CompHP Handbooks is offering a further opportunity to share and disseminate the work conducted, providing an arena for discussion and for the planning and implementation of similar projects for the identification of Competence-based Standards in other dynamic interdisciplinary fields such as education.

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Senior Technician Course in Communication and Multimedia: an writing experience to guide and orientate

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Abstract

The paper aims to describe an experience carried out as part of the IFTS project (Paths of Education and Training Higher Technical Education) in collaboration with Format (Lucera, Fg) and University of Foggia. Through an autobiographic writing workshop held within the Higher Technical Course for Communication and Multimedia, it has been possible to identify the participants' skills, differentiate the activities carried out during the training and specialize on their professional profiles. The workshop activity has provided the involved students with a better awareness of their skills and prospective employment opportunities.

Keywords: Laboratory, Skills, Professional, Multimedia, Autobiography

Introduction

The I.F.T.S. project represents a training course with the aim of encouraging young people's access to the labour world, and of retraining those who have already performed a work experience.
The training proposal involves the following organisations: Format as Lead Partner along with University of Foggia, Classical High School "R. Bonghi" of Lucera (FG) and the broadcaster TELE C SpA (Foggia), and focuses on ICT - Information and Communication Technology.
After conducting an investigation of numerous professionals working in this field, and detecting a rapid development of the required skills, and also taking into account the phenomenon of skill shorage in ITC industry (jobs that remain uncovered by the lack of qualified labour force), we have identified, in collaboration with the working group (main agency and partner), the professional figure in Higher Technical Communication and Multimedia.
In the field of telecommunications, a senior technician in Communication and Multimedia is considered to be a strategic figure as a result of his double qualification, as it combines skills related to publishing, graphic design as well as the development of content and the distribution of products in formats different from print media to computer media.
This particular professional figure has been selected after a careful analysis of professional needs of the territory.
Based on this investigation, we have identified important elements under this project:
1) addressing the training of a type of professionals who had so far received limited attention from the educational offer of our country;
2) creating an integrated manner of designing and managing between schools, universities, vocational training enterprises;
3) defining the territorial need for professionals which helps establish a positive relationship between demand and supply of labour;
4) designing criteria of standardization in a manner that will allow the acquired skills to be applied in different contexts, trainings and employment search;
5) designing a recognition of study credits system by the University and the schools, vocational schools and the release of a better technician certification;
6) creating a system of alternating moments structure, between theoretical training / workshops;
7) providing support and guidance throughout duration the course.
The course has been designed for individuals who meet the following criteria: 18 years old, live in the Province of Foggia, have a diploma of higher secondary education and have to be admitted to the fifth year of their high school courses.

The building of the training path has started from the identification of skills as a part of an integrated system of knowledge (to know), skills (skills) and human qualities (interpersonal skills).
In reference to the ISFOL model (Institute for the Development of Vocational Training of Workers), we have focused on three broad types of skills such as: basic skills (recognized as a prerequisite to access the training, employment and personal development), technical-vocational skills (necessary to ensure the execution of the activities in a specific field), cross-field skills (related to behaviour at work which are not related to a specific profession, essential for transforming technical knowledge into effective work performance).
The training has consisted of 1000 hours divided as follows: 650 hours in form of courses, 350 hours in form of internships (intermediate internship level consisting of 120 hours held after 375 training activities in the classroom, and followed by 230 hours of advanced internship level dedicated to a game at the end of training in the classroom).
The course has been coordinated and monitored by the working group chaired by a Scientific and Technical Committee (Format as a project partner) in order to ensure an education consistent with the objectives of the project.

Workshop of autobiographical writing: an overview of the past, the present and the future

As part of teaching design of textual content (20 hours), the Working Group (Technical and Scientific Committee) has considered and created the hypothesis of an autobiographical writing workshop to identify the skills of the participants in the activities provided in the training path, and to guide the participants' future choices, related to the undertaken training, and their aspirations.
The choice of autobiographical writing workshop has been intended to allow students to carry out workshop activities using their own skills, and motivate them to be involved in the activities.
In addition, the use of this approach with the autobiographical workshop has led students to be more aware of their own identity; a process that can have a positive impact on a future orientation process.
Franco Cambi defines the autobiography as: "A paradigmatic form of self-care which activates a path which changes the subject: not only his identity (which is reflexive), but the same care (such as self-reflection, as an interior space) by the subject. It gives identity, interiority and reflexivity at a time. And in this triangle there is the sense of the way of the learning process "(Cambi, 2007, p. 27).
To carry this educational path with the stated conditions, the workshop has been structured as follows:
1) self-presentation using specific keywords (presentation technique);
2) a autobiographical work (participants tell their story by looking at visual cues such as photos);
3) a final activity in a form of a game: the role of the game is to summarize the experience from the workshop;
4) group feedback activity (for the analysis of cognitive activity).
The duration of the workshop has been 10 hours divided in segments as follows: 1 hour for the presentation technique; 5 hours for the autobiography writing process, 2 hours for the final game, 2 hours for the final feedback experience.
The feedback from the students that have participated in the workshop has been positive.
To make the initiative effective in the context of an educational project, the Scientific Committee has analysed the life stories written by the students using a SWOT analysis identifying strengths, weaknesses, opportunities and threats on behalf of each student.
Also, after reading the autobiographies it has been possible to divide the students' skills in three categories: writing, computing and graphics.
This division has allowed the creation of working groups heterogeneous in terms of skills and has also allowed us to identify companies suitable for an internship.
The analysis conducted on the papers submitted by the concerned participants has also revealed their aspirations, the desire to acquire new skills and therefore the training has been oriented to the acquisition of new skills by the students.
In view of the data obtained, the remaining 10 hours of the design discipline of textual content have been used to enhance their skills and acquire other with activities such as practice with the creation of an online publication using the Calameo software, and a conceptual map with the Mindomo programme.
The teamwork and the sharing of expertise and knowledge on behalf of each participant allowed the training project to take place.

These preliminary activities have contributed to the development of the final part of such activity that has interested the creation of blogs, which have been analysed at the end of the path taken.

Conclusions

The workshop of autobiographical writing that took place within the course of planning of textual content, has enabled us to:
1) encourage the exercise of a practical, useful and economical autobiographical methodology in order to develop in students a greater self-awareness of their own resources, thus promoting a reflection on their professional identity;
2) contribute to the renewal of professional motivation;
3) motivate and facilitate meetings between parties with different skills;
4) facilitate the emergence of the memory of previous work experiences to promote a new dimension of self-learning.
An important element of the training undertaken has been the use of writing understood as: "a form of technology that documents, implements and supports events and mental processes (individual and collective) characterized by an ordered structure, directional, sequential logic in a continuity but also of foreshadowing and planning existential and formative" (Striano & Olivieri, 2010, p. 219).
Through the use of "autobiographical" writing, it has been possible to facilitate and guide the education of students and provide insights for possible career choices.

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Safety training and university: the case of University of Milan

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Abstract

The experience showed by AiFOS concerns the development of health and safety education and training of students, trainees, graduate students, PHD of the University of Milan who, considered to be workers by law, are subject to a specific training obligation.

The use of new technologies and the fruition of e-learning training allowed those involved in the project (about 6000) to acquire a permanent educational credit of general training for safety at work as stated by the Accordo Stato-Regioni (State-Regions governmental Agreement) of 21/12/2011, applicable also in the job field after the end of studies.

The University has thus reached its aim at preparing the students for the job world and, above all, it has raised the attention about the matter of safety to those who soon enter the job world.

Keywords: education, training safety, students, e learning, University

Introduction:

By now the Occupational Health and Safety training involves the world of Higher and University education. Students are considered to be workers and so they have to receive a sufficient and adequate education on the matter of safety at University, or in the places where they attended educational activities or internships.
The contribution that we want to offer is based on the experience of AiFOS, Italian Association of Trainers and Professionals About Health and Safety at Work, with the University of Milan, which had to educate all "students of university courses, graduate students, PHD, trainees, recipients of scholarships and others considered as equal to them, when they attend educational and research workshops" as stated by the Circular n.2844-3.3.1999.

Safety Training and University World: Regulatory Framework

A prevention system cornerstone of the matter of health and safety at work in our country is training, defined by art. 2 letter aa) of D. Lgs. n.81/08 as "The educational process through which transferring, to workers and to other subjects of the company prevention and protection system, knowledge and procedures useful in the acquisition of competence in order to carry out their own tasks at work safely and to identify, reduce and manage professional risks".
University institutes and higher education schools have, in addition to employed workers and co-workers, also students as well as trainees, who, during study and research activities, use equipment and school labs. All of them are subject to the obligation of safety training.
Art. 2, letter a) of D. Lgs. n.81/08 defines a worker as "a beneficiary of educational and orienteering training initiatives (art. 18, law of 24 June 1997, n.196, and specific dispositions of regional laws promoted in order to create a balance between study and work or to facilitate the professional choices through the direct knowledge of the job world), students of educational and university institutes and attendees of professional education courses in which labs, general professional equipment, chemical, physical and biological agents, including display screen equipment, are used, limited to the time in which the student is effectively applied to them or in the labs in question".
In art.37, comma 14 bis, it is specified that the educational and university institutes have to provide a certified Occupational Health and Safety training to students, that are considered as equal to workers.

As stated by the Accordo Stato-Regioni of 21/12/2011, the General Training course, that is about prevention and safety at work, can also be carried out through an e-learning modality (see Attachment I). The interest for this methodology originated from the fact that the legislator itself, as a premise to the Attachment I of the Agreement, clarified that "the evolution of new technologies, the lifestyle nowadays (more and more frenzied and, therefore, with a less available time) and the change of the concept of education, with a more and more urgent need of satisfying the interests of the users, has made the achievement of a new particular modality of distance learning, named e-Learning, possible. This modality has been defined as an innovative approach for delivering electronically mediated, well-designed, learner-centered, and interactive learning environments to anyone, anyplace, anytime by utilizing the Internet and digital technologies in concert with instructional design principles that, using digital technologies and learning materials, set for open, flexible, well distributed learning environment (Khan, 2004).
So, for University students or those in higher education schools, the "e-Learning" education modality is most likely to be preferred.

Safety at Work for the Students Professionalism

Attending the general training workers' course, the various above-mentioned subjects acquire a professional continuing education credit, applicable, also, at the end of their university education. So, safety training is not just a legal obligation for the academic world, but also an added value, which can be used later, by whom acquires it, in the job world.
The educational institute will thus have reached its purpose, preparing the student for the professional world and, above all, it will have focused the attention on safety for those who will soon enter the job world.
The e-learning platform used for the project is a proprietary web-based platform, internally developed by AiFOS, thanks to the rich scientific literature on the subject (to quote some authors: B. Bruschi, M. L. Ercole, A.Calvani, M. Rotta, C. Delogu).
The implementation has also gone at the same pace as the legislative progress concerning the use of e-learning in Occupational Health and Safety training, which requires some in-depth analysis and ad hoc extensions, in order to respond to regulatory necessities. In the scientific literature some notions derived from andragogy (M. Knowles), of continuous learning and know-how have been preferred.

The experience of the University of Milan

The subjects involved in this experience, about 6000, have taken part the general workers' e-learning training. The project started in July of 2013, with medicine, biotechnologies, veterinarian, archaeology students, and it is still active.

Considering the large number of learners, the platform access was set up for one-thousand users groups, in alphabetical order. They could access the course for 50 days. The cooperation with the Human Resources Department and with professors was very important. They, in fact, reminded the students the necessity to attend the courses, by sending e-mails and giving notice in class.

The access was supplied through an integrated system for the users identification by connection of two computer systems with an easy procedure of initial handshake.

The users accessed to a private page specifically created on the institutional website of the University of Milan, where they inserted their own personal data and they were automatically redirected to the AIFOS e-learning platform, created ad hoc, adopting a look & feel model to optimize the usability.

In order to permit the migration of all participants from one platform to another one, they inserted the personal data of each user in the AiFOS system. They accessed it using their individual FISCAL CODES, which was the only way to verify the users' personal data.

The course was divided into three learning units and, to complete it wholly, they had to follow an obligatory path in which the user had to complete all of them without the possibility of skipping any parts of the course.

In order to enrich the learning, some summaries and intermediate self-evaluation tests after every learning unit were added. This allowed the user to revise and examine in depth the whole subject in question.

The cornerstone of learning units was interactivity. Every text interaction was equipped with audio material to accompany the student through the reading: the sliding presentation time of every interaction was calculated depending on the visible voice on the timeline of the advancing main menu showed in every slide.

Starting from the idea that by "learning on Internet, monitoring the student and helping him/her during the learning path is possible" (Calvani, Rotta, 2000) on the platform there was always an expert tutor. He was

always at the users' disposal for technical, regulatory and contents explanations, as indicated by the Attachment I of the Accordo Stato-Regioni of 21/12/2011.
The e-tutor monitored students through an advancement report and statistics, made possible by the SCORM model; thanks to this model the system traced each participant course so that every user could stop his/her study session at any moment and restart from the same point.
From an AiFOS research, carried on between May 2014 and July 2014, on University students, considered as equal to workers, it emerged that 76% of the interviewed agreed on the fact that the e-tutor was fundamental in the e-learning training. Almost half of them answered that the tutor was very helpful, for one third of them he was just sufficiently helpful, for 15% of them he was little helpful. To the question if the e-tutor had answered fully to their questions, 18,6% of the people answered a little, 28,1% sufficiently, 32% very much, and 21,3% extremely.
Platform communication was carried on with an asynchronous modality, through a system of private messaging and through the presence of a forum, that was used as a way of exchanging suggestions but also as a way of solving technical difficulties.
Through this kind of communication the teacher isn't present in a real time to support students but he interacts with them through e-mail and shared databases. Also correction of tasks, evaluation of projects, and control of services can be done in the same way. (Various Authors, 2003).

Conclusions

At the end of this path they released a final certificate and a copy of the educational citizen transcript ex D.Lgs. n.276/2003, to each participant, which registers the acquired permanent education credit, that is, therefore, an added value to enter the job world.

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SES-C1:

I MOOC COME SFIDA PER LA FORMAZIONE SUPERIORE

The Mooc (R)evolution. Where the EMMA project come from[1]

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Abstract

Academic institutions all over the world, as well as active stakeholders in the field of education, are exploring Moocs to understand how learning and teaching environments are changing, what are the outcomes of such a novelty for different countries and publics, to what extent the Moocs revolution can represent both a unique opportunity to open up education and a new business model.

Born to help universities and academic institutions to innovate pedagogical models, Moocs are developing along different routes. Using a policy framework analysis approach, this paper presents the results of a European survey that questioned both public and private stakeholders on Mooc policy design, objectives and expected outcomes.

The policy framework analysis was also the opportunity to define the main assets of a new TEL project at a European Level: Emma, the European Multiple Moocs Aggregator, an innovative Moocs platform lead by the University of Naples Federico II and based on its previous experience with the Federica web learning project.

Keywords: Education, TEL, Moocs, Policy framework.

Describing the European context

Variously described as a *disruptive innovation* (Horn and Christensen 2013), a *tsunami* (Brooks 2012, Bull 2012) and a *revolution* (Koller and Ng 2012), Massive Online Open Courses (MOOCs) have become a focus of public debate in recent years. Although the first MOOCs experiments date back to 2008, it was in 2012 with the development of bespoke MOOCs platforms that the phenomenon gained momentum prompting the New York Times to dub it the year of the MOOC. MOOCs are a new way of delivering open access, online courses that can be scaled up to reach potentially limitless numbers of users, crossing geographical confines to offer quality learning content to the global market (Pappano 2012).

In 2013 the phenomenon reached new heights. Many observers commented that it was like being «*in the midst of a hype cycle*» (Coates 2013, Yang 2013), while others feared that it was the overstatement surrounding the phenomenon that would prove their greatest obstacle to success (Dillenbourg 2013). Expectations are high in Europe too, but accompanied by a certain apprehension regarding the future of public universities and the way competition is increasing between old and new players for a position in this open and global education market.

The aim of this research is to understand what is happening in the European context: how the MOOCs phenomenon is perceived by key players in the field; what comprises the product and what the aims and strategies informing them are. Framework analysis lends itself to this type of research because it enables us to explore a new context through procedural analysis. This approach is designed to explore and describe the intial stages of a new phenomenon i.e. understand *what is happening in a particular setting* (Ritchie and Spencer, 1994). The research was structured on three levels. For reasons of synthesis here are reported only some insights from the first *MOOCs European Stakeholders Meeting*, and the main results from a stakeholder survey.

1 This paper is as excerpt elaborated from a research article by Rosanna De Rosa and Valentina Reda published on the online review LEA, bt Florence University Press 2013.
The full version is downloadable here: http://www.fupress.net/index.php/bsfm-lea/article/view/13850

Networking is leading

The *MOOCs European Stakeholders Meeting* offered the opportunity to see a policy community in action. The meeting was designed to find out how Europe is addressing the issue of Moocs, who the key players are and what strategies they are using. The summit highlighted a complex *geopardized* situation with some areas much more active than others but also an incredible range of key players (public, private, noprofit), some of them with different objectives and business models. A certain amount of *overstatement* undoubtedly surrounds MOOCs, and this is forcing universities to confront the issue without any clear vision or approach. This is reducing the innovative potential of MOOCs to competitive potential.

The key themes that emerged from the debate are here organized into the three sub-areas (fig.1).

The first sub-area is *policy issues*, where the policy community is called on collectively to provide informed and comprehensive answers. Where educational policy is concerned, this response needs to be an official *position statement* that clearly sets out: the role and position of the different players and the type of cultural and financial investment each one is prepared to make in order to attain the desired results. A complex scenario emerges, whereby individual stakeholders decide their own approaches and objectives depending on the policy paradigm adopted. There are three alternative paradigms.

The first is an economic paradigm, where openness means freeing up the education market and removing some of the traditional obstacles, creating new job and business opportunities and experimenting with new sustainability models to respond to government cuts in education spending and increased competition.

In the second, openness is interpreted as a way of democratizing access to higher education, and of wielding cultural soft power in parts of the world where there is less protection for human rights. Innovative teaching methodologies and knowledge transfer could help to achieve these objectives. And making results of publicly-financed research available would be a major demonstration of the impact that OER can have.

The last one sees the Europeanisation issue in terms of providing an adequate response to an education process which seems to be currently dominated by the Americans. This is why branding and marketing are key issues, as these define the power of platforms like Coursera, Edx, Udacity, because leading brands gain the top positions in online learning rankings as well. It would be impossible for Europe to compete with the attractiveness of the American products without an adequate marketing policy but if they do not do so the consequences could be very damaging: in terms of concentration of initiatives and resources, centralisation of the education market and uniformisation of cultural references. The outlook for smaller universities and those with no alternative business model is not good. One of their only chances of survival could lie in quality and specialist output, as Anderson discussed in his *long tail theory* (Anderson 2006). The third scenario seems to hinge on the europe vs platform debate; i.e. for or against the adoption of protectionist policies. The Bologna Process is a policy document for recognition of university credits, but, in this context, it becomes a tool for limiting standardisation to the geographical confines (European High Education Area).

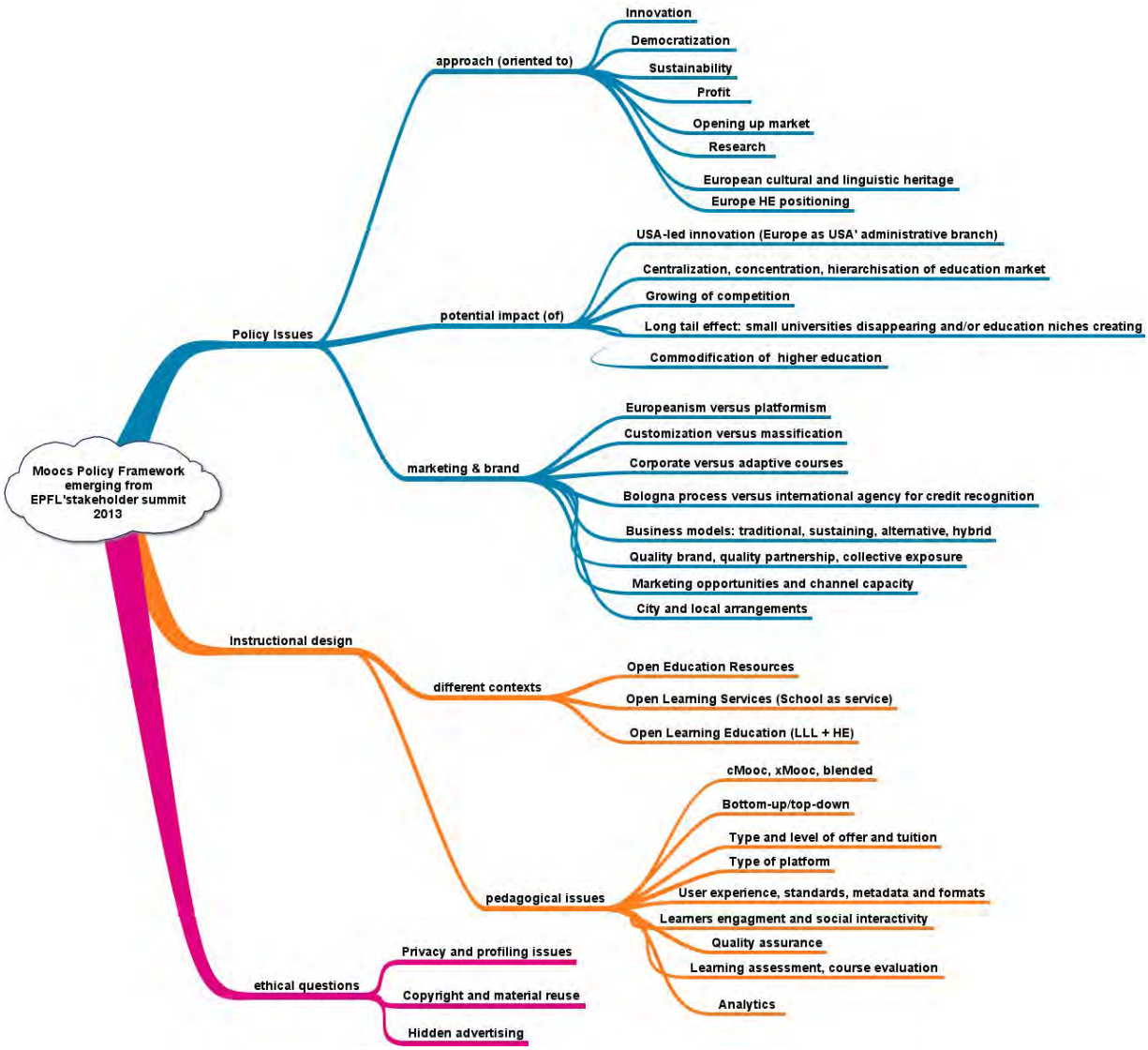

Fig. 1: Moocs Policy Framework

The second sub-area – that of *instructional design* – regards the need to devise new learning process models that reflect the context students live in, the way digital natives use cultural products and the pedagogic models underlying the development of platforms. A significant amount of literature now exists that deals with the structural, organisational and pedagogic differences between cMoocs, xMoocs and the advantages of one particular model over another. Siemens says that cMoocs, compared to the Coursera and EdX model (xMoocs), are unusual in a number of ways but especially because of the generative, connectivist, sharing and social vision of knowedge that underlies them, where the teacher acts as guide – not instructor – and the student has greater autonomy where time-management and learning style is concerned. Sceptics question the validity of this type of learning, and the lack of teacher-student relationship. They criticise the limited control over the learning content, which makes it difficult to define assessment criteria and procedures. The question of quality is often raised and brandished like a weapon in defence of the old teaching system, based on tried and tested methods of assessment, regardless of whether they are effective discriminators. xMoocs on the other hand, have the advantage that they can be scaled up whereas cMOOCs cannot go beyond a certain number of students. They also maintain almost exclusive control over the teaching content and tend to reinforce the authority of the teacher.

*Ethical issue*s are the third and final category. The collection of massive data regarding MOOCs users in a market which is basically unregulated, could prove to be a lucrative sector for profiling agencies and commerical and political marketing, and could threaten individual and privacy rights. Many students who have taken MOOCs refer to this in their post-course feedback, fearing that their failure to do well or complete the course could affect their chances in the job market. The insertion of more, or less, overt publicity is an issue that already needs to be tackled. There are teachers who base MOOCs on their own textbooks, others who seem to encourage the purchase of particular products or brands, like the musical instruments used in their lessons. And guidelines regarding the use and reuse of the materials and copyright seem, for the moment, to be somewhat vague.

Stakeholder survey: who and why

For the final stage of our research we carried out a semi-structured questionnaire on a two-tier sample. Our interviewees are mainly from the academic world: researchers, teachers or consultants involved in MOOCs.

In 70% of cases, the university where the interviewee works has already launched its own MOOC using diverse platforms but with the vast majority on Coursera (38,9%) followed by EdX (11,1%). The 31% of interviewees who belong to universities that have not yet launched their own MOOCs clearly believe that they should proceed in that direction and not stand still while the rest of the world moves on. This makes explicit reference to three major reasons dictating this need for change: changes in pedagogic paradigms, better access to knowledge and issues of inclusion, and marketing of universities.

One of the major stumbling blocks to tackle as regards MOOCs is the critical issue of Openness, a term which is part of the acronym and one which would seem to be a defining characteristic of this type of learning. Our sample was divided on the issue in pretty equal measure, with those agreeing that MOOCs are open standing at 53.8% and those expressing some reservations at 42.3%. Those who expressed reservations about the definition of MOOCs as open, pointed out that there are obvious contradictions between theory and practice, and that openness is not one of the dominant features of many of the MOOC courses available today. Interviewees also pointed out the tendency to over-use and over-simplify the term, openness is, in fact, a much more complex issue as it refers to different level of openness and degree of user liberty. Finally, they also refer to the legal aspects of openness, including issues of copyright and reuse of learning content.

Most people would like to see increased research and experimentation with Moocs as part of an overall university strategy to reaffirm the strategic importance of online learning and its role in lifelong learning. Moocs are often included as part of a University's committment to Open Education, but many people strongly feel that universities should go beyond experimental projects and use MOOCs as an integral part of traditional degree courses and as a an orientation tool for graduate job seekers. The major areas in which interviewees would like to see concrete policies implemented by educational institutions refer mostly to user mobility and innovation in teaching and learning.

While, in general, the picture that emerges is one of solipsistic and extemporaneous individual projects, the future of MOOCs in Europe as far as stakeholders are concerned is fairly clear. They see MOOCs as a new business model and a parallel alternative to traditional teaching, though not a substitute. Half the people interviewed were not in favour of offering university credits for MOOCs. The most common reason given was the difficulty in setting common assessment standards to ensure proper evaluation, and the dangers of plagiarism. Awareness of this problem does not prevent interviewees from considering a different option; that of using MOOCs as a support or parallel pathway to traditional teaching.

The potential to professionalise MOOCs and to make them available to as wide an audience as possible meant that half of our interviewees think MOOCs should be at least bi-lingual (in the national language and English), enabling institutions to increase their potential audiences abroad while reinforcing their national audience by offering the opportunity to study in two languages. Participants were also asked to

state what objectives the European Commission should set for the uptake and use of MOOCs. They were asked to express their agreement on a scale of 1-5 for each proposal. Almost three quarters of respondents (73,1%) agreed that a common European MOOCs strategy was necessary and that central to this was increased funding for projects and research and coordination of national strategies. The general view is that MOOCs are competing globally, and that single European nations are too small to be of relevance. In this respect, a holistic approach to the knowledge economy is more useful.

Participants wanted financial and political support from Europe but rejected the idea of direct European involvement. Half the respondents, in fact, were against the idea of a European Moocs platform, and more than half (61%) do not even want to develop a European MOOCs model. The idea of a common assessment framework for Europe was greeted more favourably, which was predictable in view of responses to previous questions. It reflects a desire to protect the autonomy of the individual institution and to keep the higher education market free from any attempt at supernational regulation. The aim would be to guarantee coordination not uniformisation. People are also concerned that the specific value and diverse nature of European MOOCs is successfully promoted, so much so that more than half of respondents (57%) were in favour of creating multilingual platforms.

While for other issues emerged from the survey you can refer to the already cited article, here we take the opportunity to present quickly Emma, as a project resulting from these research findings.

Emma. From research to implementation

According to stakeholder survey findings, Emma (European Multiple MOOC Aggregator) is a TEL initiative – coordinated by the University of Naples Federico II - aiming at creating and establishing an online platform that supports institutions across the EU in offering MOOCs, paving the way for a pan-European approach to online learning by bringing together a multi-linguistic, cross-cultural, and customized approach. Thus also providing a practical way for opening up university-level education to a much more diverse student audience.

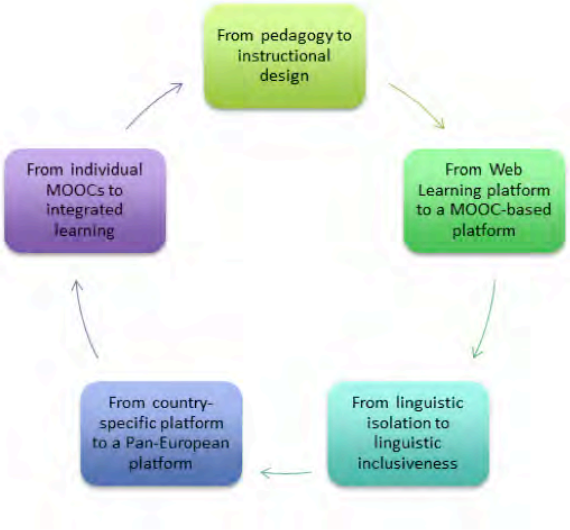

Fig 2: the Emma' five challenges

Seeking to expand the concept of the MOOC, five challenges have been identified as being critical to achieving the Emma' goals (fig. 2). These challenges will be explored – and transformed in assets - throughout the project:

1) *From pedagogy to instructional design*: the pedagogy behind each model and the instructional design that derives from this. To what extent can diversity be accommodated in a unique platform without losing effectiveness and consistency?
2) *From the web-learning paradigms to MOOCs*. *Changing paradigms:* Any education platform is a cultural artifact. Creating a platform that aims at supporting diverse approaches concerns integration/aggregation processes at a technical level, but also at a cultural level. To what extent can these processes be translated into sustainability, inclusiveness, and deployment within different social contexts?
3) *Accessibility through language. From linguistic isolation to linguistic inclusiveness*: Reaching students outside national boundaries is the main goal of any pan-European platform. But languages are not only about translation. How to approach linguistic to cultural translation?
4) *Accessibility through culture: from a country-specific platform to a Pan-European platform:* Current courses leave no room for diversity. Aggregation of MOOCs without language barriers, will enable learners to access MOOCs from differing cultural perspectives. But how to transform this multicultural perspective in added value?
5) *From individual MOOCs to massive and back again:* MOOCs are usually characterised by their massive nature. Even in such a context, learning remains an individual task. How to ensure a mindful and individual learning experience in a massive learning environment?

To respond to these challenges, EMMA provide:

1) a flexible pan-European platform with range of features (agile approach)
2) adaptive acccess to related learning resources (External Resources, Europeana)
3) 16 MOOCs with different elearning approaches and instructional design
4) multilingual transcription/translation system
5) extensive monitoring system and inbuilt cycles of improvement
6) massive and individual learning path combination
7) choice of PLE with some adaptive features and building block approach

During the project period, the partners collaborate together to provides MOOCs as well as experience and expertise in the field of e-learning, learning analytics and innovative translation technology, supporting the improving of the platform, its deployment and exploitation. So, finally, the research results offered a unique opportunity for organising and implementing a Project, creating a European brand on the international stage, using the European linguistic richness (24 official languages) as an enormous opportunity for reaching target audiences in other parts of the world, and – last - considering the legacy of academic cooperation already available as an opportunity to create an institutional network for credits recognition as a valuable issue to reinforce the European High Education Area.

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Bridging Students' Soft Skills Gaps Beyond University's Path: Polimi Open Knowledge

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Abstract

Students in STEM (Science, Technology, Engineering and Mathematics) enter the labour market with recognized high level technical skills, but often need to enforce their soft skills in order to build effective professional relationships, according to companies view. Polimi Open Knowledge (POK), the MOOCs portal developed by Politecnico di Milano, starts bridging this gap with a series of MOOCs on soft skills, opened by Conflict Management and Change Management. In these MOOCs an innovative role is played by the integration between role plays and clips taken from famous movies in order to foster individual engagement.

Keywords: MOOCs, soft-skills, STEM, bridge-the-gaps, open-knowledge

1. How Polimi supports its students (but not only!) in overcoming their soft skills gaps

Politecnico di Milano (Polimi) is one of the major Polytechnic Universities in Italy. Our students take degrees in Engineering, Architecture, Design. METID (the service of Politecnico di Milano, devoted to e-learning and e-collaboration http://www.metid.polimi.it) designed the MOOCs platform Polimi Open Knowledge - POK (www.pok.polimi.it) on the basis of OpenEdX.

Figure 1. www.pok.polimi.it

POK portal has been conceived primarily in order to accompany students while they try to overtake all the obstacles they meet in the main passages of their career:

1) *from High school to University* (in order to improve and consolidate their high school skills before starting courses at Polimi);
2) *from Bachelor of science to Master of science*, (aligning their acquired skills to the ones of Polimi Master of Science, if they come from another educational path);
3) *from University to job*, strengthening and enhancing their soft skills to smooth the step that takes them into the job scene.

This paper focuses on Soft Skills courses. It describes the experience METID is tracing in order to design and publish the online courses available on POK portal, starting from the analysis of the existing soft skills courses scenario, through the design activities, then to the implementation phase and – finally - to the monitoring process, which is still in the design phase and partially implemented.

2.The existing scenario of soft skills online courses: why not them?

There are multiple open courses focused on all kind of soft skills in the online education scenario nowadays: why not to suggest them to students? Because creating MOOCs to bridge the specific gaps of STEM students requires to listen carefully to students specific needs, while potential other users don't have to face that particular passage from an identity of "student" to the identity of "worker". On the contrary, Companies' courses on soft skills, usually ask to "workers" to get back to "student's perspective" for a while, and study/experiment new skills in their everyday environment at work.

Since this is the scenario of available courses, we needed to differentiate: POK courses on soft skills focus on the need of students to come in touch with situations, problems and attitudes they may not have experimented yet, giving them the choice between deepening their theory background and/or preferring a more practical approach, through examples, exercises and role plays. The strategy we adopted takes as much as we could afford from J. Juul's "gameness" approach, mainly in the relationship between the player and the game, especially in role plays (Juul, J., 2003).

3. Choices: soft skills' topics and courses' availability

In July 2013 Polimi sent a questionnaire to a large number of companies of its network, in order to collect their perspective on Polimi graduated students' preparation; 130 answers were collected, picturing this scenario: while all companies recognize a high level preparation in all technical fields, new employees coming from technical universities seem to lack of soft skills, negotiation and change management on top.

Polimi had also to choose whether to make these courses available only for its 38.000 students or in an open environment, addressing them also to students from all other universities, in order to give the chance to raise as much as possible the background level of new-comers to the working scenario, independently from the university they come from. Sharing knowledge is one of the main objective of this strategy, that's why POK is an open environment and courses are available to anyone, anywhere.

Since these skills are strongly connected with cultural issues, the first choice was to design these first courses in Italian language, but it is just a first step: in the platform English courses will be available soon on different technical topics, but in the next future also soft skills courses may have an English version available.

4. How are these courses designed?

The structure of a course is made by the specific contents divided into weeks and modules, according to EdX main framework; in other sections we collect insights, in order to support students in going deeper into their own experiences at different levels, and to recognize first of all if

they've already acquired a "taste" of the skills related to the course. Thus students are accompanied in bringing these skills to a conscious level and in using their experience consistently with different situations and issues taken from everyday working life. The choice of this approach is aimed at giving the greatest importance to personal attitudes to learning, including time schedule and interest into the insights.

A content expert is involved in the design of each course, with an instructional designer on the side along the whole process; this second professional is not only expert in didactical technologies but also in the specific content: this specific strategy is aimed at making the process sustainable, because otherwise the presence of the content expert would have been needed during the whole implementation of the courses. The instructional designer, thus, is focused in matching the main content needs with the adopted didactical approach and the platform boundaries that has to be taken into consideration.

Role plays, comics and movie clips, which are a consistent part of the courses, are quite new in the MOOCs scenario: METID strongly believes that the direct involvement and pleasant contents can lead to better results in learning. While movie clips offer the chance to analyze part of fiction stories according to the course's objectives, putting the students in the shoes of different characters and guiding the analysis of paradigmatic situations, role plays push the user to engage with different reactions in order to learn from consequences, still remaining in a protected environment, as the one typical of a learning path.

Figure 2. Example of role play

METID designed only small social activities for sustainability reasons, since we are at the beginning of the experimentation and our internal request was to produce modules for individual study, as stated in the first part of this paper. In perspective we are going to increase the interaction in the platform, according to the willing of the institution and the available resources; at the moment it is limited to personal initiatives in reserved rooms.
A set of tests closes each module: students who complete and pass the course will have a note about it in the Supplement diploma which accompanies their formal university degree with all additional courses and official performances.

5. Students' involvement during the design and implementation phases

Students have been involved since the very beginning, in order to design both structure and graphics taking into account their preferences and their comments about our proposals. METID organized focus groups in different levels of content's development, in order to verify the perception, the satisfaction and the impression about usefulness, clarity, immediateness, and pleasantness of the courses themselves. Students have been asked also to describe their other experiences with online courses in general and MOOCs in particular, and also these descriptions have been used in order to sharpen POK offer. All comments have been taken into account and, when possible, implemented to improve quality and effectiveness of courses.

Thanks to students comments, furthermore, the course on Change Management is going to be integrated with interviews to HR directors, and to former POLIMI students, in order to give a direct insight into particularly interesting case studies.

6. Next steps: monitoring and customer satisfaction

POK portal was launched in June 2014 and at the beginning of November 2014 counts 47.000 visits and 4000 users. The first edition of Conflict Management closed on the 3rd of November 2014; the first edition of Change Management is ongoing; even if we never took action in spreading news about Soft Skills courses, the first two courses count around 800 users. A new course on Team Working will be available in 2015.

Interviews and questionnaires addressed to students will be sent as soon as the first edition of each course comes to an end, pointing at measuring the didactical effectiveness, the most adequate formats and the perception users have about the consistency between the courses and their upcoming professional development. From the analysis of results coming from the first edition we will organize face to face meetings in order to disseminate results, invite new students and integrate these courses with face to face activities, as soon as the university is ready.

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Learning Analytics, the thorny issue of data gathering for MOOCs

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Abstract

One of the critical issues emerging from the scientific debate about MOOCs is related to what approach to learning analytics (LA) to adopt. Within the context of MOOCs, in fact, the issues araising from the floor concern the main purposes and challenges underlying tracking and data analysis as well as tools and methodology that best serve the "teaching by data" purpose. This paper seeks to relate our experience of trying to adapt and extend LA debate and tools to the Federica system, since the Federica Web Learning portal of the University Federico II, (http://www.federica.unina.it/) is now launching MOOC courses, complete with timeframe and assignments.

Keywords: MOOC, Learning Analytics, improve learner experience

Introduction

Learning Analytics (LA) is defined as the "measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs". This definition dates back to the 1st International Conference on Learning Analytics and Knowledge (LAK) in 2011.

In 2013, the *Horizon Report* described it as a "field associated with deciphering trends and patterns from educational big data, […] to further the advancement of a personalized, supportive system of higher education" and there appeared to be growing interest in the subject on the part of academic institutions.

These two strands of analytics, focusing on the quality of the content and the personalisation of the learning experience, are also mentioned by Greller and Drachsler (2012): «Learning Analytics will become a powerful means to inform and support learners, teachers and their institutions in better understanding and predicting personal learning needs and performance». However, they also intimate at differences between theory and practice, pointing out that «the processes and requirements behind the beneficial application of Learning and Knowledge Analytics, as well as the consequences for learning and teaching, are still far from being understood» (p.42). Clow also concluded that there is no substantial reference in the literature to application of LA to MOOCs (Clow, 2013).

The jury appears to be out on whether effective tools are yet available: «Analytics tools and techniques that focus on the social pedagogical aspect of learning are required» (Siemens, 2012, p. 3).

This formed the backdrop to the decision-making process regarding LA at Federica, the Web Learning portal of the University Federico II (Campus Virtuale Project, FESR 2007-2013), (http://www.federica.unina.it/) which is now preparing its MOOCs launch.

Learning data and learner classification

In the field of LA, at least two different levels of data collection, comprising quantitative and qualitative data, seemed to be important:

1) analysis of user behaviour: including an overview of traffic, enrolments per course, number of lessons followed and completed, assignments corrected, number and length of contributions to forum, hours of study, videos watched;
2) analysis of users and levels of user satisfaction: including qualitative feedback, engagements in participation as well as social media activities

Both levels overlap and form part of a third level which we called "functional" i.e. the basic data to enable teachers to monitor student presence, engagement and performance in case of awarding certificates of completion, or performance badges. This requires the provision of teacher as well as student dashboards.

While recognising the importance of the functional data, the Federica team wanted to go further, and investigate aspects of learning outcomes and sustainability.

Identifying learner type

Early research into MOOCs tended to highlight the high drop-out rates on this kind of course compared to more traditional education (Clow 2013) but the utility of drop-out rates as a measure of success is questionable when many MOOC users have no intention of finishing the course. The work of Dietz-Uhler & Hurn (2013) illustrated that from hearing about a course and deciding to register to actual knowledge acquisition is a natural funnel effect (Fig. 1), so far fewer learners actively interact with course content than start the course.

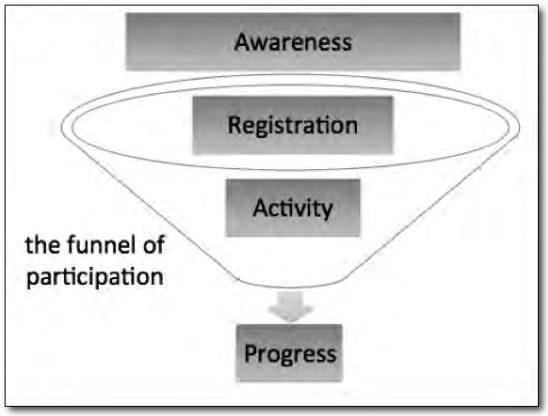

Figure 1: The funnel of participation. Source: Dietz-Uhler, B., Hurn J. E. (2013). *Using Learning Analytics to Predict (and Improve) Student Success: A Faculty Perspective*. Journal of Interactive Online Learning. Volume 12, Number 1.

This led certain authors like Milligan, Littlejohn & Margaryan (2013) to establish categories for MOOC students according to their behaviour online. These categories enable MOOC providers to differentiate the kind of LA they use, modifying it according to the specific category:

1) **enrolled** (explicitly "enrolled" the course);
2) **not started** (enrolled, but have not returned to course);
3) **lurker** (enrolled and has returned to the course once);
4) **passive** (enrolled and has accessed one material and participated in one discussion or submitted one assignment) (dissatisfied);
5) **active** (has accessed 50% of the materials and submitted 50% of the assignments or participated in 50% of the discussions);
6) **drop-ins** (enrolls, but is active in one-two weeks only and are satisfied).

This classification led to another round of questions: what information should we get from all users? How can we find out why the "not starters" didn't start? At what stage do we ask a drop-in or a passive

learner to complete a questionnaire so it is early enough to have their cooperation but late enough to elicit useful feedback?

Brief focus on questionnaires

For information-gathering via questionnaires the prime consideration is not to overload learners, especially in the early stages and to use multiple choice questions to focus closely on strategic objectives regarding users and their response to both the platform and the MOOC courses. An initial possibility is to use questionnaires in 3 phases:

1) **Registration Questionnaire:** brief but including basic demographic data (age, gender)
2) **Expectation Questionnaire:** profiling (educational background, nationality, status, profession and qualifications) as well as supplementary information (native language); how they heard about Federica, reasons for enrolling, expectations from course;
3) **Exit Questionnaire:** whether expectations were met; reaction to specific aspects of courses e.g. format, videos, time-frame, assignments (number, type, level of difficulty).

Pierre Gorissen in an article in the Media and Learning Conference Newsletter (August 2014) highlighted how self-reported information in questionnaires is less reliable than tracking data.

This reinforced our intention to try and provide questions where learners did not feel they had to make a good impression or demonstrate their performance.

Final Remarks

The million dollar question still remains: what data is it strategically useful to collect?

Our analysis seemed to point at "levels and quality of student engagement and reasons for this". The literature, as we stated above, focuses on the concept of improvement of content and services. In an ideal world "improve" would mean turning the data into information that leaders can use to make informed decisions" (Knowledge Advisors Report 2012). But how can we ensure that LA really "enhances the eLearning experience"? Pappas in a recent article gave "5 Reasons Why Learning Analytics are Important for eLearning" (predict learner performance; personalise learning experience; increase retention rates; improve future courses; boost cost efficiency) (Pappas 2014).

Our reflections left us with interesting food for thought. Exciting developments in technology allow for more sophisticated forms of data collection and analysis that could provide new insights into pedagogy and learning processes in general. But whilever the tracking devices remain platform specific, we can only measure what happens within the confines of any LMS, and ignore the learning that goes on outside that space. Basic Deweyan concepts of experience and learning through interaction are ignored. The thorny issue of how to extend tools to collect data encompassing the whole learning experience in a digital world remains.

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MOOCs for Teachers: eBooks, Digital Storytelling and EXPO2015[1]

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Abstract

In school year 2013-14, HOC-LAB at Politecnico di Milano was one of the first Italian institutions to design and deploy MOOCs. Two MOOCs were offered, aimed at teachers: "eBooks and Digital Publishing" and "Digital Storytelling at School". In both cases, efforts were spent to carefully design the educational experience, to provide learners with good quality content and to support them during the course; issues like professional video-editing, on the other hand, were purposely neglected: costs were thus kept low. The MOOCs gathered a remarkable number of participants (on the whole, almost 2,500) and gave vent to fairly positive results. In this paper, we present the design of the two MOOCs and the evaluation data. The main lesson learned is that a low-cost approach that puts the quality of the content and of the pedagogical implementation at center-stage can be very effective.

Keywords: MOOCs, eBooks, Digital Storytelling, EXPO2015

Introduction

In school year 2013-14, HOC-LAB (Politecnico di Milano) was one of the first Italian institutions to design and deploy MOOCs. "eBooks and Digital Publishing" was the first, followed by "Digital Storytelling (from now: DST) at School". Both were aimed at teachers on the job, of all school levels.

The choice was to keep production values to the minimum, in the belief that a strong instructional design and pedagogy as well as the so-to-speak "intrinsic" quality of the content would be more important. The budget was thus steered towards experts' involvement rather than, for example, professional editing of videos and other resources. The evaluation data, gathered through online questionnaires, seem to prove this choice right: first of all, completion rate is very high, above international standards; second, satisfaction is good, especially as regards the content and course's structure; third, teachers seem to have undergone a positive change of attitude towards the courses' subjects.

State of the Art

MOOCs have only recently appeared on the scene (having gained momentum in 2012, the "year of the MOOCs"), but like most of the things in which technology is involved, they are evolving at a very fast pace. The first MOOCs began as a hybrid between Open Educational Resources and online courses and were mostly focused on knowledge transmission (Gaebel, 2013; Liyanagunawardena et alii, 2013; Various Authors, 2013; Ghislandi, 2013). Over these few years, MOOCs have started to differentiate into kinds. The so-called cMOOCs (connectivist MOOCs) are based on cooperation among participants, who are expected to share knowledge and resources, give feedback and support to peers, etc. (Crowley, 2013; Reeves, 2013). xMOOCs, on the other hand, are more focused on knowledge transmission, through video lectures, quizzes, discussion, peer assessment. In a sense, they are more

[1] This contribution, fully shared by the two authors, was drawn up as follows: paragraphs "State of the Art", "Results" and "Conclusions" by Nicoletta Di Blas; paragraphs "Introduction" and "Case-studies" by Aldo Torrebruno.

passive with respect to cMOOCs. As Siemens (2012) point out, "cMOOCs focus on knowledge creation and generation whereas xMOOCs focus on knowledge duplication." A third kind of MOOC is the pMOOC, (project-based MOOC), focusing on knowledge production through a constructivist approach.

In this paper we present two case studies, a cMOOC and an xMOOC, paving the way towards two MOOCs on the EXPO2015 themes, about to be deployed.

Case-studies

The "eBooks and Digital Publishing" and "DST at School" MOOCs are both characterized by low-cost production on one side and careful instructional design on the other, building on top of over 10 years of experience in designing and delivering online courses for teachers (http://www.dol.polimi.it). The choice was to invest on the creation of high quality content rather than on professional packaging.

The goal of both MOOCs was to provide teachers (of all school levels) with theoretical and practical tools to introduce two topics currently widely discussed into their standard school activities. The "eBooks and Digital Publishing" MOOC focused on different types and formats of eBooks and eReaders, on the new ways of reading and writing facilitated by them and on strategies for adopting (basic level) or designing and implementing (expert level) eBooks. The DST at School MOOC presented the state of the art on DST for education and introduced the steps for multimedia story-creation within a class, discussing the related pedagogical issues (organization and benefits).

In both cases, the materials (videos, documents, tutorials) were organized into a structure of 6 phases, spanning 8 weeks. Being the MOOCs asynchronous, students were free to follow the suggested educational path at their own pace.

Both MOOCs were disseminated among the HOC-LAB alumni community, through the local branches of the Italian ministry of education and through social networks (HOC-LAB Facebook page and Twitter account). Since numbers of enrollment were very high, it is apparent that word of mouth played a major role too.

The eBooks MOOC was mainly a cMOOC, where participants were encouraged to cooperate (through the forum), while the DST MOOC was an xMOOC, mainly focused on passing of knowledge. This latter though included a wiki (a "pMOOC" component), where students were invited to contribute with reviews of tools for DST. In both cases, the community was poorly sketched, without a definition of roles, rules for posting, tutors: this led to a quite messy development.

Results

Due to lack of space, only the main data of the MOOCs will be presented (a report is available). Let us begin with the numbers of the eBooks MOOC.

1) 1802 teachers enrolled
2) 1293 (71,7% of the teachers enrolled – "participants") made access to the platform
3) 309 (23,8% of the participants) delivered the final project
4) 188 (14,5% of the participants) successfully completed the final self-assessment quiz

The fact that almost 15% of the participants got to the end of the course is a remarkable results, since most MOOCs have completion rates lower than 13% (Jordan, 2013).

Most of the participants (44%) were from high-school and – quite surprisingly – most were also aged: 63,7% were over 46.

The questionnaire on the results, filled in by 423 teachers, shows a general satisfaction. On a scale from 1 to 5, contents were considered interesting and stimulating (3,68). The structure of the course was the second most appreciated aspect (3,56). More important, teachers agreed that what they had learnt could be fruitfully embedded into their activity in the classroom (3,45).

Eventually, 91,6% of participants declared that they would recommend the course to colleagues.
The numbers of the MOOC on DST are lower, but the completion rate is again very high:

1) 630 teachers enrolled
2) 508 (80,6% of the teachers enrolled – the "participants") made access to the platform
3) 147 (28,9% of the participants) delivered the final project
4) 168 (33% of the participants) successfully completed the final self-assessment quiz

Data on participants' profile are consistent with respect to the previous MOOC: secondary high-school is the most represented school level (35,5%); most participants are quite aged: 69,3% are over 46.
The results show a good impact: 63,8% of the teachers acknowledge the usefulness of DST in education and a surprising 97,5% declare that they will actually implement a DST activity in their class. One last note: participation to the wiki (about DST Tools) was very high (over 300 posts), much higher with respect to all other forum's threads.

Conclusions

The main lesson learned is that the quality of the content matters more than the quality of the container: the high completion rate, the data on satisfaction and change of attitude show that a low-cost approach, where most of the effort is put into the instructional design and the content rather than in the production value, can give vent to a meaningful experience. In the current scenario, in which small/medium institutions around the world are starting to wonder whether to become MOOCs providers, the message that "yes, you can", even if your resources are not comparable to those of Stanford or MIT, is, in our opinion, a good news, in line with the MOOCs' inherent philosophy of "democratization" (Koller, 2012). It is not only a matter of allowing everyone to access resources but also a matter of *empowering everyone to share their own resources*.

The second lesson is that the community is a crucial component, but needs a careful design, since the boundaries between formal and informal education are unclear: some teachers complained about the absence of a tutor (in spite of the fact that they had been told so from the start) while some others mistook their peers for tutors (and thanked them).

The third lesson is that pMOOC activities, like the wiki in the DST MOOC, are a powerful means to involve participants and sparkle cooperation.

Capitalizing on this experience, two new MOOCs have been designed and will be deployed, starting in October 2014 (www.policulturaexpo.it/corsi-online-mooc/). The occasion is the EXPO2015 international exposition, for which HOC-LAB is in charge of the School Project, at national and international level. One MOOC will be about "Education and the EXPO themes". Again, the focus is on the quality of content rather than on the production value of videos: a number of interviews' transcripts to experts, reinforced by educational guidelines created with the support of a team of teachers. The other will be a pMOOC, to support the teachers who will create a digital storytelling about the EXPO themes. This MOOC will implement a many-to-many communication system, providing participants with an organized place where issues and problems are shared and possibly solved. In order to keep the thread of discussions more focused, in both cases a staff of trained teachers, alumni of our online courses on technology-enhanced teaching, will support the communities.

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Beyond blended e-learning: a case study at the University of Cagliari

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Abstract

At the time of convergence culture, social network, and transmedia storytelling - when social interactions are constantly ri-mediated - e-learning, especially in universities, can not be conceived any more as a practice completely self-guided and separated from the other educational environments. In order to build an effective Learning Environment, online instructional setting, multimedia courseware, and other virtual education tools, should become smoother and able to fade out the closed learning environments as software platform and classrooms (either virtual or not). In this paper we will show the experience of the Communication Sciences degree program of the University of Cagliari, which is supplied through an e-learning method). In the ten years since its foundation, the approach has evolved from a blended learning with two kinds of activity (online activity and face- to-face lessons) to a much more dynamic learning experience, in which many new actors are involved in educational and teaching process: communication companies, local government, public-service corporations on the one hand, the universe of new media and social networks on the other.

Keywords: e-learning, social media, blended, transmedia storytelling

Introduction

In this paper we will describe the ten-year experience of blended learning in the Communication Sciences degree program of the University of Cagliari, in which the teaching strategies are not limited to the interactions between online and face-to-face delivery activity, but mixes up most of the factors (institutional, educational, working, playful media environments) in which students learn.

State of the art

Usually, the term 'blended learning' means a particular forms of teaching with technology and more specifically a mixture of e-learning and more traditional forms of learning (Holden et al. 2010). Like so many terms within this field, however, it remains ambiguous and ill-defined. The most commonly accepted meaning, however,, sees the blended learning as a combination of traditional learning with web-based online approaches (Oliver and Trigwell, 2005; Bonk and 2006). The blended learning is most widely used within the training tradition, rather than within public education; there, its importance arises from the failure of purely online learning to meet the training needs of organisations (Driscoll, 2002).

The experience at the University of Cagliari

In this paper we will follow a pragmatic approach that refers to a twofold aspect: 1. a curriculum that includes portions of traditional classroom instruction with other portions accessed on-line (Driscoll, 200); 2. the use of multiple media—synchronous or asynchronous—to achieve an integration of instructional methods. These factors have been changed over time as effect of evolution of technology and its impact in social interaction and communication activities (Dron and Anderson, 2014).

In particular, the birth and explosive spread of new media and social networks (Ranieri and Manca, 2013) has had a very strong impact on the evolution of the Science of Communication degree program of the University of Cagliari, which is supplied through e-learning methods (Favrin and Gola, 2011; Gola and Favrin, 2011). At the beginning (2006-2009), teaching courses were structured into two

distinct kinds of instructional activities: multimedia online products/videos and off line face-to-face lessons. Furthermore the Moodle platform represented a closed system: its boundaries corresponded to the boundaries of learning possibilities. This approach was successful, but the program was mainly drawing the interest of adults and working students, which both like to have fixed materials and rigid planned activities. Until 2010, when new media and social network became widely popular, things evolved and changed a lot. Year after year, the learning environment started to spill over its boundaries to reach other effective external learning. First of all social networks became an important component of the learning environment. In addition real world institutions and companies started to bring teaching outside of the university walls.

The first step in this direction has been a sort of internal stage (Progetti "CaT" - Crediti a Tempo), in which students have been involved in "job-like" tasks. The interesting aspects of these projects have been mainly two: on the one hand the interaction through the platform that allowed the organisation of activities; on the other, these projects realised specific goals -such as organization of events, preparation of advertising material, functions of the press office and public relations for the course, video recordings of seminars and interesting events, functions of social media team- in which educational contents have been implemented in real assets.

These opportunities, which were designed to enhance the skills of the students, gave them a way to be involved in live real activities, which were managed through the virtual environment: registration, submission of their applications, compensation with college credits (CFU) -similar to those obtained with the external training, assigned in proportion to the effort expended in assigned tasks-, are all aspects that an exclusively online or a traditional face-to-face teaching would not have allowed. The management of interpersonal relationships, the need to structure an organization to carry out the task and contact with faculty outside of the standard relationship teacher-student have proved very important for the education of students. Eventually these factors lead, almost naturally, to the integration of the Moodle platform with the social media toolkit.

For all these reasons, in the 2012, when we designed a short course and a master's degree, we decided to develop an integrated learning environment, in which the virtual platform was not a self-contained and closed environment, but rather, a starting point for the whole educational path.

We have reached this goal both by increasing the number of CaT projects and by transforming them from simple collaborations in the internal activities of the course degree, in true task force of students capable of supporting all the initiatives related to communication in the territory.

In this way, the course was able to follow out systematically:

1. Conferences promoted by the University: six editions of "Com.unica senza frontiere" festival dedicated to support the degree course; international research conferences including the RaAM's world biennial conference "Metaphor in Communication, Science and education". In these cases, the students' task was not only to cooperate in logistics but also to narrate the conference using different types of social networks and all available media; workshops and specific lessons were organized to train the students in the most effective use of social networks.
2. Some local and national events related to communication and valorisation of cultural heritage: the event "#Invisibili", exhibition of illustrations created within the project of rewriting on Twitter (twitteratura) Calvino's novel *Le città invisibili*; "L'invasione digitale dei Giganti di Mont'e Prama", guided tour of the nuragic sculptures exhibition located at the Archaeological Museum of Cagliari and, at same time, related by the students with images and text on social networks; "#NBTW" ("La notte bianca digitale"), organized by "Invasioni digitali" and the influencer @insopportabile: dedicated to the culture and tourism under the slogan "The culture never sleeps"; the cultural event "Monumenti aperti" promoted by the Region of Sardinia and many other associations: on this occasion the students, in addition to social curation, made an experiment in transmedia storytelling (Giovagnoli, 2013), by producing videos and digital stories to promote the cultural heritage of Cagliari area.

From the educational point of view there were major positive side effects, as well as the skills acquired by the students in conducting the activities related to the events. Above all, there was an interaction among university courses of different degrees (graduate degree and post-graduate short

course in Management of communication products and services), among students from different profile (youth, adults, workers) and among teachers of different subjects that integrated knowledge and skills for the realisation of a specific goal.

The design of the courses in communication area at the University of Cagliari followed a strategy, which is similar in its structure to a transmedia storytelling process. There is a narrative "core" (the Moodle platform with its clear terms) and educational goals, from which many storylines originate (learning paths). Students can freely select among the available storylines, depending on their personality, their preferences, and the skills that they possess or whish to acquire. These storylines, indeed, are available in every media and students can follow a storyline alone or can integrate them: orality (F2F lessons, lectures, seminars or events), writing and reading (activities related to journalism and publishing), audiovisual, social networks, gamification (activities related to filmaking and communication of cultural heritage, etc.). Structured this way, the course offers students a real media education, which, for an undergraduate degree in Communication Sciences, should be a major objective. In any case, the more classical activities of e-learning do not disappear, especially because of students who are already employed, as they do not, usually, have time to participate in the collaborative activities.

Conclusions

This integrated and open learning environment has produced very important results for the whole educational offer in Communication Science:

1. While in the early years of the Degree the strict mode of delivery in e-learning especially attracted the attention of adult and worker learners, starting from academic year 2010-2011, the number of enrolled young students has increased. Indeed this has coincided with a positive trend in absolute terms in enrolments between 2010 and 2013 (fig. 1).

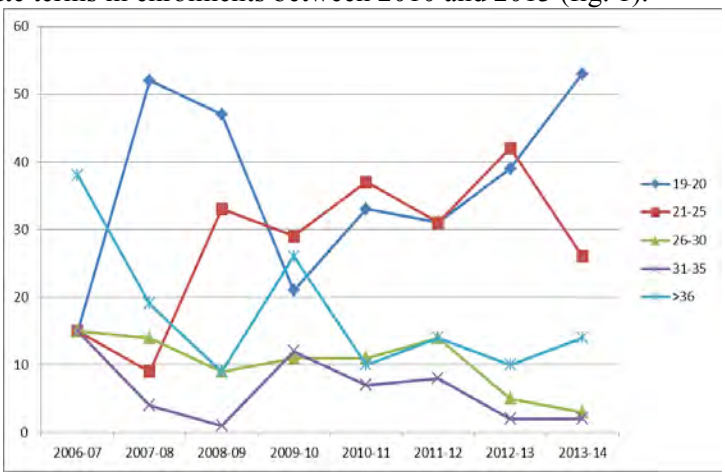

Fig. 1. Trends in age of students

2. A shortening of the distance between university education and lifelong learning. This distinction initially had the disadvantage of creating "ghettos of learning" (student workers and not, young and adult students; learning for pleasure or necessity, etc.). Furthermore, a positive side effect has been an easier and fruitful exchange of information and expertise between the courses and the categories of learners.
3. A close relationship with partners in the business world and the needs of the market. Through the many initiatives that the course organized and participated, the students had:
   a) The opportunity to meet and approach -in a collaborative and creative way- communication companies, local government, public-service corporations, since the first year of the course (fig. 2).
   b) The opportunity to know and use new communication tools web based, thanks to the

collaboration between "adult" students and "young" students.

4. The opportunity to test immediately - on the field- the theoretical tools learned during in-class time or through the knowledge content accessible in the platform, making a concrete experience of "cognitive apprenticeship."

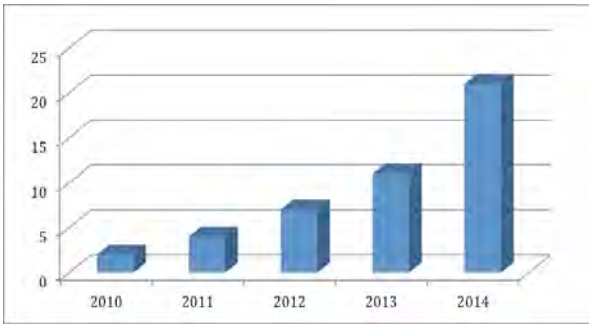

Fig. 2. Increasing of activites for companies and organizations

Thus, the meaning of the term "blended" assumes a wider and smoother sense than the traditional perspective that put together the two separate dimensions of online and offline. This widening of the meaning has been mainly caused by the increase and growth, in these last years, of web interactive media (Ragone et al. 2011).

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BloP: easy creation of Online Integrated Environments to learn custom and standard Programming Languages

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Abstract

In this paper we will describe BloP, a new programming tool that has been designed in order to allow teachers to quickly and easily develop their own online IDEs (integrated development environments) for their programming language of choice. IDEs developed with BloP are pure Javascript code and can then run inside all major internet browsers without need for any extension or plugin. Moreover, BloP IDEs can be embedded inside SCORM packages in order to be straightforwardly added to every e-learning platform supporting the SCORM standard. BloP is based on the same philosophy of Scratch, the most successful programming environment of the last decade.

Keywords: programming languages, integrated development environment, e-learning platform, SCORM, Scratch

Introduction

Modern e-learning courses that are focused on the topic of *fundamentals of computer programming* often make use of online versions of programming environments for standard programming languages. This is not limited to expensive courses, but it is also true even for free online courses offered by prestigious institutions (Coursera, EdX) that are based on online environments in which students can test their knowledge of modern or classic programming languages such as Python (https://class.coursera.org/programming1-002) or C/C++ (https://courses.edx.org/courses/HarvardX/CS50x/2014_T1). Furthermore, a lot of online environments, even not specifically developed for e-learning courses, are today available that allow the execution of a full range of programming languages, or scripting languages, as online applications running inside a modern internet browser. Online environments exist for almost all popular languages such as Javascript, PHP, C/C++, Python, Ruby, Bash Shell, Lisp, SQL and others.

Why are online programming environments so popular today? Online Integrated Development Environments (IDEs, that is tools that allow users to write, run and compile code written in a given programming language) have a lot of advantages: they offer an unprecedented opportunity to make available to students powerful environments that do not require going through complex installation procedures that may go well beyond their skills; they are available just through regular internet browsers, ready to be used; they are usually lightweight, just building upon the standard features of regular internet browsers; most importantly, if integrated in an e-lerning platform, they allow the teachers to follow the step by step evolution of their students.

What is the drawback? Online environments are mainly available as type-and-run tools for standard languages and are not tailored to the specific needs of students that are starting to learn not just a further programming language, but that are just starting to learn a completely new paradigm like computer programming.

Likely, building upon the incredible experience behind the development of Scratch, an outstanding programming language and IDE designed and developed by MIT (Massachusetts Institute of Technology, Boston) since 2007, new online environments to create and execute Scratch programs such as Scratch 2.0 (http://scratch.mit.edu) and *Scratch-like* languages such as Snap (http://snap.berkey.edu) have been presented in recent years. In this paper we will briefly describe the specific features of Scratch-like programming languages and then we will illustrate BloP (short for *Blo*ck *P*rogramming) an advanced version of Snap that has been designed in order to allow teachers to build simple IDEs for a new, custom programming language or for (a subset of) a standard programming language.

State of the art

The most successful tool of the last decade that has been initially developed to teach the concepts of computational thinking that are behind computer programming to 8 to 16-years-old students, but that is currently also used in several courses at the university level (Humphries, 2010; Rizvi et al, 2011) is Scratch (Resnick et al, 2009, pp. 60-67). Scratch is a *block language*, that is a programming language based on the philosophy of building blocks, reminiscent of the Lego bricks: building blocks of different colors -each color having a specific function- are snapped together in order to build working programs. The set of available blocks, that represent the commands of the Scratch programming language, is clearly visible in the Scratch palette and the shape of the blocks guide the user on how to assemble the program by avoiding the possibility of building non-meaningful or wrong combinations of blocks, that is non-meaningful or wrong programs. Scratch is ideal for introductory computer science at all levels as it introduces all fundamental computational concepts such as control structures, loop, procedures by allowing at the same time the students to concentrate on computational thinking, not on syntax errors (Resnick et al, 2009). Scratch 2.0 has now its online development environment written in Adobe Flash. This makes the environment not suitable for all devices, especially portable devices not fully supporting Adobe Flash. Moreover the Scratch environment can only execute Scratch programs. It is possible to extend the environment to new languages by using the Scratch Extension Protocol (http://llk.github.io/scratch-extension-docs/), but this requires an excellent knowledge of the Javascript language. A further disadvantage of Scratch is that, even by being one of the most simple programming languages available for introductory computer programming courses, it is felt sometime as too rich of features. A less complex and less rich language could be better during the very first introductory lessons on computer programming so to avoid that students are distracted by too many unimportant elements.

On the other hand, the number of online environments specifically designed to allow casual users or students to check the syntax of their programs and/or to see the results of the execution of their programs inside their internet browser is incredibly high. Just looking for the keywords “ide console online” in a web search engine gives as a result an incredible amount of sites offering -very often for free- online syntax checkers or full consoles for all kind of well-known programming languages (Wu et al, 2011, pp. 45-52). Moreover, several website also offer the possibility of step-by-step execution, in order to make the student easily understand how a specific programming language works (Guo, 2013).

All online tools are either based on a specific language (http://cscircles.cemc.uwaterloo.ca/java_visualize/#, http://jstutor.herokuapp.com/) or on a large set of programming languages (http://codepad.org/, http://compileonline.com/, http://labs.codecademy.com/). The main problem when moving to a language more advanced than Scratch is that the student must cope with two problems: learning the objects and commands of the new programming language and, at the same time, trying not to make syntactic or semantic errors (Federici, 2011).

Thinking to blended environments in which the commands of more advanced languages, such as for example Python, are available in a Scratch-like environment is not a completely new proposal. The EPLE platform (Nioi, 2013) available at http://epleweb.appspot.com/ is a mashup that implements the basic commands of Python in a Scratch-like environment by using the Blockly visual programming editor (https://code.google.com/p/blockly/). The Blockly visual programming editor is extremely flexible. But creating a new language with Blockly requires a good knowledge of Javascript programming, something that not all computer science teachers know.

The new proposal presented in this paper builds upon the strengths of the tools described above, by proposing a tool that allows teachers to build by their own a block version of either a new, custom introductory programming language or of a standard programming language of their choice by using an advanced version of the Scratch environment, thus being able to build the new environment much more easily and quickly than the approaches outlined above and, very importantly, without incurring in many syntactic or semantic errors.

Methodology

The BloP tool is an evolution of the Snap programming environment. Snap, at least apparently, is just a port of the Scratch programming environment to Javascript. This is certainly an advantage with respect to Scratch as, even if Javascript is not as fast as Flash, the Snap environment can be run inside all major internet browsers without need for installing extensions or plugins.

But Snap has two other important advantages with respect to Scratch: Snap allows to i) define new blocks for all available block types and to ii) define multidimensional lists. Thanks to this two features, i) commands of the desidered programming language (for example the C programming language) can be added as new blocks of the Snap environment and ii) all important data structures can be easily implemented.

So, by using Snap, it is possible to define a completely new language in a Scratch-like, block-based style with all the important advantages already discussed. The drawback is that this new language and all its commands and elements will be mixed to the commands and elements of the Snap programming environment. This makes the final result really confusing to the users, by allowing them also to accidentally remove important elements or commands of the programming language.

Here is where BloP advanced features come into action. Indeed, BloP allows to i) selectively hide all elements of the Snap environment that are not relevant to the choosen programming language, ii) hide all elements of the new environment that shouldn't be visible to the final user, iii) add setup scripts that will automatically hide and will do all the necessary configuration work every time that the user loads in the BloP environment a program written in the new language or every time that they execute it, and, finally, iv) lock the Snap environment so that users cannot impare the environment by accidentally removing or modifying the commands and the elements of the new programming environment.

To give an example, in Fig. 1 (to the right) you can see the Snap implementation of the online environment for the C++ programming language. In the new clean and locked BloP environment (to the left) you can see appropriate names for the block palettes (rectangles 1), only C++ blocks (not Snap's ones) inside the palette (rectangles 2), only C++ programs (not Snap's one) in the program area (rectangles 3), absence of Snap elements not relevant to the C++ programming language (rectangles 4 to 12).

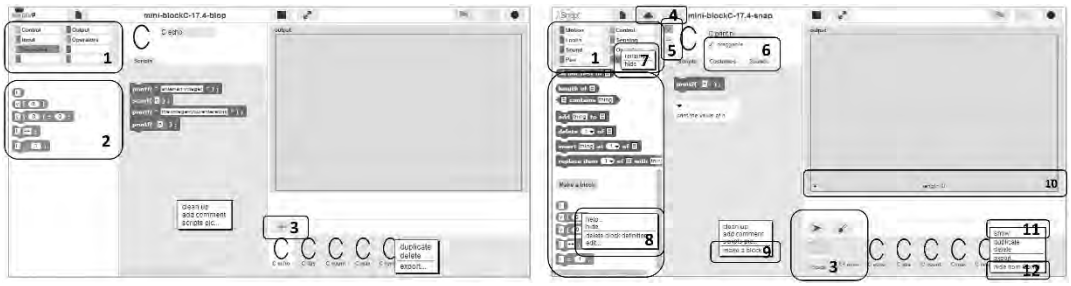

Figure 1 – Comparing the C++ environment in BloP (to the left) and Snap (to the right).

Results and discussion

BloP has been used to create block language versions of several standard programming languages, such as Logo or C/C++ (Federici, 2011) and also to design special-purpose languages tailored to specific learning needs, such as languages designed to program sorting algorithms in a natural language-like scripting (ASL, Animated Sort Language, Federici and Stern, 2010). These languages have been used in a comparative experiment run during 8 lab lessons of the introductory course of Computer Science for the degree in Environmental Engineering of the University of Cagliari. In this experiment the students have been divided in two groups, one using a classic IDE to learn both the C/C++ language and basic sorting algorithms and one using the BloP environment for both the block version of the C/C++

language and the ASL language. During the last lesson of the lab, the students were presented with the alternative environments. In a qualitative evaluation run at the end of the last lesson, both groups of students affirmed that they liked (or would have liked) more the BloP environments and that they thought those new environements could help them in learning more easily the C/C++ language and the sorting algorithms.

Conclusions

BloP is an open source project and it is available for download at the www.blocklanguages.org website together with several example programming languages (such as Logo or C/C++) developed for demonstration purposes. Moreover, a new module for the eXe-learning application for the creation of SCORM packages (http://exelearning.org/) has been designed in order to include inside SCORM packages the new online IDEs created in BloP, thus making pretty straightforward adding new IDEs to e-learning platform conformant to the SCORM standard.

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SES-C2:

LE ICT NELL'INNOVAZIONE DELLA DIDATTICA UNIVERSITARIA

Social media in higher education. How Italian academic scholars are using or not using Web 2.0 tools in their personal, teaching and professional practices

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Abstract

The paper reports the main results of a survey addressed to Italian academic scholars with the aim of researching how the latter use Social Media tools for personal, teaching and professional purposes. The survey, which was adapted and translated from a previous questionnaire, was administered to the entire Italian university scholar population and obtained a rate of response of 10.5%, corresponding to 6,139. The study has specifically investigated how university teachers use these tools in their teaching practices and eventual obstacles that may hinder their adoption. Results show that Social Media use is still rather limited and restricted and that teachers mostly prefer traditional forms of teaching, mainly face-to-face based, to collaborative and distributed practices. Overall the results emphasize ambivalent attitudes towards benefits and challenges of these tools in the context of higher education as already pointed out by the literature.

Keywords: Social media, higher education, personal use, teaching use, professional use

Introduction

Social Media tools belong to the so-called Web 2.0 and, in recent years, have been seen by many scholars as powerful drivers of change for teaching and learning practices, in terms of openness, interactivity and sociability (Siemens & Weller, 2011). Social media are usually described as "dynamic", "interactive", "democratic", "social" and "user-centred": indeed, while the first generation of Internet technology was characterised by access to and use of resources, the second generation features the production and immediate socialization of content according to the well-known formula of user-generated content (O'Reilly, 2005).

In particular, considering the academic context, several authors (see Brown & Adler, 2008) have underlined that the adoption of these devices generates or requires a radical change of the pedagogical paradigm with "revolutionary" consequences for academic institutions. However, it must be noted that much of the literature in the field focuses on the potential of Social Media for learning (Anderson, 2009; Siemens & Weller, 2011) or provides empirical evidence relating to the use of social media in higher education by the new generation of students (see Davis III, Deil-Amen, Rios-Aguila, & Sacramento Canche Gonzales, 2012). Theoretical analyses or empirical research on the digital practices of academics are much less common, with some very rare studies such as Allen and Seaman (2014) or Jaschik and Lederman (2013). As observed by Brown (2012: 50), "Contextually rooted discussions of the potential of Web 2.0 in teaching are rare. More common are generalized analyses of the benefits of Web 2.0 for the higher education sector".

Specific attention to how academics actually use social media in their teaching practices and for professional development and a greater understanding of the perceptions they have of these devices would allow us to overcome the generic analyses that often characterize the reflections on the role of ICT for teaching in higher education.

This paper aims to contribute to research on the digital practices of academics, focusing on Social Media and on the actual uses and perceptions that academics have about the potential of these tools. In the first part, the paper introduces the theoretical and methodological framework of the research, while in the second part it describes and discusses its main results. The paper ends with some considerations on future research in the field.

Theoretical framework

In the current debate on Web 2.0 and learning, the pedagogical potential of Social Media has been particularly emphasised by the exponents of connectivism (Siemens, 2005) and the Social Learning approach (Anderson, 2009). According to connectivism, knowledge and learning are distributed in interpersonal networks and learning consists of the capacity to traverse such networks, connecting to them and promoting them. In this perspective, Social Media tools are viewed as devices that can facilitate these processes, supporting participatory learning and knowledge construction (Collis & Moonen, 2008). At the same time, the new generation of students are represented as increasingly reluctant to limit themselves to passive content consumption and more and more inclined to the creation and sharing of digital resources (Tapscott & Williams, 2007). In this context, some authors (see Yu, Tian, Vogel, & Kwok, 2010) argue that the increased use of social media in the university context can help to reconnect academic institutions and new generation, while others (Downes, 2010) claim that trust in academic institutions is inevitably destined to collapse in the very near future.

While these views emphasize the potential of Social Media, other stances are more cautious, if not critical, recalling the importance of considering the needs and the constraints that are typical of the educational institutions. Selwyn (2011), for example, points out that we cannot assume that educational benefits might automatically derive from non educational practices, as if everything was education.

Other scholars have also cautioned against possible tensions, such as the challenge of reshaping the roles of teacher and student, the contrast between the closed boundaries of the traditional e-learning platforms and the open arena of Social Media where everyone can contribute and comment, the delicate issue of the relationship between individual and collaborative learning with implications for assessment and learning styles (Crook, 2008).

Moving from general views to the analysis of specific practices and representations that academics have of Social Media tools, further elements emerge. Some studies have shown that a correlation occurs between the availability to adopt student-centred pedagogies and the adoption of technologies for teaching (Ajjan and Hartshorne, 2008). Further research, on the other hand, points out that other factors are relevant. Veletsianos & Kimmons (2013), for example, have proved that the erosion of boundaries between personal and professional identity, the low levels of control in the management of relations and the lack of training to develop digital skills prevent academics from using ICTs for teaching. More generally, Brown (2012) argues that the interpretations centred on resistance to change do not take into account the specific contexts of use, the actual practices and the perceptions of academics. However, since academics play a crucial role of mediation in the higher education context, their perceptions of the potential of Social Media tools should be considered as a powerful resource to better understand how Social Media can be used according the needs of each different context.

Methodology

During the October–December 2013 period a survey about the use of social media was addressed to the entire Italian university scholar population, as they resulted in the official files of the Ministry of Education and Research. The aim was to look into how Italian university scholars use Social Media tools for personal, teaching and professional development purposes. They were asked to respond with reference to several tools: Twitter, Facebook, LinkedIn, Google Plus, Podcasts, Blogs and Wikis, YouTube and Vimeo, ResearchGate and Academia.edu, SlideShare.

The survey was adapted and translated from a questionnaire annually administered by Pearson and the Babson Survey Research Group in the USA, with the aim of providing a framework of the various uses related to the personal, teaching and professional areas of interest among the higher education sector. Among the various versions of the American tool, the 2012 edition was chosen (Moran, Seaman, & Tinti-Kane, 2012), with the subsequent aim of comparing the two samples.

A number of questions were modified in order to adapt them to the new cultural and geographical context, as well as new questions with the aim of providing more detailed information about specific issues were inserted. Moreover, a series of questions about specific organizational aspects related to the Italian context were added. Finally, some specific items about detailed use of Social Media tools,

in terms of personal, teaching and professional development use, that were absent in the original version were finalised (see the Appendix in Manca, 2014).

Out of 58,175 subjects involved, the rate of response was 10.5%, corresponding to 6,139. The sample has shown to have overlapping characteristics, with specific reference to a series of socio-demographic variables such as gender, role, scientific discipline, type of institution, geographical area.

Referring to a detailed description of the study elsewhere (Manca, 2014) and to specific emphasis on the teaching uses (Manca & Ranieri, 2014), in this paper only the main results related to a sub-sample of the tools investigated are reported, with particular reference to the main uses for personal, teaching and professional purposes. Specifically, data related to the use of Google Plus were omitted since the results we got seemed rather unrealistic. We quite easily inferred that our respondents missed the little plus sign after the word "Google" and answered the question as if it were asking about Google's search engine or other Google products such as Gmail and Google Apps.

Results and discussion

The data related to the frequency of *personal* use, that was self-evaluated on a five-point Likert scale from Never to At least once a day, are shown in the table below (Table 1). Whereas 89.3% of respondents declared they use at least one tool, this percentage decreases to 75.7% if you consider at least the monthly use.

	Daily	*Weekly*	*Monthly*	*Rarely*	*Do not use*
Twitter	3.4%	4.0%	2.9%	11.9%	77.8%
Facebook	20.2%	12.2%	5.8%	13.0%	48.8%
LinkedIn	2.0%	8.3%	9.8%	19.4%	60.6%
Podcasts	1.5%	3.2%	3.8%	7.5%	84.1%
Blogs and Wikis	5.6%	11.1%	8.6%	10.1%	64.6%
YouTube e Vimeo	8.4%	22.1%	16.4%	19.2%	34.0%
ResearchGate and Academia.edu	4.8%	14.7%	12.6%	14.1%	53.8%
SlideShare	0.6%	2.0%	2.8%	6.9%	87.7%

Table 1- Frequency of personal use

A far as the *teaching* use is concerned, 36.0% of respondents declare not to use any tool. This datum rises to 55.1% if you consider at least the monthly use. For a detailed report of data related to this issue, see Table 2.

	Daily	*Weekly*	*Monthly*	*Rarely*	*Do not use*
Twitter	0.5%	1.0%	1.0%	2.9%	94.5%
Facebook	2.7%	4.8%	3.6%	7.0%	82.0%
LinkedIn	0.5%	1.5%	1.9%	5.6%	90.5%
Podcasts	0.5%	1.2%	1.9%	5.2%	91.2%
Blogs and Wikis	3.0%	8.2%	7.7%	9.8%	71.3%
YouTube e Vimeo	1.9%	7.8%	11.4%	18.1%	60.7%
ResearchGate and Academia.edu	2.5%	6.0%	6.4%	10.8%	74.4%
SlideShare	1.0	3.0%	4.0%	7.5%	84.5%

Table 2 - Frequency of teaching use

Finally, as for *professional* use, 74.5% reported they use at least one tool, with a frequency ranging from Never to At least once a day. This percentage decreases to 58.7% if you consider at least the monthly use.

	Daily	*Weekly*	*Monthly*	*Rarely*	*Do not use*
Twitter	1.6%	2.3%	1.7%	4.3%	90.1%
Facebook	3.9%	6.1%	4.5%	8.2%	77.3%
LinkedIn	2.4%	8.8%	10.3%	16.5%	62.1%
Podcasts	0.5%	1.2%	1.6%	4.7%	92.0%
Blogs and Wikis	3.6%	7.9%	8.1%	9.1%	71.3%
YouTube e Vimeo	1.9%	6.7%	8.5%	14.6%	68.3%
ResearchGate and Academia.edu	5.2%	16.3%	14.3%	14.7%	49.6%
SlideShare	0.8%	2.3%	4.0%	7.2%	85.7%

Table 3 - Frequency of professional use

Another set of questions explored the perceived usefulness of these sites. As for the perception of value for personal use, 58.9% of respondents declare that they are useful, against 38.6% of those who declare they are useful for teaching purposes; finally, 53.9% declare a positive perception of value for professional use.

The tools assessed as more useful for personal use are Facebook (64.5%) and YouTube-Vimeo (43.6%), those better assessed for teaching use are YouTube-Vimeo (53.5%) and Blogs-Wikis (37.8%). Finally, the tools that received a more positive assessment for professional use are ResearchGate and Academia.edu (58.8%) and LinkedIn (56.8%).

The survey also specifically explored the use of these tools for teaching and learning purposes, with particular reference to the ways through which they are used and the obstacles that may hinder their full adoption.

As a matter of fact, the percentage of respondents that are actual users (32.5%) is much lower than those who declare they are useful or interesting sites. Typical uses are: the fruition of content material, mostly on YouTube-Vimeo (69.6%), SlideShare (64.4%) and ResearchGate-Academia.edu (58.8%); commenting content material, mainly on Facebook (24.2%) and Twitter (23.1%); and new content material production, mostly Blogs-Wikis (21.4%). Respondents generally emphasize that Social Media tools provide several sources of information and of various nature (experts, documents, sites, etc.) useful to prepare and deliver teaching lessons, as well as their dialogical and communicative value if they support the role of discussion beyond the classroom.

The main concerns have been identified as: concerns about the integrity of online student submissions (83.2%), the lack of specific features for teaching (74.8%) and the scarcity of best practices (73.3%).

Results globally achieved show a general low level of adoption by this kind of population that seems to confirm resistance emphasized also by previous studies in relation to teaching practices (Brown, 2012) or by previous administrations of the survey in the US context (Moran, Seaman, & Tinti-Kane, 2012). In more detail, through open responses we collected several negative claims about Social Media, that emphasize the unequalled efficacy of traditional ways of teaching and learning, such as face-to-face lessons, paper-based sources of knowledge (e.g. books), and in the presence of communication between teacher and students; on the other hand, Social Media tools are mainly perceived as a waste of time, as a great concern about privacy and as a risk to weaken the traditional roles of teacher and student. Many of them declare a strong preference towards the Learning Management Systems in use in their universities or their official websites as sources of reliable information. The latter are perceived as more efficient and reliable both to manage communication with the students and as sources of reliable content, as well as offering a better level of security and

protection. On the contrary, Social Media, due to their fragmented nature, may encourage a lack of coherence and integration.

Overall our results show two different trends. The first relies on a positive attitude that emphasizes the importance that these tools may have especially for personal and professional development purposes, whereas more resistances are allocated to the teaching side. The second expresses deep scepticism and cultural resistance if not real hostility: scattering, redundancy, distraction, lack of time, lack of institutional support, restricted limit to these sites within the faculty's digital network, lack of specific features for teaching and learning, digital divide between students and teachers reveal themselves to be issues that discourage greater interest towards Social Media as learning tools in higher education.

Limitations of the study

Although the entire academic population of the Italian universities was addressed by the survey, the study presents a number of important limitations, among which the low level of response rate, i.e. 10.5%, is surely the most critical. Indeed, though online surveys get on average a response rate of 11% lower than traditional instruments, such as paper questionnaires or telephone surveys (Fan & Yan, 2010), in our case there were a number of difficulties related to retrieving email addresses or the actual receipt of emails sent. Moreover, with the increasing use of email spam filtering techniques, invitations sent by email might have been blocked by spam filters. It should be also added that not all academics check their institutional email addresses, while preferring their personal ones.

Further reasons for this low response rate may be linked to a lack of familiarity with the topic, or to negative preconceptions of Social Media and learning, or also to the time required to fill in the questionnaire (20 minutes).

Finally, since the survey required participants with a teaching background, this requirement might have brought the researchers who do not hold a teaching position not to fill in the survey.

We recognize that all these limitations might have led us to identify a sample of responses with a strong bias in terms of (either positive or negative) interest and importance of the topic.

Conclusions

This study aimed at investigating the personal, educational and professional practices of Italian academics relating to the use of Social Media tools. Despite its limitations, it emerges that at the moment in Italy Social Media are playing a very marginal role in academic life. A combination of factors, including pedagogical views, pragmatic reasons and values, seem to bring teachers to prefer face-to-face teaching methods or traditional e-learning platforms rather than Social Media tools. To this must be added a still uncertain perception about the actual students' expectations, sometimes accompanied by a representation of Social Media deterministically oriented in a negative sense.

Together all these elements raise many questions. In particular, given the high level of distrust in the role of Social Media in education, one might ask whether their use in the higher education sector, and more generally for learning, makes sense or not. However, whether we like them or not, Social Media today increasingly mediate information access, sharing, and production of information. All this does necessarily have relevance for higher education. So rather than thinking in deterministic terms, we believe that the real challenge is to better understand what the most common practices and perceptions and the biggest obstacles are in order to be able to provide guidance and support to the teacher in the selection of most appropriate technological and instructional solutions.

With this study, we have attempted to advance in this direction and contribute to the studies carried out in the wider field of digital scholarship (Weller, 2011). This expression refers to the various practices that feature the professional life of academics (from research to teaching) and that are based on the use of digital technologies, particularly Social Media (Greenhow & Gleason, 2014). The literature in this area is still in its infancy, especially with regard to our country, but this field certainly deserves to be further investigated to develop better-informed higher education policies and practices.

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Using an e-portfolio of competences in higher education Technological issues and outcomes.

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Abstract

This paper presents the final results of a study that involved the use of an e-portfolio system (Mahara) as part of a university course, with the overarching aim to enhance the students' recognition of their own learning, even for those students belonging to the traditional post-secondary age group. We focus here on technological issues, namely relating to e-portfolio structure and communication tools, bringing a data analysis coming from Mahara internal database. Moreover the paper presents some considerations about the use of virtual machines in an educational context.

Keywords: e-portfolio, informal learning, competence, virtualization, higher education

Introduction[*]

This paper presents the final results of a study that involved the use of an e-portfolio as part of a university course, with the overarching aim to enhance the students' recognition of their own learning, even for those students belonging to the traditional post-secondary age group.

The premises of this research are:

1) The majority presence in the Italian student population, particularly in humanistic courses, of people with a more or less significant working experience (Almalaurea, 2014);
2) The growing importance, also in Italy, of the issue of recognition, validation and certification of competences (L. 92/2012, D.Lgs 13/2013);
3) The orientation of European universities towards objectives in terms of competences (Zaggia, 2008).

The specific aims of our research are therefore:

1) To show how an intervention aimed at promoting reflexivity, from a professional point of view, on learning however occurred was possible even in students belonging to the traditional post-secondary age group;
2) To evaluate the use of a portfolio of competences following the French model (Aubret, 2010) taking into account on the one hand the numerous, albeit occasional, professional experiences of students, and, on the other hand, the new orientation of European universities towards competences;
3) To evaluate the use of an e-portfolio system to achieve this end; in this paper we will especially focus on this latter issue.

We therefore set an intervention aimed at supporting individual students in the accompanied construction of a reflexive portfolio of competences, with a specific focus on the construction process rather than on the portfolio itself. Emphasis was therefore placed on the following four elements:

1) The partition into formal, non formal or informal, depending on the context in which the experiences considered to be relevant for learning purposes took place;
2) The reflection on experiences (especially the ones gained, often unawares, in informal context) in order to make explicit what has been acquired;

[*] This paper is the result of a common work. However, F.C. Ugolini wrote the "Introduction", and paragraphs "The portfolio of competences with Mahara", "Communication in Mahara" and "Conclusion"; R. Orazi wrote paragraphs "Data Analysis" and "Using a virtual machine in an educational context".

3) The demonstration of learning through proofs that, in an e-portfolio, takes the form of multimedia documents (text, images, movies, audio files …);
4) The description of a problematic situation testifying the mobilization of their own resources (Le Boterf 1994, 2008) in a new situation, within a logic of competence.

We implemented this intervention during three years (aa. aa. 2011-2012, 2012-2013, 2013-2014) within the Degree Course in Scienze per l'Investigazione e la Sicurezza, University of Perugia, in the "Valutazione delle Competenze per la Sicurezza" course; the construction of the portfolio was part of the final exam. The four points previously exposed were used as indicators for the attribution of the marks, but were used as a reference, during the period of teaching, to accompany students in the construction process (inspired by the concept of *demarche* portfolio of competences (Aubret, 2010)), from a formative evaluation point of view. Coherently with the logic of competence we based our intervention on, the construction of the portfolio, taking into account the limitations due to the university context, assumed, within the teaching, the role of an authentic task; the four points, therefore, constitute a kind of rubric (Castoldi, 2011).

In a.a. 2011-2012, we realized the portfolio using the most common office automation tools (mainly Microsoft Powerpoint) while in aa.aa. 2012-2013 and 2013-2014 we used a specific e-portfolio software: Mahara (mahara.org).

We presented in former papers the theoretical issues (Ugolini, 2013a, 2014a) and a qualitative analysis of the portfolios realized in a.a. 2011-2012 (Ugolini, 2013c) while here we will focus specifically on issues related to technological realization with the help of Mahara, that we already introduced in (Ugolini, 2014b).

The portfolio of competences with Mahara

Usually, Mahara is designed to facilitate the acquisition of multimedia works in a repository so that they can be presented later in pages that, not surprisingly, in early versions of the software – we used 1.6.3 – were called 'views'. An approach of this kind is particularly functional with student portfolios (Ajello, Belardi, 2007) whose construction accompanies the learner in a learning process of substantial duration, providing moments devoted to a further reflection phase, with specific objectives, after which the portfolio is presented.

In our case, the construction of the portfolio takes place in a well-defined period and is centered around reflection on previous experiences rather than the accompaniment of those in progress, even if, ideally, it may accompany the learner beyond the institutional course (at the time of this writing, no account has been disabled and each student is therefore able to update it and present it in real life situations; Mahara provides as well an export function in HTML format). The construction follows therefore from the beginning a hierarchical organization, according to which the portfolio is divided into three collections, depending on whether the context of learning is formal, non-formal or informal (Ajello, Belardi, 2007). In each collection, the student then returns many pages as the experiences supposed to have generated learning.

For the purpose of the portfolio construction, we distinguish formal contexts from non-formal ones by the presence of an institutionally recognized certification, while the non-formal from the informal ones by the presence, in the former, of a teacher or facilitator who consciously guides the learning process. In the concrete cases we saw, this division may appear arbitrary in some cases, but it is functional to address the next steps. For further details, see (Galliani, 2012; Ugolini, 2013b).

On each page, the student gives a textual description in first person of the context, the experience and what he has learned, activating reflective processes in doing so. To this end he can use directly the page description, or insert one (or more) textboxes on the page body. On the same page, he can place one or more media elements constituting a proof of learning. Each item must be accompanied by an appropriate caption that explicitates the competence the document proves.

This is the point at which we found the greatest difficulty in students, who often inserted pictures that were purely illustrative, typically without caption, or proving the experience instead of the competence. On the other hand, the maturation of what, borrowing from Agnès Veilhan (2004), we

call “logic of demonstration” was one of the main objectives of the course and of the process of portfolio construction.

Actually, in accordance with the principles of decoupling certification from the context in which it was acquired (Feutrie, 2004), especially when it corresponds to a training course, many recent definitions of competence at the institutional level (EQF, Dlgs 13/2013) emphasize that it must be “proven” by the person who owns it (Ugolini, 2013d).

Finally, students were asked to describe a problematic situation in which they mobilized a combination of resources, preferably coming from different learning contexts. We have not specified an unique location to this description: if it was linked to one of the experiences narrated, it could be placed within the corresponding page in a specific textbox, while most often it was inserted in a specific page, inserted conventionally in the collection concerning informal learning (according to Galliani (2012), informal learning acts as a frame for all others).

The model described so far can affect the whole range of skills acquired over a lifetime. In the case of the experience we have conducted, we only ask for at least one skill for each context.

Communication in Mahara

According to Pier Giuseppe Rossi (2006) there is a deep connection between the network as an “epistemological concept (network of competences and network between competences, artifacts and processes, the network between competences and contexts)” (Ivi, p. 20) and the technological hypertext network. This is the main reason why we needed to overcome both the paper model and the strongly sequential office automation based one, for the kind of intervention we had in mind.

An e-portfolio, however, is a multi-user system and also allows communication between its different actors. In our case, however, it was not possible, as it would have been desirable from a didactic point of view according to a socio-constructivist paradigm, to institutionally design moments of group work; the construction of the portfolio was actually compulsory to pass the exam, and, as it affects the personal experiences of the students, poses therefore serious problems in terms of privacy. Mahara has, however, a rights management system fairly easy to use; the interactions between students were therefore encouraged on a voluntary basis, thus intending to promote, within the framework of a formal context, a more informal type of learning, taking advantage of the similarity between the environment prepared by Mahara and the most common social networks. We actually found, from a survey we made every year among attending students during the first lesson, that over 80 % make an almost daily use of Facebook (namely 90,7 % in a.a. 2012-2013).

The only interactions prescribed at institutional level were, therefore, those occurring with the teacher, that was no more than a particular user, whose profile page acted as a “notice board” for official information and communications. We also asked the students to use the internal messaging system to report to the teacher the “deliveries” of their portfolio (due to the high number of students, we set precise deadlines for passing the final exam and for receiving feedbacks during the construction process). To this end, the students had to assign the reading rights to the teacher user, with the authorization to place a feedback.

This feedback was inserted, using the appropriate feature of Mahara, into the very page in which the teacher found the point that needed to be finalized. The communication between the teacher (who acted then like a facilitator) and the learner was one of the elements in which the advantage of using a system such as Mahara was more appreciable. Previously, portfolios, contained in files with a size often not negligible, were sent via e-mail, which entailed many reliability problems; feedbacks were provided through the same means, and were necessarily synthetic concerning the portfolio as a whole rather than specific parts of it.

We then present some data coming from Mahara database to show the results of the research.

Data analysis

In this data analysis we will refer to the two aa.aa. 2012-2013 and 2013-2014, when we use Mahara e-portfolio. The total number of students in the account system exceeds 500 units, but it must be said that an account was created automatically for all those who were attending at the beginning of the cycle of lessons, and it was not always used immediately, also because of the fact that we permitted the delivery of the portfolio using office automation tools (even though it was discouraged).

For greater uniformity in data, we will consider here only students who have actually built their portfolio with Mahara ("lastlogin" field not null, quota used greater than 0) and who sat for the final examination in the first session after the cycle of lessons (three subsessions – "appelli") as we encourage a regular completion of the course by a written task, placed with an appropriate timing so that the study of the theory accompanied the process of construction of the portfolio.

Given these conditions, we consider 291 portfolios, namely 146 for the a.a. 2012-2013 and 145 for the 2013-2014.

Here we present some quantitative data coming from the Mahara database, in order to give an overall idea of the consistency of these portfolios:

1) More than 4 users out of 5 have 3 collections, as it had been indicated; some others have done 4 or 5 collections including the problem situation in a separate one; however, not surprisingly, the average number of collections per user is 3.09.
2) Users created 1877 pages, of which 1733 contained in collections (sometimes the problematic situation was described in a separate page and therefore it was not included in any collection);
3) Users created 681 pages in formal learning collection (2.4 pages per user), 472 pages in non formal learning colleciton (1.72 pages per user), 535 pages in informal learning collection (1.91 per user). We can explain the prevalence of the former by the fact that they required less work in terms of reflection and were more easily associated to the experiences in a Curriculum Vitae (usually secondary school diploma or university exam registration, but also first aid certificates, sporting certifications…), while the non-formal skills are generally fewer in number than the informal ones because it may not occur (in which case it was asked to propose two informal learning experiences rather than a non-formal learning one and an informal learning one); the number of informal learning pages may also have been inflated by the problem situation, sometimes included in this collection.
4) The richness of the pages varies widely from user to user. If we look at the overall data, we find that the considered students made 3513 blocks, the vast majority of "image" type (2461, 1.31 per page, 8.46 per user); the quantity of text is more difficult to estimate as we can variously see it in the textbox type blocks (949, one every two pages), in the "page description" of the pages themselves (1195 those that exceed 100 characters) or in the "image description", for what concerns the picture captions (2149 of 2461 pictures with captions, some however being not relevant, as an image description can be created and not shown); some, albeit a minority, have also benefited from other forms of media such as video (4), photo gallery (24) or file (62).

The other fundamental fact that, we believe, should be addressed here is the one regarding communications, mainly those with the teacher. We recall that the teacher placed a feedback in student pages, to facilitate the achievement of the objectives, in specific deadlines. The total number of feedback was 563 for 270 users (2.09 on average).

We found information about feedbacks particularly interesting because the presence of only one feedback is often a sign of an achievement of the objectives without help from the teacher (while, on the contrary, it is not always true that a large number of feedbacks corresponds to more deliveries, as one feedback can be structured into multiple messages in different parts of the portfolio). The percentage of students who received only one feedback is 40% but evolves significantly from a.a. 2012/2013 (25.2%) to a.a. 2013/2014 (55.7%). As we did not find an equally significant loss of quality in the portfolios, we believe this finding particularly relevant. During the a.a. 2013/2014, in fact, the construction of the portfolio has been more integrated with the lessons face to face; the construction of the portfolio was presented as a problem situation from the beginning of the course, in a logic of competence; moreover, the written exam, placed very close to the end of the cycle of lessons, had, as a

precondition for its participation, the construction of a large part of the portfolio; this can have promoted communication with the teacher during lessons and work in groups, beyond the ICT tools.

A final consideration concerning the communication between students; as we have said, privacy issues prevented the institutionalization of group work within the system and the period of use was too short to foster informal communication in significant amounts. However, we find some encouraging signs towards a more integrated use within entire degree programs: for example, we find 220 "friends" (involving 189 users); we also have 102 messages on the internal messaging, mainly of informal nature, or about the formalities for examination. Taking into account that more focussed exchanges were not encouraged, we could not expect more substantial numbers, but the data still allow further developments in this regard.

Using a virtual machine in an educational context

From a technological point of view, another interesting feature of our intervention, was the use in an educational context of a virtualization system (Smith, Nair, 2005; Craig, 2006; Hammersley, 2008; Parrino, 2012). Virtualization systems are able to improve the efficiency and availability of hardware and software resources within the different organizations. With these systems we can go beyond the "one server/one application" restriction. Virtualization divides the resources of a system by simulating the existence of many independent processes within a physical hardware. Through the virtual machine users work as if they were provided a dedicated system able to meet the diverse computing needs.

The feature that characterizes a virtualization software is the possibility to manage physical resources of a real system, so as to allow several virtual systems to run as real systems, from users perspective. Users work with a virtual machine, a sort of imaginary computer, the components of which are simulated by the hardware virtualization software; different virtual machines can be configured within the same virtualization environment with different operating systems (Windows, Unix, Mac OS) and adapting the virtual configurations to different needs. In this way the user interfaces a virtual system without perceiving the difference with a real system.

From the point of view of finance and administration, the use of virtual servers offers many advantages, including a reduction of capital costs regarding hardware components, a reduction of power and cooling capability requirements and a more flexible allocation of process load. In addition, a system configured in this way helps to maintain continuity of service due to specific features of data recovery in case of malfunction.

However, being able to deploy not simple applications or individual contents but complete systems as a whole, opens up many perspectives even from a strictly educational point of view. In fact, though many people enhance the issue of content reusability between heterogeneous systems, it is also true that the most common standards often limit themselves to encode information about the educational processes leaving out the contents, which are distributed separately, and above all, the activities, such as forum discussions or chatrooms, or as cooperative and collaborative activities, which are central in quality deliveries. The distribution of a course on a virtual machine allows, in this context, its complete preparation in content and educational activities, as it is recommended by the main educational models.

Conclusions

The use of Mahara facilitated the management of the portfolio construction process. In addition to expanding the range of multimedia possibilities in the selection of products, it greatly facilitated communication with the teacher making it more accurate, even with a very large number of students per teacher. The system provides communication tools that students are willing to use, but which, in strong contextual privacy conditions, could not be promoted institutionally; in less short paths, perhaps related to the entire degree program, may be valued better, on a spontaneous basis.

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An overview on ICT for the accessibility of scientific texts by visually impaired students

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Abstract

We provide a brief overview on the most common systems used to deal with university teaching materials (UTM) with mathematical contents, highlighting their problems in terms of accessibility. We shall describe some instruments and methods that universities could offer to visually impaired students for reading UTM and we shall point out software enabling visually impaired students and their teachers to write texts with mathematical contents.

Keywords: mathematics accessibility, web accessibility, visually impaired

Introduction

People with sensorial disabilities willing to undertake University courses have nowadays new instruments at their disposal.

Visually impaired people strongly benefit from speech synthesis software such as NVDA or JAWS (Windows), ORCA (Linux), and VoiceOver (Apple). Blind people also use braille displays, whereas partially sighted people may use any combination of screen magnifiers and color customization (their requirements may vary, due to high diversity in partial eyesight).

Assistive technologies perform satisfactorily with regard to texts, but they still have a long way to go as far as formulae and graphs are concerned. Indeed, these are usually represented in two dimensions, while language follows a one-dimensional construction.

At the moment, the content of a graph can be either captioned or embossed. Captions can only provide a limited description; embossed paper may convey a better feeling of the whole picture, although it requires a dedicated printer (braille embosser), larger and thicker paper sheets, and possibly several prints for each graph. In particular, it is possible to print both braille and ink on the same page, thus allowing for a substantial interaction between sighted and blind people.

Formulae can be written in 8-dots braille, although there is no international standard: several countries have developed their own braille code for mathematics and a serious work in the direction of a unified braille system is far from being accomplished. Speech synthesis allows a computer to read the transcription of any formula, although the resulting text may become impractically long (e.g. ½ might be read as "begin fraction numerator one denominator two end fraction"). Such transcriptions can be readily obtained when the software itself is made aware of the mathematical structure, that is, when formulae are written by means of a *markup* language: a computer language interspersed with special annotations marking the beginning and the end of any mathematical structure (subscripts, superscripts, fractions, and so on). We refer to the work of Archambault et al. (2007) for a good survey on this topic.

Some standard instruments

Availability of a large amount of textual information, such as slides, books, lecture notes, scientific articles, on the web or in university digital libraries helps students in their educational path from elementary school to university. In this section we give an overview of the most common instruments that students and professors use to create scientific documents.

Microsoft Word is the most widespread text editor. It has a graphical interface that allows to write text and to insert formulae and images. However, graphs and formulae inserted in Word documents are generally not accessible.

HTML and XHTML are markup languages which are used for creating web pages and are helpful to make available UTM to a wide audience. As mentioned above, markup languages are suitable to be managed by screen readers and Braille displays. However, graphs and formulae are generally inserted as images, which are clearly not accessible.

LaTeX is a markup language widely used by the scientific community for the production of high quality documents with mathematical contents. Screen readers and braille displays can directly access raw LaTeX documents containing formulae. However, even once visually impaired students have learned this language, the output provided by screen readers and braille displays is not completely handy; for instance, the fraction ½ is represented by the LaTeX command "\frac{1}{2}".

We also remark that most UTM is exported and supplied in *.pdf*.

On accessible reading

We describe which kinds of UTM are accessible to visually impaired students, as well as some software and methods that can be used in this field.

In the case of Word documents, there is no way to make graphs accessible, while MathPlayer ensures accessibility of formulae inserted by using MathType. See Bernareggi and Archambault (2007) for a comprehensive about MathPlayer.

HTML and XHTML documents are often obtained starting from documents written with word processors. In these documents, images can have a hidden caption (the "alt" attribute) that is accessible. Moreover, formulae can be written in MathML embedded in these documents. In this case, formulae are accessible on Apple machines using VoiceOver on Safari browser or in the Windows framework using JAWS/NVDA and MathPlayer combined with Internet Explorer. Unfortunately, MathPlayer is only compatible with Internet Explorer 9 (or older versions) which is no longer supported by recent operative systems.

Speech and braille assistive technologies directly read LaTeX documents. In this case, visually impaired students need to learn LaTeX in order to understand the commands. However, there are several software which facilitate LaTeX comprehension and usability; one of them is BlindMath. The project LaTeX-access provides a translation of LaTeX commands into statements easier to understand; as a result, the usability by visually impaired people is improved. Moreover, text editors (e.g. Kile) often offer color customization of LaTeX commands, thus helping partially sighted people as well. Finally, we remark that several programs translate LaTeX documents into HTML and XHTML documents, where formulae are inserted with MathML and are therefore accessible.

In Uebelbacher et al. (2014) standard guidelines for accessibility of *.pdf* documents are presented, as well as the open source software PDF Accessibility Checker 2 (PAC2), which can evaluate the accessibility of any *.pdf* document. In many cases *.pdf* files are read by screen readers; however it is frequent (especially in case of scanned documents) that such files are not accessible at all. In these cases an Optical Character Recognition (OCR) software is required in order to obtain an editable file.

Recently, some systems specifically designed for blind people have been developed. The Infty project, developed by Suzuki et al. (2004), works on a LaTeX-based language and has its own speech synthesis software (ChattyInfty) that reads formulae written in Infty documents. Moreover, Infty Reader is an OCR for the automatic recognition of formulae, although the automatic recognition is not optimal and often requires corrections, especially if the starting document is not in English. Infty Reader is the only OCR that performs an automatic recognition of complex formulae (e.g. integrals and roots). Indeed, existing OCRs (like Abbyy Fine Reader and Tesseract) have optimal performances in the recognition of normal text but, up to now, they can only recognize very simple formulae. Furthermore, apps like MathPad (for Apple) are able to recognize single handwritten formulae, but they do not perform automatic recognition for a complete document.

A system widely used by blind people is the LAMBDA system (Linear Access to Mathematics for Braille Device and Audio-synthesis). LAMBDA is composed of a markup language, a dedicated editor and a MathML converter. Mathematical language in LAMBDA is designed so that every symbol can be directly translated into words. This translation is implemented on the fly in the editor, which can therefore be used also by visually impaired people. The converter imports and exports XHTML documents containing MathML code. For further details on LAMBDA we refer to Bernareggi (2010).

On accessible writing

In this section, we review the above instruments, pointing out how they can be used by visually impaired people for writing texts with mathematical contents.

In general, Word is not a good solution for writing scientific texts, although the LeanMath editor developed by Gardner (2014) allows visually impaired people to access to the graphical interface of MathType through speech synthesis and hotkeys.

HTML and XHTML together with MathML are very hard to learn and are not handy for neither sighted nor visually impaired people. XHTML should be preferred to HTML, since its documents are more accessible and can easily be imported by specific systems like LAMBDA.

LaTeX is well-known by professors of scientific courses; students approaching scientific degrees are highly suggested to learn it. Editors for LaTeX documents are usually accessible; moreover software like BlindMath and LaTeX-access make the use of TeX easier. Furthermore, any LaTeX document can be imported by Infty or can be converted into an XHTML document which, in turn, can be imported by LAMBDA.

Infty Editor interacts well with LaTeX documents, but its graphical interface is not accessible. Thus, it could be recommended to sighted people in order to produce accessible documents, but this is not a feasible solution for visually impaired students.

Finally, in LAMBDA, the mathematical editor is especially designed for blind people and it is accessible using hotkeys, braille displays, and speech synthesis. Furthermore, this editor offers support for partially sighted people by using a colour code. Although LAMBDA is a good solution for visually impaired people willing to write texts with formulae, it is not completely suitable at university level, since the list of mathematical symbols is neither complete nor adaptable.

Future work

We intend to focus on an in-depth analysis and a systematization of the aforementioned topics. Moreover, we will concentrate on the accessibility of UTM via mobile devices and on the use of 3D printers. We shall also focus on developing a new OCR for formulae, as well as on realising the Italian version of the Infty project.

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C@vir
A prototype of CSCL pedagogical planner

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Abstract

The idea to apply collaborative learning strategies widely experimented in face-to-face educational setting, lead researchers to think a possible transposition mutatis mutandis also in online social environment. Looking at some of the existing pedagogical planners none of them are specifically intended to support the design of online collaborative learning activities. In this paper we present the software prototype "Cooperative Virtual Agora" (C@vir), a tools to guide teachers through the construction of online cooperating learning sessions that make appropriate, and effective, use of social technology.

Keywords: pedagogical planners, CSCL, social media, higher education.

Introduction[1]

The development and deployment of social media that we have seen in the last decade is one of the phenomena that most significantly influence how people construct knowledge and culture.
Taking in account the Higher Education sector (HE), recent studies reveal, on one hand, an increase of number of Universities which introduce in their communication strategies social media (e.g. blogs, wikis, social network) in order to communicate and manage relations with students and/or with other strategic targets more effectively (Kaplan et al., 2010). On the other hand, further researches show that the introduction of social media in the formal learning is an attractive and motivational factor for students and it increases their participation in learning process. In this way, the adoption of social media in formal learning contexts (seems to) promotes, in the target involved, the generation of knowledge and encourages active participations (Farwell & Waters, 2010).
However as Li at al. (Li, El Helou, Gillet, 2011) underline "while Web 2.0 participatory technologies have become an essential part of young learners' daily lives, very few learners are taking full advantage of these technologies to support their learning processes. [In other words] the studies suggest that the potential benefits of using social media to create learner-centered education systems need to be further exploited and well understood by learners" (Li, El Helou, Gillet, 2011).
Other commentators (Selwyn 2012, p. 5) put warn "against attempts to motivate and engage students through the simple introduction of "trendy" social media technologies in the educative processes and practices - what David Buckingham labels as attempts to make more exciting the curriculum with a surface patina of digital culture child-oriented.
With the gradual development of collaborative web, the so-called web 2.0, the problem that arises in HE is not only the question about the usefulness of ICT; but to take note that the ways of the construction and distribution of knowledge are structurally changed both in the school and, even more, in the professional environment. Thus, the continuous development of the social software technologies significantly influence the processes of creating, sharing and manage knowledge. Some academics (Fini, Cigognini 2009, p.20) connect this change to "the transformation of technological factor of 2.0 into an idea [...] of collective intelligence [...] oriented in a collaborative way [...].

[1] This contribution, fully shared by two authors, was drawn up as follows: paragraphs "Introduction" and "Scenario" by Luigi Guerra; paragraphs "CSCL and pedagogical planner", "C@vir. A software to support online cooperative learning" and "Conclusion" by Luca Ferrari.

Scenario

The origin of what is now generally accepted as the read/write or shared content nature of Web 2.0 appeared in 1990 in Tim Berners-Lee's prototype web software. However, the content sharing aspects of the web were lost in the original rollout, and did not reappear until Ward Cunningham wrote the first wiki in 1994-1995 (Franklin, 2007). At a later stage, in 2004, Tim O'Reilly coined the term "Web 2.0" to mean a set of all those online applications that allow a high level of interaction between the web and users.
This "digital revolution" involved the educational sector, firstly through the diffusion of an eLearning based on the production and delivery of "Learning Objects" (LOs), secondly, with the gradual introduction of social software, "functional tools" to amplify online teaching activities, in a collaborative way. Gradually, the focus of eLearning moved from learning object development to learning activities design; activities held by users in online environments with social software (Schafferd et al., p. 2010).

CSCL and pedagogical planner

The Computer Supported Cooperative Learning (henceforth CSCL) is a pedagogical approach in which learning take place through social interaction mediated by a computer or internet. Learning is characterizes by the sharing and construction of knowledge among participants who use technology as a primary means of communication or as a common resource (Sthal *et al.*, 2006). On one side the CSCL focuses on how collaborative learning supported by technology sustaining peer interaction and workgroups. On the other how collaboration and technology could facilitate the sharing and distribution of expertise and knowledge between community members (Lipponen, 2002). Vallèe (1992) argues that the challenge for system designers consists in putting together specific combinations in integrated systems that provide appropriate support to the social, educational and group activities involved in CSCL.
Take in account the teaching practices in HE a hypothetical teacher could run into two different scenarios: "A" and "B".
In the scenario "A", the teacher employs a specific software to manage the online cooperative learning, an *ad hoc* management software to support CSCL. In this case, for example, he/she prepares introductive learning materials and monitors student activities, as a main task. Differently, in the scenario "B", the teacher has a range of ICT tools that – potentially - support online cooperative learning activities (e.g. synchronous or asynchronous tools: forum, chat, wikis, blogs, videoconferencing tools, etc...). In this latter case, teacher not only organize, create and manage the cooperative activities, but also needs to identify (in relation to learning objectives) the social mediation tools (social software) and the ways in which the students can interact with each other.
Conole (2013) makes a clear distinction between the "tools for the visualizing design" and those that she defines ad "pedagogical planner". While the former kind of tools aim to support the visualisation and sharing of learning designs, the latter is mostly aimed at supporting practitioners in making informed learning design decisions (Pozzi & Persico, 2003). Masterman defines pedagogical planners as being purpose-built to guide teachers through the construction of plans for learning sessions that make appropriate, and effective, use of technology (Masterman, 2008a, p. 2010). Again with Pozzi & Persico (2013) the category of pedagogical planners in the CSCL context seems rather limited. Looking at some of the existing pedagogical planners none of them are specifically intended to support the design of online collaborative learning activities. [This] model and tool should be able to support the design, independently of the approach used, that is to say that the tool should be usable to design a highly structured activity (based, e.g. on a micro-script), as well as in case of a moderately structured activity (based on a technique, such as Discussion). The challenge is to define a model capable of encompassing the different visions and approaches, to build a "common backbone" for CSCL design.
In relation to the diffusion of CSCL pedagogical planner, other authors emphasized the need of teachers to know the principles of learning and how students learn. This is especially true for online [cooperative] learning. The development of effective learning designs should be based on proven and

sound learning theories but unfortunately, some lecturers have not obtained that knowledge as part of their preparation to teach in the higher education sector (Ally, 2004).

C@vir. A software to support online cooperative learning

The idea to apply some collaborative learning strategies widely experimented in face-to-face educational setting, lead researchers to think a possible transposition *mutatis mutandis* also in web environment. These collaborative learning strategies allow to manage the complexity relationship among members of heterogeneous and numerous on line communities (Pozzi et al., 2006).
The software prototype called "Cooperative Virtual Agora" (C@vir) is placed in the framework of computer supported collaborative learning (CSCL). This approach is based on the idea that peer to peer discussion can promote the development of critical thinking and as well as the understanding of concepts. The learning experience translates into a negotiation process that it is the way in which knowledge is constructed.

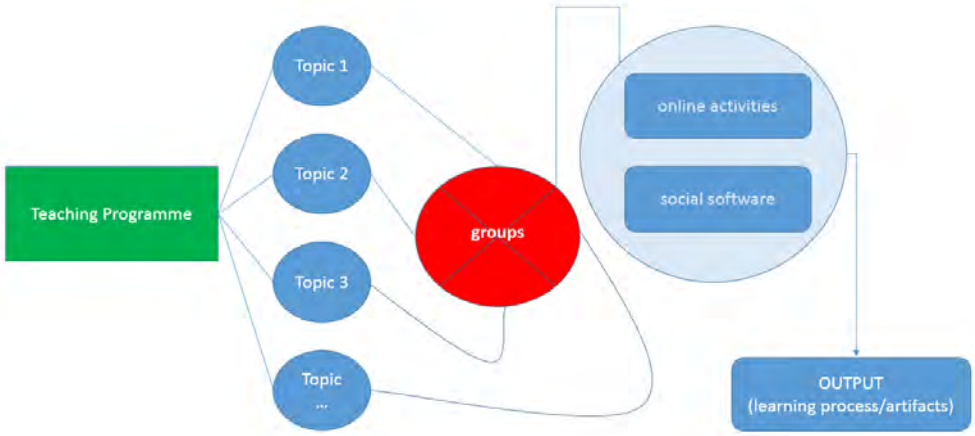

Figura 1 - C@vir

The under development software C@vir promotes, through a series of simulated activities (role-play), the social interaction and the execution of cooperative activities with a plurality of social media.
Starting from an online environment, the teacher can create various topics related to his/her teaching program. Three elements characterize each topic: case study, learning resources (e.g. glossaries, bibliographies, readings etc.) and social media that support online interaction and user's production (wiki, forum, chat, etc.).
The implementation of online cooperative learning activity requires that teacher scaffold learner's during their cooperation. Drawing by roles defined in cooperative learning studies, a randomized procedure assigns to each student a specific role within the group (e.g. leaders, skeptical, controller etc.). Than students select at least two topics and each role can be cover only one time *per* topic. The number of participants for each topic (e.g. 6-12 members) is a component automatically defined by the software in relation to the type of activity planned.
According to Delfino *et al*. (2006) the role-play is a technique that requires participants to "play a part" in order to assume a particular point of view during peer-to-peer discussion. As it happens in on line learning courses even in the C@vir prototype, students perform a variety of actions such as learning resources analysis (glossaries, readings etc.), comply the role assigned, discuss and create learning artifacts (web page, interactive presentation, hypermedia etc.).
Each topic uploaded by teacher matches with one or more tasks that students could cooperatively complete. This step has some similarities with the concept of eTivities introduced in 2003 by Gilly Salmon. An eTivity describes a framework to facilitate active learning in online environments and it involves the interaction between members and tutor in order to achieve a particular task. In our hypothetical model for each eTivity correspond one or more learning objectives that teachers define during the cooperative learning design. Table 1 shows some examples of objectives/activities based on

Bloom's Digital Taxonomy by Andrew Churches. It can freely inspire the organisation of "digital activities" within C@vir.

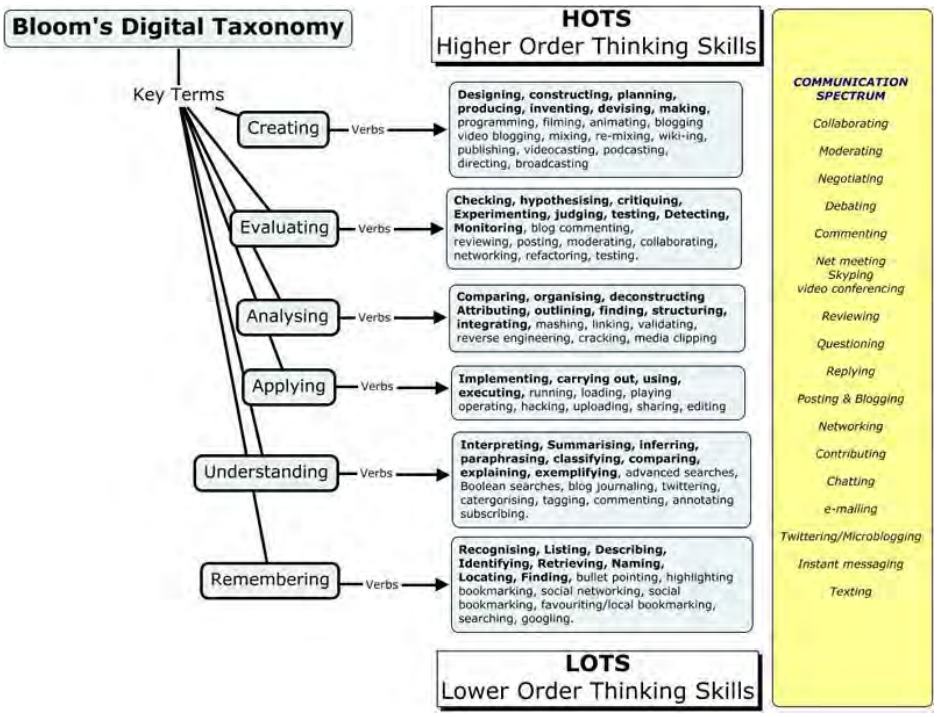

Table 1 - Blom's Digital Taxonomy: an overview

Using C@vir the teacher monitors the online learning process during the entire project life cycle. So he/she can intervenes both during the process of construction of an artifact and during the evaluation phase, which it can be made with a variety of assessment tools (rubric, numerical evaluation, etc.). At the end of a hypothetical activity, the final product or process (create by learners) can be posted and shared in external social channels (e.g. Linkedin, Facebook, Twitter, Blogs, School web site etc.).

Conclusion

Is the University context ready to embrace and integrate into its own organizational strategies and educational practices the CSCL pedagogical planners? Currently, we can partially answer that while the social software starts to be part of a broader communication strategy within the HE Institution, the educational practices of "social networking" seem still relegated to individual initiatives and/or experimentation. According with Kaye's words, in a forward-looking article appeared in 1994, in the educational and training contexts - in which different members of a group assume different roles at different times (tutor, student, operator, facilitator, expert, etc.) - the software that gives support to specialized roles, giving differential access to resources, tools and activities, can play an important role in the organization and functioning of the working group.

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Where do we go from here: from LMS to collaborative learning in academic environments

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Abstract

Recent years have seen a widespread use of Learning Management Systems (LMS) in managing and operating e-learning courses in different contexts. The main usage has been the distribution of learning objects, but many other functionalities and features not strictly related with educational aspects should be added. These functionalities, like the enrolment of students, payment management or public tenders and concourses management, are normally not available in a LMS, and most of the time are developed separately in other systems. The paper presents the directions of evolution foreseen and implemented in a LMS through a set of functionalities that integrate educational, collaborative and management services, thus allowing the system to become a crucial part of the whole information system, providing useful services that could be used in collaborative and cooperative processes.

Keywords: Learning Management Systems, Information Systems, Collaboration, Cooperative Learning

Introduction

Since the early years where they entered into the market, Learning Management Systems (LMSs) have reached a high level of maturity, providing professional solutions to mostly any educational need. After first, individual experiments that used a wide range of alternatives to provide educational services (blogs, wikis, CMSs, self-made web sites and many other self-made solutions), educational institutions started to formalize the support to didactics through the provision of centralized, managed and supervised LMSs.

One of the issues of LMSs today concerns the use of tools of e-learning in different and broader contexts than pure training, and the integration of these tools with the rest of the information system (IS) of the institution. This issue is particularly evident in academic settings: indeed, e-learning is seen as a separate world respect to the rest of IS. However, when the e-learning needs grow, turning the platform from a simple repository of material to a tool devoted to integration, collaboration, cooperation between virtual communities is not trivial. New models and approaches are becoming more familiar to teachers and (especially) students. The dominance of social networks today in computer-mediated communication is heavily influencing the approaches to teaching, learning and collaborating. Online Cooperative Learning (OCoL) tools provide web-based access to services supporting cooperative Learning that go beyond face-to-face interaction [Huang et al., 2011], [Obadi et al., 2010]. Results of researches around the world are demonstrating the value of collaboration and cooperation in e-learning[Sunita et al., 2012]. Guidelines of design and implementation of online cooperative learning are also available, that evidence in some way the adaptation that a traditional LMS should undergo in order to enforce and support higher education institutions [Ba-Mohammed et al., 2014].

In this paper, we present an analysis of how LMSs should evolve in the future, in our opinion and according to our experience, in terms of functionalities and services provided to users. Universities are using LMSs mainly for issuing educational services, but many other services could be provided, expanding the role of LMS towards collaborative platforms integrated with other systems, and delivering services for tasks not strictly related with education. Behind these new functionalities and services, we foresee research fields that could provide interesting and fruitful stimulus. The direction goes towards an expansion of collaboration services, where virtual learning environments should be mixed with typical CSCW tools and approaches that puts collaboration at the heart of the system. Nevertheless, also traditional e-learning services should be improved with additions coming exactly from this integration with cooperative / collaborative services. As clearly evidenced in some research

studies [El-Ghareeb, 2009], [Colazzo et al., 2012], [Riad et al., 2009]. LMSs are devoted to support "learning" activities, while university management ISs are responsible for handling University managerial activities, but the two things are strictly related and could benefit from a more strict integration. However, a simple adaptation/customization of the platform, or an assembly of different tools in a "patchwork " is often inefficient and hardly usable, creating issues in usability, single sign-on, licensing, integration etc. In general, this means to intervene heavily with customizations , often distorting and losing or compromising compatibility with future releases of LMS. The growing phenomenon of MOOCs , for example, sees a proliferation of platforms created specifically to handle these important levels of complexity, that partly are overlapped with LMS. On the other side, some LMS platforms are extending their capabilities labeling them as "MOOCs" extensions. Therefore, it is important to widen the horizon in different contexts in which the availability of a web-based software platform is not only a big help, but it is an essential element to reduce space and time barriers and enable collaboration "anytime - anywhere". New tools and services are required to expand the training activities to collaborative activities. Similarly, with the increase of complexity , tools for distributed decisions support are becoming increasingly crucial within the communities.

The starting point: a Virtual Communities LMS.

The testbed for our research experimentation has been a virtual community platform that we have created and developed along the years, used in our University and in many public and private organizations. The platform, named "Online Communities" is oriented towards the support of collaborative processes, where e-learning is one of the most important applications, but not the only one, and where have added new services supporting collaboration in different ways. Even if it has been applied to e-learning settings, today "Online Communities" is mainly used outside the university campus, serving tens of thousand of users from different public and private customers against approximately 16.000 students in our University. The platform provides a wide range of articulated functionalities:

- "traditional" services: asynchronous, synchronous and "Personalized" Services according to partners' needs (for example to support life-long learning and "training on the job" projects).
- Integration services with external ISs (for example, the Personnel IS of the organization).
- Services for the fruition of "off-line" courses with respective editing functionalities, with the possibility to synchronize the video with slides, podcast, webcast, SCORM modules, etc.
- Services for the creation of evaluation test, exams, self-evaluation tests, quizzes, polls etc.
- Statistics about the users behavior (using an internal data warehouse enriched by activity logs);
- mobile services to support mobile learners;

The platform is constantly extended with new services, coming from research projects, users requests and the results of our almost 16-years' experience in designing, developing, implementing and using e-Learning system (LMS), with a specific approach in mind. This approach is, in some sense, "against the current" of standardization and "normalization" of LMSs, in our opinion too flattened over these pre-defined, pre-designed software platforms. Our approach implied the creation (from scratch) of a virtual communities' platform definitely oriented towards the full integration with (and dependence from) various services offered by the IS of the institution that hosts educational activities. This means not necessarily a traditional educational institution, like schools or universities, but rather any organization where educational (and probably more important, collaboration) activities are supported by ICT-based platforms.

From our experimentation, it is clear that an e-learning platform is not an external system respect to the rest of the IS, but it is a crucial component for any organization. Due to space limits, we will provide a short description of the services that we offered in an integrated software platform to the users

Integrating LMS with IS: examples of services.

Our first application field for LMS evolution is a tighter integration, that could also mean entire substitution, of LMS services with what is provided, with many different tools, inside the IS of the organization. All of us need to share documents via web (and so many users use cloud based solutions, like Dropbox™, Gdrive™, OneDrive™ etc.), many times we need to substitute face-to-face meetings with a Skype™ conference, or want to set a common date for a meeting, thus using Doodle™ or similar services. In any of these situations, most of the ISs are in trouble, because of company's security policies that deny accessing to these services, because they are not compatible with certain operating systems, because they are not complaint with one of the participants' company policy, because in the country of one participant they are not available /allowed etc. Most of the time, IT managers prefer to have closed, safe, well known solutions (mainly choosen by them) and don't like at all users to have their own favourite tool. On the other side, many of these services/tools could be, or are already available in a LMS, but the LMS is not integrated with the rest of the tools available. The following are the commonest problems we found in this context:

- Single sign-on with the rest of the IS: this seems to be the most trivial service, but most of the time you have two or more different credentials tham must be kept aligned.
- Candidacies collection: students around the world apply to the programme, input their data in the unified platform, and this data will be used for the rest of the IS
- Evaluation committee support, i.e., managing candidacies, evaluating them and producing the final ranking. Some mathematical models for consensus management across evaluators could be very useful . Moreover, collaboration tools to avoid people moving to a physical place, but being able to collaborate a/synchronously to produce the final decision.
- integration with administration tasks: members of the administration should be part of the communities, both during the selection process and the educational tasks, being always aware of what is happening and able to share documents with the members.

There are many other services that we have considered as useful in this integration. Most of them provide solutions to collateral needs respect to the specific educational tasks, nevertheless they are a fundamental part of the organization:

- Participants records alignment and exchange
- Attendance records (for HR department)
- attendance certifications
- Time management(agenda, doodle, task management)
- Ticketing, tutor and teacher requests
- Accounting and ERP integration
- Payment management
- Questionnaires / polls

New services for new platforms and new markets.

Together with the needs of ISs' integration, we developed several new research directions, with the idea of selecting best-of-breed researches in the specific field, evaluate their usefulness for LMSs, and then developing them as services provided by the platform itself. The first important application area comes

from the research field of consensus management and decision support systems, designed to bring down costs, logistics and complexity of collaborative processes, such as

- the selection of candidates for a training program
- the evaluation of various training packages compared to a predetermined learning path
- the evaluation of projects to an evaluation committee
- the definition of the best training course for those learning objectives
- the assessment of best contribution to a forum, a wiki, a web page against various contributions of the participants
- the creation of a competition inside a virtual community
- the determination of consensus of different experts involved in any kind of evaluation.

In [Fedrizzi et al., 2013], the scientific foundation of the tools under development to provide DSS services to our platform are presented. In the meantime, several other application fields of a DSS engine inside a LMS have been highlighted and requested by end-users.

A second field of research regards the integration of techniques and tools of project management, workflow management, and performance management processes into training and collaborative processes. These aspects also need to integrate in-depth analysis of organizational dynamics related to the educational process and the costs associated with it, the procedures for contracting of teachers involved in the production and management of training projects, methods of providing tools for end users to manage their time (calendar, planner, events, appointments, schedules, meetings, meetings, tasks, etc..) in an integrated manner.

The need of project and time management tools in collaborative environments is very clear, with a plethora of platforms and cloud services today available even for free. What is less clear in bibliography is the role of project management tools inside educational settings. In our evidences, there is a huge need of planning, scheduling, budgeting even inside e-learning, especially when LMSs are used outside academic settings. Nevertheless, a thesis assigned to a student is, under any perspective, a real "project", that has tasks, milestones, deliverables and (figurative or real) costs like any other project. An educational path and all the tasks that any enrolled person has to deal with is, again, a "project". According to this, we integrated in our LMS a fully fledged, CPM-compatible tool for managing projects inside a virtual community. The service is available both for users with educational needs and for users that have any other need in the IS.

A third research direction regards the creation and management of complex training programs that meet the growing needs of life-long learning on the one hand, and the involvement of large numbers of users with different learning paradigms on the other hand. Needs covered by this research action are the following, even if the list is not complete:

- the self-assessment of skills of participants
- the support to solve these skill gaps
- the contemporary management of courses and work tasks for working students, with the use of multiple tools and different methods of learning,
- the identification of personalized training paths.

In this context, on the one hand the SCORM standard has a number of well-known limitations, not always evidenced by researchers, but well-known in the industry [Web1], [Web2]. On the other hand, life-long learning approaches and solutions require greater integration with enterprise ISs and their components (training booklet, human resource management, contractual aspects of management time slots form training online etc..). In order to address these needs, a new service called "Educational Path" has been developed, incapsulating Learning objects produced according to SCORM standards, but adding some features that enrich the services and that are more suitable to the organization's IS.

The last research area we want to present in this paper is interesting also for the applicability of training tools to large masses of users. The paradigm of massive open online education (MOOCs), has an obvious importance for the dissemination of an open knowledge, even if the risk is that the current research in academic environments is interpreted more as a marketing tool than an actual increase in the quality of education delivered. Nevertheless, extending open education to hundreds of thousands of users is a fascinating perspective for institutional education (especially at university level), and is becoming interesting also for large organizations. The real question is in the conceptual parts and in the organizational extensibility of these approaches outside academic institutions, where the business-related e-learning courses are not very comfortable with the idea of "open" and "massive". There are, however, non-academic, business contexts, in which these approaches could be very valuable, such as those settings linked to cooperation and voluntary organizations. In these contexts, the logic is partly close to academy (open content and large masses of users), but the types of services provided should be viewed within the "business" perspective. This means that aspects of measurability of training fallout and skills certification should be envisaged, while these issues have not been fully clarified in the context of traditional MOOCs.

Conclusions.

This paper points out the research directions that have been followed by our group in the last five years in order to extend an existing LMS towards two directions:

- a deep integration with the IS of the hosting organization
- a set of applied research lines allowing the platform to support both educational and collaborative tasks, thus allowing the usage of the LMS into fields more devoted to collaboration and not just limited to training.

This deep integration between LMSs and the institution's IS allow us to make some comments on the most useful services for our users. Even in other environments than the educational institution, like the public administration, there is an increasing need to create a personal, professional (or learning) space available to employees, based on a deep integration with the rest of the services that normally employees have at their disposal. Thus, just storing teaching materials used during lectures is not enough: educational services should provide integrated management functionalities with the IS, allowing all the stakeholders to have a unified view of the processes affecting their time (administrative duties, collaboration, communication, document sharing etc.). Four main research areas, i.e., DSS, Project management, post-SCORM standards and MOOCs have been addressed, leading to the creation of specific services that enriched the application areas of the original LMS.

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SES-C3:

METODI E FORMATI PER LA DIDATTICA INTEGRATA

Engagement and distraction. What about post-Lauream teacher education?

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Abstract

The aim of this paper is to present a research investigating the opportunity to alternate in-presence lectures with webinars and other online resources, in a context of post-graduate blended education.

We'll illustrate the data collected through a questionnaire submitted to about one hundred adult students, participating to a blended course devoted to school teaching habilitation (PAS). Participants were asked to evaluate their own effort to the course completion: when, how much and where they were able to study the various sorts of materials (lectures, web-lectures, webinars, etc.), whether they perceived interference by external or internal distraction factors.

As we shall see, the students' opinion is that distraction is mostly caused by internal factors, an issue that should be compared with the known relevance of interference due to BYOD and social-devices related multitasking. It turns out that internal causes of distraction provide an emerging aspect of research on distance education.

Key-words: Blended, Flexible Learning, Higher Education, Distraction, Multi-tasking.

Introduction

The world of instruction is currently witnessing convergent streamlines of change. Among potential recipients of education interventions an increasing request towards high quality education can be perceived.
Simultaneously, the community of educators/instructors is striving towards increasing the offer, making it more democratically available and improving the service.
There are numerous fields of study which can profitably be utilized in planning distance learning or blended courses (see for instance: Ligorio et al., 2006; Salmon, 2005; Merrill, 2002). Further to such studies a new thread of investigations recently emerged regarding quality and efficiency of MOOCs. In fact MOOCs, which were born with a promise of democratization and of improvement of teaching quality, provide us information on huge numbers of subjects and on courses repeated several times, thus granting strong external validity to the performed studies (Kim et al., 2014). Moreover, the line of research dealing with study motivation is also reviving, in considering motivation and volition in distance learners and also in exploring causes and consequences of nowadays study environments, in which students make use, with multiple goals, of their own electronic device (BYOD) (Rosen et al., 2013; Park et al., 2013).
Here we propose a research on data collected in the past academic year within a blended course devoted to adult students aimed at a post-graduate training. We investigated whether it is possible to describe the interplay between such forces and the motivational aspects. Next we will describe our research.
We will report on the results concerning the motivation, the problem of time (how much and when to study), the choice of the resources (what to study and what one would like to), and trying to understand which are the causes of disturbance (if any), external or internal.

Background

Lifelong Learning

Research on Lifelong Learning is copious, especially because of the increasing interest and need of adults to approach frameworks of formal education and become students again.

This happens to those who must attend refresher courses, post-graduate courses, training stages or habilitation tracks, such as, according to current Italian regulations, TFA (Tirocinio Formativo Attivo) and PAS (Percorso Abilitativo Speciale), which are courses for school teachers holding only temporary positions. These are people already holding a degree, working, who are motivated to complete such an education program with the aim of obtaining or stabilizing their teaching position.

The opportunity to resume study is facilitated by the fact that distance and blended courses are available. However time is required, and also engagement and mental effort.

Research on MOOCs describes the peculiar difficulties that must be faced both by those who plan the courses and by the distant recipients of such courses. Research on BYOD, on multitasking and on volition displays a framework of problems of attention which may affect blended students.

MOOCs and dropout (macro and micro)

MOOCs (Massive Open Online Courses) are well-known as the emerging educational resources, as they carry a great expectation in terms of inclusion, democratic access, quality of instruction.

At the same time, problems of isolation and low engagement experienced by learners using such resources are also well-known. The consequences are clear: low performances, high rate of dropouts.

The dropout phenomenon comes in two aspects: a macro and a micro dimension. It turns out that only one course out of ten is brought to completion and leads to a certification. Among such a small percentage of those who endure to complete the course, one out of two lectures/sessions is interrupted within a few minutes (Kim et al., 2014). Traditional in-person lectures usually last an hour, but students have much shorter attention spans when watching educational videos online (Guo et al., 2014): students quit watching a video after six minutes roughly (median 4.4, for videos of 12-15 minutes).The distant learner, who commits herself to the initial decision to restart studying, needs to keep her motivation alive, must update the initial choice in the several phases of study, continuing, persisting, resisting to distraction of external type (noise, phone calls, etc.) and of internal type (own thoughts and mind wandering).

External and internal causes of distraction

In almost all cases distance education involves use of private resources, and there is a tight connection with the recent trend of BYOD (Bring Your Own Device).

Various aspects of such a phenomenon have been analyzed. One in particular is concerned with the problem of interference due to the multi-purpose use of the available devices. The use of personal smartphones, tablets, laptops allows to take advantage of the education resources, but also the connection to news feeds, social media, interest groups. Such devices foster the obligation of being always connected and available. As a consequence, the study is often interrupted: by receiving a text ringtone, or the alert of a news feed the student may turn its attention to such stimuli. Sometimes it may be the matter of a few seconds of interruption, in other instances time goes on and the concentration is lost. Splitting the attention among several tasks makes the process slower in most of the cases, it reduces the quality of learning, and also the amount of acquired information (Monsell, 2003; Arrington et al, 2004; Pashler et al., 2013; Paoletti, 2014).

Besides external sources of distraction, internal sources may compromise elaboration and learning. This is the case of task-unrelated-thinking and of mind wandering (Risko et al., 2012). Mind wandering consists of a shift of attention from an exterior stimulus to internal thoughts which seems to compromise coding information of external origin. Less studied than split attention between dual

tasks, it is demonstrated that they can disrupt external information coding as much as a phone ringing (Risko et al., 2012). Even a strong initial motivation may be weakened when confronted with difficulties. It is necessary to have the ability to focus on the task, to resist the decay in motivation and negative feelings. Such ability is named volition and, as is easily understood, it is crucial for academic success and even more so for distance education.

Our investigation is aimed at describing the context of elaboration and study of blended students dealing with various kinds of learning materials enabling, or not, interaction (webinars, classroom lectures) and control on the pace of the presentations (the recorded resources). Our expectation was that: interactive tools should potentially alleviate the isolation and distance feelings reported by studies on MOOCs. The material under the students' control might have diminished the elaboration difficulties linked to comprehension problems with new material and also the difficulties of concentrating on a single task. We have verified such hypotheses on the basis of the students' answers to our questionnaire. In what follows we shall discuss some of the most relevant emerging consequences.

Method

Subjects

The questionnaire on the motivations of attending the course was completed by 83 students. They (26 male students and 57 females) were specialized in several disciplinary fields (three main areas, Science, Human Studies, Music). The full-time employed subjects were 63.

Material

The course PAS (Percorso Abilitante Speciale) has been performed in a blended modality, with also in-lab group activities. The recorded behaviors, the opinions and the beliefs we shall describe only concern the part of the course regarding the pedagogical content, which was common to students of all areas and consisted of 18 credits. Each of the three blocks forming the whole course (Disability, Evaluation, Teaching technologies) consisted of 10 hours of classroom lecture, plus 15 hours of audio, video material (video lectures, webinars) and texts (by links to written resources, tests, research publications), all of which were available through the University's distance education environment Moodle. Part of the material was administered in synchronous modality (classroom lectures, webinars, labs), but all of it was also available in asynchronous recorded version.

The questionnaire

The questionnaire was set up starting from the issues arising in the above mentioned research fields (difficulties in lifelong learning, features of the learning resources and effects on attention). It poses questions on the reasons of the initial motivation, information on study collocation (when, where, how long students are able to study), the preferred formats of presentation (see fig.1). It was asked if, overall, in-presence resources were preferable to those available at a distance, and to explain why. Further, it was asked if distraction occurred with the various forms of materials and to evaluate the adequacy of the time length of the materials. Students were also asked how often they got distracted and by which causes, either external (phone ringing, texting from friends, job call, family call) or internal.

Procedure

At the end of the course (lasting from March to May 2014), prior to the final exams, the students were invited to fill in the online questionnaire. The invitation was sent by e-mail twice and posted on the Moodle page of the course.

Results

Here we shall report on the motivation issue, on the problem of available time for study, and we shall discuss how long and when students study and wish to study and which are the causes of disturbance.

Study motivation and Study time

From the answers to the questionnaire, it turns out that a majority (43 out of 83) of the students attaches very much importance to the course, and other 31 among them care much. Motivation seems to be mostly linked to job needs, to obtain or maintain a position. Cultural interest and refreshing requirements count-less. Among them, 54 feel obliged to do it and 61 believe to put a very high effort in attending it.

Further results concern the description of the study context. More precisely: in which place do they study, which periods of time can they devote to study. Since some resources are long, time consuming and consist of complex material, we were concerned with the possibility for the students to achieve adequate concentration and study continuity towards a satisfactory elaboration. From the answers, we obtained that most subjects (60) study at home, a few of them (7) study at home and on the train, or at school (15). Others study wherever they can: in the garden, in the teachers' common room, in the pediatrician waiting room, in a library. Regarding timing, they study in the evening, after dinner, at night, in the weekend, or early in the morning, in the free day, in any spare time or during transfers. They succeed in studying between 30' to 380', with no interruption, the average being 137' and SD 75'. Most of the subjects say they are able to study each day for about 60' to 180'.

What to study - Most preferred and most disliked formats

One section of the questionnaire asked to point out which, among the formats used (lecture, webinar, texts, etc.), were less or most liked. 78 subjects express fully the three preferences, while only 54 of them express three dislikes. In fig. 1 are displayed the preferences of the participants. Among preferred resources, the most interactive emerge: in-presence lectures, live webinars. The less liked formats are the material and texts available online, books or books chapters and lecture slides without audio. A first remark that emerges is that most disliked formats are those that require autonomous elaboration, to be read alone without the organization and planning mediation of the lecturer or the learning designer. Lectures, either in presence or recorded, might be preferred because students are helped by a predetermined reading sequencing and by an explicit interpretation, in a narrative format, which does not require to the learner searching and organizing tasks.

For the students of this course the most preferred materials are those for which the utilization time is predetermined and fixed. Synchronous usage of resources is markedly preferred. 50 participants prefer in-presence lectures, either short (two academic hours, 90') or long (five academic hours, 300'), 33 prefer those at a distance.

Explanations to such preference, expressed through an open text answer, have been categorized by the present authors and it turns out that:

in-presence lectures are preferred because they provide *more interaction* (38 occ.) and *better attention* (24 occ.), because *sense of reality* persists (11 occ.) and are closer to *prior personal experience* (6 occ.);

lectures at a distance are liked because they allow a better management of logistic and organization matters (31 occ.), they allow the autonomous management of study and comprehension time (17 occ.), they grant a better attention (3 occ.).

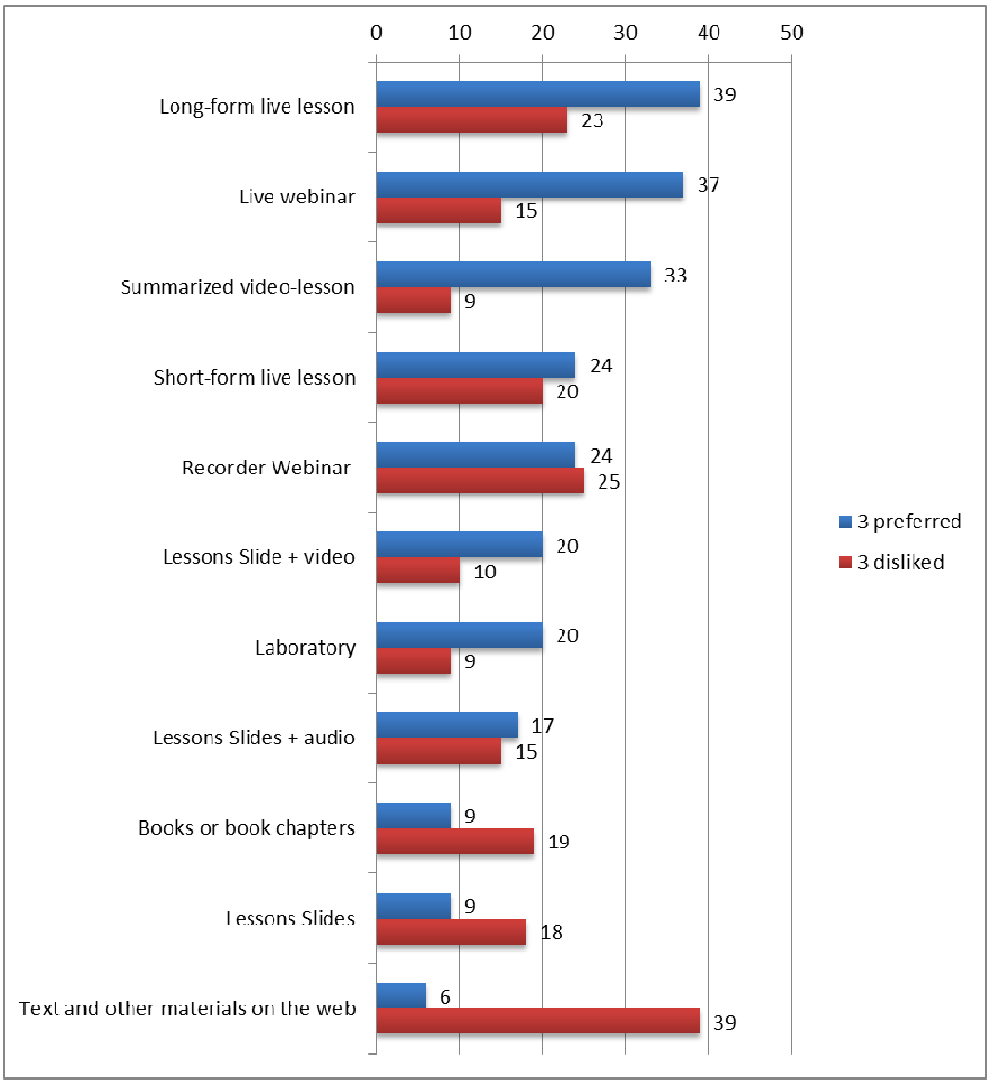

Figure 1: Learning resources:
the 3Top preferred learning resources and the 3Top most disliked learning resources.

During a lecture, independently of its length, it is possible to ask questions, one can relate with other students and with the lecturer.

Distraction: External and Internal causes

The majority (44 out of 83) of the subjects states to loose attention often. Distraction accurses independently of the type of resources. The answers are collected in the table n. 1 and show a complex framework.

It appears that the only event that hardly leads to loss of concentration is texting from friends, as if it was a regenerating pause, light escape, profitable for cognitive elaboration. Job and family concerns, either from internal or external stimuli, provoke great loss of concentration.

The main trigger to distraction is apprehension rather than environment and social disturbances. It emerges that concern to personal worries is heavily sensed and is the major source of distraction. When asked if external or internal causes of distraction are more frequent, 47 subjects report internal causes, 19 external ones.

WHAT ARE THE SOURCES OF DISTRACTIONS?						
		Never	Sometimes	Quite often	Often	Always
External factors	Text messages from friends	31	**27**	**14**	8	3
	Call from family	10	**22**	**21**	20	10
	Call from office/work	14	**24**	**21**	13	11
Internal factors	Worries about work	3	8	19	**34**	**19**
	Worries about family	3	16	24	**27**	**13**

Table 1: Internal and External factors of distraction.

Finally we asked about personal feeling occurring when distracted. Tiredness (72 occ.) prevails, often coupled with apprehension (57 occ.).

Conclusion

The purpose of this investigation was to provide a preliminary snapshot of the reactions of adult students to a post-graduate course which made use of various types of resources.

The data collected concern the effectiveness of the resources as perceived by the students. We investigated their initial motivation, their study habits and preferences, how these fitted with different study resources and difficulties experienced because of internal and external sources of distraction during attendance and study.

The results collected by administering an online questionnaire can be summarized as follows. The course structuring has been well received since the opportunity to choose among various combinations of resources was available and also because the group size was limited enough so to allow interaction, alternating between presence and distance. The transfer burden was reduced by allowing (not forcing) in-presence attendance, which is the format preferred by the majority. The availability of recorded material (either used in synchronous modality or retrievable later on) seems to meet the needs and preferences of students.

The difference between ideal duration of resources (as indicated by our subjects) and the one resulting from research on on-line courses, MOOCs especially, may appear surprising. While in the latter attention drops resulted after 6', our students indicated as ideal duration 1-2 hours. Explanations may be various and multi-faced. In-presence lecture, as stated by participants, is more involving, it forces and fosters attention and (at least) external disturbances are avoided. A recorded lecture, and asynchronous, allows repeated review of the material. Differences among resources are clearly acknowledged. When asked about ideal duration, the one for in-presence lectures is more extended than the one for lectures at a distance or for video-lectures.

Regarding concentration, students believe to get distracted rather frequently, with all kind of resources especially by internal factors. Tiredness, low attention/distraction, fatigue are the main perceived obstacles. It emerges that concern about personal worries is mainly perceived, as the heaviest, often fomented, source of distraction. Less disrupting are considered job and family related calls and texting, being sudden and short.

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E-learning to overcome the problems with the teaching of social sciences methodology

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Abstract

In last years, Universities are updating their educational activities, thanks to the introduction of e-learning. In this paper, the e-learning course in social sciences methodology, activated in the undergraduate programme in Sociology at the University of Salerno, is presented in order to show how the traditional difficulties of this discipline are faced up thanks to the online course, bringing positive results in the learning process of the student.

Keywords: collaborative e-learning, social sciences, research methods, teaching, ICT

Introduction

The University of Salerno has been experiencing different forms of distance learning for more than ten years, receiving an increase of the number of students and producing significant results in terms of teaching and learning (Vento *et al.*, 2008).

The goals defining the mission of e-learning are the need to respond to an unmet demand for education, to enrich the offer of the University and to make more flexible the study paths using innovative methods of learning and teaching. In addition, the idea to combine the traditional teaching methods with the opportunities offered by e-learning has been fostered by some problems such as the low attendance of students to the courses and the high dropout rates (Arcangeli & Diana, 2009).

Since 2001, the undergraduate program in Sociology has taken this chance, giving students the possibility to follow e-learning courses.

In this paper, the e-learning course in social sciences methodology of the bachelor degree in Sociology is presented. More specifically, the traditional difficulties that students usually meet in this kind of discipline are recognised and some specific solutions are provided, by adopting the opportunities offered by e-learning.

The course is the result of a ten-year experience of the Professors Paolo Diana and Bianca Arcangeli with the support of tutors and technical staff. Since last two year, the e-tutor has been Maria Carmela Catone.

Issues of teaching in social sciences methodology

In recent times, different kinds of institutions - from private companies to public administrations - have started to invest in technology-mediated learning. In Italy, although with some delay compared to other European countries, e-learning market is growing, registering positive trends. With regard to universities, an increasing number of academic institutions are introducing e-learning courses to support the traditional teaching, in order to make a diversified and flexible educational offer (Mobilio, 2008). The design and the implementation of an e-learning environment is not an automatic conversion of the traditional teaching into the technological environment, but it represents a complex system, consisting of content to be delivered, but also of the theoretical basis, technological choices, human resources to be employed (Trentin, 2003). The contemporary scenario of e-learning moves toward the centrality of student, the customization of contents and a collaborative environment of co-production where users, apart from being communication receivers, can become communication senders and knowledge creators (Harasim, 2012). For the design of the course in social sciences methodology we tried to work in this direction, starting from the difficulties experienced by students during traditional lectures.

The course of social sciences methodology is planned in the first year of the bachelor degree in Sociology. It is an introduction to the methodology of the social sciences and it allows the acquisition of the linguistic, conceptual and technical basic skills of the area. In particular, the course aims to promote the development of methodological expertise, to provide students with knowledge, skills and the right vocabulary to design a social research, to translate a generic social problem in a specific research question and abstract concepts into measurable ones. It also provides a systematic introduction to social research methods, both quantitative and qualitative, and to the philosophical and epistemological perspectives underpinning the social sciences.

The teaching of methodology usually raises many obstacles, caused by different reasons; first of all, being a course held in the first year, it addresses to students with limited reading and writing skills, general knowledge gaps, lack of specific basic skills and inappropriate method of study (Arcangeli & Diana, 2009). Beyond the cultural gaps, also the problems of socialization in the university context emerge.

In addition, we have identified some issues specifically related to the discipline. The social sciences methodology course is considered more formal than other courses and, therefore, it arouses less interest by students whose desire of knowledge is usually oriented to substantive topics (Gobo, 2009). Another problem concerns the linguistic register that, in a discipline such as methodology, plays a central role. The acquisition of the correct terminology is one of the main aims of the course. Indeed, the methodology is the study of the logic, the assumptions and the fundamental principles of research, but it is also the reasoning or the discourse on method (Marradi, 2007). It relates to the production of scientific language and it tries to reduce the vagueness, the ambiguity and the redundancy that characterize the common language (Bruschi, 1999). Within the teaching of social sciences methodology, the methods used in empirical research are introduced. In general, there is a negative perception by students to quantitative methods that are considered very hard and uninteresting (Payne & Williams, 2011). Moreover, students seem to be fear the technical aspects related to the statistic notions, arousing in them a state of anxiety. Even the teaching of qualitative method poses some problems because it is often considered as a secondary component of the quantitative method. Students usually attend our classes with the belief that qualitative research is weaker or easier than quantitative research (Fontes & Piercy, 2000). For these reasons, they often pay less attention to the study of this kind of method.

Adopted solutions

To respond to the issues raised by the discipline and by the low level of education of entry students, over the years the following solutions have been proposed.

Starting from the resistances that students have towards the social sciences methodology as a not substantive subject, we tried to foster the idea of a teaching that, although formal, is characterized by a concrete validation in its use of empirical research. At the end of each unit, interactive exercises (e.g. drag and drop) concerning real research situations are presented. In addition, in discussion forums students, through a collaborative learning, are called to address and to discuss on the research situations examined. Student are encouraged to explore sections devoted to the reading of articles, research reports and resources of the web, concerning questionnaires, data set of classic research and bibliographies. The diversified use of different resources allows students to translate the “abstract” theoretical notions into research applications, so contributing to arouse students’ curiosity and interest. Considering the difficulties that students usually show in the acquisition of a correct linguistic register, each unit is designed with a clear and easy language, without neglecting the rigor of the study area. Also in this case, the use of many examples and exercises is fundamental. In order to enhance the acquisition of a common linguistic code, a glossary, a basic methodological vocabulary, is provided. Moreover, an e-learning course is mainly based on written texts (teaching units, forum, chat, communication between students, and tutor/student, support materials, assignments) and writing is more than just an aid to memory, but it raises the level of awareness and reflexivity (Ong, 1986). For instance, in discussion forums, students pay more attention to the terminology used and the moderation of the tutor is crucial to support and to give some directions for the correct use of the methodological register. According to us, the forum represents the place where student experiments

both the level of accumulation of knowledge both the adequacy of the linguistic register of the disciplinary field.

Moving to the difficulties that students usually meet in understanding the methods used in empirical research, for the quantitative ones, we have tried to show the value of quantitative research in ordinary life as caring and active citizens (Payne & Williams, 2011). E-learning course, thanks to the resources offered by Internet, provides contemporary examples such as publications of social researches, report of articles newspaper, opinion surveys that are crucial for the development of the critical thinking of the student. Moreover, with the introduction of open data, students have direct access to databases, useful to improve the ability to read a table, to distinguish the variables and to understand which kind of analysis is needed according to the research question. With regard to technical aspects of quantitative methods, it is important that students realize that they already possess the skills needed to understand the foundations of quantitative research. Indeed, some easy interactive exercises on the technical notions are offered.

In conclusion, for the teaching of the qualitative method, we have tried to convey the idea of a method relied on a rigorous *modus operandi* and not on improvisation. The organization of the units, well-structured in the presentation of the different phases of the qualitative research, contributes to the achievement of this purpose. As for the quantitative method, a deep understanding of qualitative one is fostered by the exploration of concrete research experiences. In particular, student learn to use the written text, such as the excerpts of interviews that represent an important empirical basis in qualitative research (Diana & Montesperelli, 2005), developing organizational and interpretative skills. Moreover, the e-learning course, by adopting different kind of web resources, provides a breeding ground for the last frontiers of research method, such as the visual sociology.

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The XXI century School Learning Disruption: a project for an Open, BYOD, Flipped classroom (OBF) with Innovative Design of Didactics

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Abstract

Disruptive technologies are challenging traditional School Learning. Boundaries are blurring: formal mix up with informal, real with virtual, the teacher with the learner. Liquid modernity takes on school a great responsibility. Education became a lifelong learning journey. Learning experiences need to be designed and carefully projected. This article proposes a new way to set up learning activities using Open Resources, BYOD (Bring Your Own Device) and Flipped Classroom modality (OBF). The OBF project intends to rebuilt traditional didactics of Mathematics and Physics in two classrooms (third year of Scientific Lyceum). Learning Units will be restructured according to the Innovative Design of Didactics guidelines.

Keywords: Didactics, Innovative Design, Flipped classroom, Learning environments, MOOCs in education

Introduction

At present we are living into the society of liquid modernity, according to the philosophical and sociological speculation by Zygmund Bauman, who analyzed the phenomenon of globalization and the most significant aspects of the present society (Palese, 2013). Living and working into liquid modernity needs to be adaptive to reach goals and to be resilient in the various stressing situations. People must quickly response to requests to avoid to be scraped. XXI century competences and skills are based on information knowledge and lifelong learning. People have to be open minded, inquire based, humble, collaborative and social: teachers have great responsibility in educating young people.

Teachers have plenty of available new resources to get their educational goals:

1. access to the enormous assets of knowledge and experiences stored in the Web
2. large availability of Web 2.0 instruments and Apps in Internet
3. full supply of technological and mobile devices

Disruptive technologies are challenging traditional institutions. Boundaries are blurring: formal mix up with informal, real with virtual, the teacher with the learner. The collective advancement of Education through Open Technology, Open Content and Open Knowledge allows opening up Education. (Seely Brown, 2010).

State of the Art

Open learning is now a great realty.We have to take note of over ten years of the Open Educational Resource (OER) movement, of hundreds of OER repositories worldwide, of the presence of iTunesU, Coursera, Kan Academy, TedED and of the emergence of MOOCs (Massive Open Online Courses).

MOOCs are free, distributed all over the global community and they favorite social inclusion. On the other hand, MOOCs are affected by high dropout rates, uncertain effective learning outcome, diversity of the learners. (Yuan, 2013). These reasons entail that new approaches are required for designing and delivering MOOCs.

International e-learning Design is changing fast because of the quick development of the e-learning tools, the facility to make live synchronous video and the growing of several knowledge communities for creating, sharing and reviewing learning designs. According to research guidelines, effective modern courses have to:

1) Create engagement
2) Build community
3) Involve users in design process
4) Enable testing and evaluation at scale
5) Create resources to sustain engagement

At school we need for new pedagogies to support the disaggregation of education, characterized by:

1) High quality resources
2) Learning pathways
3) Support
4) Accreditation

The required conditions to take place for active learning are that:

1) Learning experience needs to be designed
2) The teacher and the learners must engage an effective communication
3) Learners must engage in peer communication, providing their own modelling and practice environments to support each other's learning. (Laurilland, 2012)

Method

The OBF project intends to rebuilt traditional didactics of Mathematics and Physics in two classrooms (third year of Scientific Lyceum). Learning Units will be structured according to the Innovative Design guidelines (ANP, 2014).

Innovative Design is the outcome of 100 teachers' work during one and half year. They were chosen by the Italian Associazione Nazionale Presidi (ANP) to take part in a project, financed by Fondazione Telecom Italia, with the goal of finding a teaching method apt to develop real competences in the students. They worked alongside with researchers from Milan Technology University (Politecnico) and with trainers from the business world to rewrite the rules of the Service Design Thinking used in business and adapt it to the school. They developed instruments to take care of creativity, autonomy and responsibility of the students during their learning process. Innovative Design Method is structured in four distinct phases: Exploration, Ideation, Elaboration, Evaluation. During each phase students are requested to diverge (creative time), then to cluster the ideas and finally to converge to solution.

Using Innovative Design to design classroom's activities, learning happens by experiencing stimuli, according to Cognitivist theory, and the students are encouraged to reflect on their actions and to meditate on their discoveries. Learning is also reached adding meaning to, and building on what the students already know, according to Constructionist Theory.

Picture 1- Assets intersections

Picture 1 shows the intersection of the various assets: Innovative Design is developed in suitable learning environments, using BYOD and Web Open Resources.

To be successful the project needs appropriate learning environments where students can easily find assignements, resources and tools to do their collaborative and personal job. These environments must also facilitate collaborations and discussion to develop the relationship competence of the students. Environments gather "who" and "what" learning resources they have access to. According to Connectivism, people, students and teacher, are resources, too!

For all these reasons, a Moodle classroom will be provided as repository of resources, display case, planner, day book, exchange place, that are associated to activities done in the real classroom (blended modality). The activities are structured for a flipped classroom. Flip the classroom means that students study "theory" at home, usually watching videos or internet resources, and do they "homework" at school, using classroom to discuss and perform activities. Learning that occurs in the same context in which it will be used became Situative.

Using the Web at School opens a whole world of opportunity to find resources for the flipped classroom: videos will be picked up from POK - Polimi Open Knowledge (Metid, 2014), TedED, MIT open, Kan Academy, some Youtube Channel of Maths and Physics, and so on.

At last, the project has to confront with the slow growth of technological deployment in italian School: Digital Agenda fails to speed the process. Thus, students will bring their own devices to connect to the Web and perform activities at school. Picture 2 resumes the process phases of each Learning Unit.

Picture 2 – Phases of the learning process

The activities will follow raccomendations of the Service Design thinking (ANP, 2014) to achieve four phases objectives. Single steps are carefully described on the tutorials page of Innovative Design Project (Tutorials, s.d.). On Tab 1 is summarized timetable:

Period	Didactis	Resources	Achievments
Oct/ Dec	Introduction to flipped classroom method	Explore POK resources	Use Open Web resources for studying at home
Jan/Feb	School activities became more complex and needs lateral thinking to solve problems	Web resources and 2.0 tools (mindmeister, Padlet, multimedia …)	Use Web 2.0 tools for studying and resolve problems
Mar/Apr	Development and cooperative learning	Web resources and 2.0 tools	Use Web 2.0 tools for learning
May/Jun	Evaluation, assessment & self evaluation	Web resources and 2.0 tools	Use Web 2.0 tools for evaluation

Tab 1 – Timetable

Discussion and potentialities

Variety of the BYOD devices may be not a trouble, this instead could became a resource, because encourage creative use of Internet and of Web 2.0 instruments.

At present, there is a gradual evolution from e-learning to m-learning (mobile learning). M-learning is more than just mobile e-learning, in fact it may be used anytime & anywhere by the learner and it enables learning in special location, like fieldwork.

As a consequence, Flipped classroom is the perfect way to:

1. Inverting the traditional approach: from lecture-centric to activity-centric
2. More collaborative and problem-based
3. Increasing importance of mobile learning (Conole, 2014)

Moreover students have only to take advantage from availability of mobile devices, that are:

1. Small and compact
2. Personal
3. Capturing sound, video, image
4. New tech, like augmented reality
5. Wearable tech, as Google Glasses (Bird, 2013)

OBF project includes the use of Tweets and QR codes to report about selected activities. For example during the school trip to Ducati Factory, Tweets and QR codes will be used to highlight important aspects of Mechanics. Students will be involved in the selection of apps, production of multimedia materials, planning and realizations of the final product.

Maybe they will decide to registre their own TedED lessons! Anyway students will produce and validate a new Open resource.

Conclusions

Liquid school requires a teaching disruption to support students to achieve competences to survive in liquid modernity. Teachers can't continue using old teaching procedures while employing new technological devices and Web resources. Teaching is changing and becoming new and unexpected: it incorporates learning innovations such as Flipped classroom, Mobile learning, Digital scholarship, Open learning, OER, MOOCs, augmented reality.

"A course is not a book, but a learning journey, led by an expert,
and taken in the company of fellow travelers
on a common quest for knowledge" (Skiba, 2012)

The processes of collaborative doing, thinking and reflecting must be the true objective of the evaluation of the learning (and teaching) because they really show the possibility that the assimilated methods and competences will be used in the future by the students.

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Active aging between social network, video and memory

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Abstract

The paper aims to present an experience not yet been completed to promote and disseminate the culture of active aging, solidarity and cooperation among generations. Through social networking and video technologies, the project aims to recover the know-how of crafts that even if typical of the community, are disappearing, with the aim of achieving a social and working alternative in a perspective of the development of intergenerational relationships in the area.

Keywords*: lifewide learning, active aging, social network, video, memory.*

Introduction

Provided below is an experience, not yet finished, and built by the spin-off Espèro for the project "University of Trades" created by “Cemea” of Taranto together with the University of Bari "Aldo Moro" and the 'University of Salento. The aim of the project is to promote and disseminate the culture of active aging, solidarity and cooperation among generations, is supported by the Department for Family Policies of the Presidency of the Council of Ministers.

In short, this is a project realized in the city of Taranto and that, through the exchange of generations, seeks to recover the know-how of crafts, that even if typical of the community, are disappearing, with the aim of achieving a social and working alternative in a perspective of the development of intergenerational relationships in the area. The trades have been identified: leather, carpentry, agriculture, fishing and mussel farming.

In parallel to the activities of the laboratory, the first of which will be completed the next October 7th, Espèro, through interviews in the field and with the help of the social network Facebook has made videos ad hoc, used as narrative input for organized reflective moments for the course participants.

Theory and Methodology

In the last years the concept of lifelong learning has expanded in all aspects of life, acquiring the sense of learning that affects and relates to the entire life of the subject. Lifelong learning is a essential aspect of the learning society as well as lifewide learning concept, that involving the space dimension, emphasizes that learning is realized in the many experiences of the subject, in many different social contexts and relationships in a specific territory. It is not just limited to education and is not necessarily intentional (Colazzo, 2008).

In this context, lifelong learning becomes a support, or rather an opportunity, for active aging and solidarity among generations. The participation of old peolpe to economic and social life, is a prerequisite for active aging. The participation admits people to retain throughout life the capacity to enter into relations with a changing world. This is even more important in the knowledge society, where the possession of appropriate skills is a prerequisite to ensure individuals employability, social inclusion, active citizenship (Bechina, Krämer, 2013). Without forgetting that intergenerational exchange is not unidirectional (from the elderly to the young), but bi-directional, considering technological information. Digital skills are considered a key competence for lifelong learning: to be able to use information technology in a familiar and critical way, not only for work but also for

communication and leisure (Castoldi, 2009). It should also be noted that recently the widespread use of mobile devices such as smartphones or tablets, has led to a change, both in terms of access and speed of sharing and knowledge construction.

Memory as a pedagogical device is the other assumption at the basis of the Espèro intervention.

Speaking of memory from a pedagogical point of view means that we refer to the concept of pedagogical device we define as structured entirety and only partially visible of rules, objects, rituals, ghosts, methodologies, subjects (Mantegazza, 1998). Looking at education as a mainstay, assembly of those existential conditions, historical - social and discursive, through which emerges one of the possible forms of human subjectivity (Mantegazza, 2001), the pedagogical device can be seen as a powerful frame that designs spaces, rhythms time, spreads knowledge, allows experience, celebrates rituals and creates subjectivity. This concept, expressed from the studies of Raffaele Mantegazza and Riccardo Massa (the first one to introduce in the pedagogical debate Foucault's device concept), is so strictly linked with memory, that we can speak of a "memory device": it marks the rhythm of community memory, manages space, produces and disseminates their speeches, allows and controls memory experience, forms and organizes subjective identities, identities that in this way we can connote not as a permanent feature, but as an emergent behaviour.

Given these premises, designing an intervention for the recovery of the memory of the ancient crafts and for relating old and new generations, it was necessary to use the classic backstage interview, with the holders of know-how and the social network Facebook. We asked young participants about the course and tutors to post photos, videos and reflections on laboratory activities. The online space outside the classroom, has also been designed to offer students and tutors a further opportunity for discussion and interaction. Being aware that sometimes these environments can be distracting (Borgato et al, 2009), we created a closed group.

The experience

The experience realized by Espèro, spin-off University of Salento, in the project “University of Trades”, to recovery the memory of the ancient crafts, in recent months has focused on the manufacture of leather. The area in question is the city of Taranto and surrounding municipalities. The project will end on October 7th, 2014. In this day we will organize a reflective moment, which will finish the course.

Through meetings with those who thought the project “University of Trades”, we have identified eight persons considered holders of the memory of leather workmanship, activity that has concerned the city of Taranto, especially in the 60s and 90s of the last century. Among those who were contacted, five persons gave their willingness to be interviewed. In two cases the interviews were videotaped.

It was decided to use semi-structured interviews. The areas / dimensions to be explored were 3, with related objectives:

1) Practical knowledge: the aim was to remind the interviewed the tools and techniques of the leather processing. The engravings and decorations of leather goods.
2) The memory of the workshop: the aim was to reconstruct the sounds, the smells, the tactile aspects of a leather workshop and the relationship with customers and apprentice, to remind stories or significant episodes of daily life in the workshop.
3) How their own profession was seen by the community: the aim was to reconstruct the role that the craftsman had in his community and how the community looked at the craftsman. Stories or episodes of daily life about relations with neighbour shops, whether resident or other artisans / traders.

At the same time, it was open a closed group on Facebook called the "University of Trades – Leather" where the course participants have posted photos and videos and discussed the experience of the laboratory.

The last meeting will be made on October 7th, 2014. Participants and interviewed witnesses will watch a video about a minute long that will be a narrative input for the last reflective moment. The video will be edited using some important sentences chosen from the interviews and photos, videos and comments posted on the Facebook group. It will be important to observe how the experience of the laboratory and the comparison with those who have previously done this activity will bring reflections on future scenarios of cooperation for alternative social and working in the area. This last aspect, so far, has shyly emerged from the Facebook group, despite some tutors' inputs posted about this aspect. Working leather is a conscious possibility for someone, albeit not on the Taranto area. A lot of young people hope in the opportunity offered by on-line sales, while other participants think that is not useful for their future.

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A protocol for multi-dimensional assessment in university online courses

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Abstract

This paper presents a protocol developed for multi-dimensional assessment of an e-learning experience based on socio-constructivist principles. Firstly, we shortly describe the structure of the e-learning course; secondly, we describe the protocol we have built around it and we explain how it has been used during the courses. We believe our protocol is a useful tool because, on one hand, it reflects the complexity of the pedagogical architecture of the course – which is a mix of diverse teaching models, individual and collaborative activities, learning strategies and a variety of final products students are asked to build. On the other hand, it promotes students' assumption of responsibility and active role, according to socio-constructivist principles. The assessment protocol has been developed around a specific educational model, but it can be flexibly used in similar or simpler courses.

Keywords: assessment, socio-constructivism, higher education, self-assessment

Introduction

As the literature (Clark & Mayer, 2007; Horton, 2006) has widely proved, e-learning enhances its effects when based on socio-constructivist models such as Knowledge Building (Scardamalia & Bereiter, 1994), Community of Learners (Brown & Campione, 1990), Community of Practices (Wenger, 1998). These models imply a complex orchestration of both individual and group activity, which supports students in the construction of many types of artifacts. This complexity calls for the overcome of traditional assessment. Assessment, in fact, should take into account the overall activities, interactions, products and processes of these kind of courses. Moreover, it should sustain students' responsibility and active role, by becoming an integral part of the learning process, shifting from an *assessment of learning* to an *assessment for learning* (Segers, Dochy & Cascallar, 2003).

In this paper, we will present the protocol we have developed, through many years of testing, for a multi-dimensional assessment of e-learning courses based on socio-constructivist principles. The protocol is the result of over ten year of testing. At the conclusion of each course, feedbacks from students, teachers and tutors have been gathered and used to improve the protocol for the subsequent year.

Socio-constructivist e-learning courses

We call the structure of the course based on which the assessment protocol has been developed Blended Collaborative and Constructive Participation model (BCCP) (Ligorio et al, 2010). This model is not conceived as a mere alternation of on- and offline learning, instead as a thoughtful mix of diverse teaching models, individual and collaborative activities, learning strategies and a variety of final products students are asked to build (Ligorio & Sansone, 2009). The BCCP model has been applied to deliver courses on E-Learning at the University of Bari (IT).

The course generally last 15 weeks and its curricular content are structured in five modules of about three weeks each. Students are required to work in small groups (min. 6 – max 10 students). Each module starts with an offline lesson, during which the teacher introduces the learning material and assigns a

research question that guides the activities and one specific educational material (e.g. a book chapter, a journal article, a web-site section, etc.) to each student. During the module, students:

1. study their own material and write individual reviews meant to highlight contents useful to answer the research-question;
2. post their review online;
3. read and comment their group-mates' reviews;
4. discuss about the educational content both via web-forum and face to face, searching for a shared answer to the research question;
5. create collaborative products (conceptual maps, group discussion analysis, critical report);
6. organize their personal e-portfolio, by filling in their self-assessment sheet and selecting the best artifacts they produced during the module;
7. perform some specific roles, based on the Role Taking theory (Topping, 2005).

During the course, students are supported by e-Tutors, namely students who previously have participated in the same course and now play the e-Tutor role as part of their internship.

The protocol

Considering this specific architecture, over the years, we have defined a multi-dimensional assessment protocol (Tab. 1), in order to reflect its complexity and, at the same time, to promote students' assumption of responsibility and active role, according to socio-constructivist principles.

The protocol consists of a grid reporting: group and module identification, individual and collaborative artifacts/processes to be assessed, the owner of the assessment. Some activities, in fact, are assessed by the teacher or by the e-Tutors only, and some others receive a double assessment. For example, if we consider the conceptual map, the teacher assesses the final result as a group product, thus assigning the same score to each group members; e-Tutors assess the contribution each student offer to their construction, by participating to the online activities.

As soon as an activity is completed, the evaluator assigns the score by using a Likert Scale (1: not good at all; 5: excellent).

MODULE 1							
GROUP 1	***Individual artifacts***		***Collaborative artifact***		***Individual processes***	***Collaborative processes***	
	Review	e-Portfolio	Conceptual maps, group discussion analysis, critical report (columns repeated for each collaborative artifact)		Role Taking	Research question discussions	
Evaluator	*Teacher*	*e-Tutors*	*e-Tutors*	*Teacher*	*e-Tutors*	*Teacher*	*e-Tutors*
Student 1							
Student 2							
Student …							
Student N							

Table 1. The protocol assessment grid

The score attribution system has been built from the teacher and the tutors together: first, the teacher provided the e-Tutors with some hints of how to assess each activity (e.g., when to assign 0, 3, etc.); starting from the teacher's suggestions, the e-Tutors gradually defined - for each activity - specific categories to be retrieved and the correspondent score. Categories were identified based on e-Tutor's observations of many courses and students. For example, when assessing the "Research-question discussion", scores are assigned according to these categories: 1=absent participation; 2=few intervention, not focused or useful; 3=few focused/constructive intervention; 4=many focused/constructive intervention; 5= many focused/useful intervention, proactive and collaborative attitude.

At the end of each module, the assessment greed is uploaded on the platform, together with the score system description, and students are invited to read and comment on it by using a dedicated discussion forum. As we can see from table 1, each activity students perform during the course is assessed: in this way, they receive punctual feedback and their capability of self-assessment is modeled. As Segers, Dierick and Dochy (2001) suggested, assessment is important not only at the end of the learning process but also during it, in order to be formative assessment.

Moreover, since collaborative processes and artifacts receive a double assessment, students have the chance to compare their performance with their group-mates, so to better understand the contribution they are giving to the collaborative knowledge building. Finally, the greed helps students to reflect on the distance between their self-assessment and that of the teacher and e-tutors.

By comparing at the greed at the end of each module, students can take notice of their developmental areas and consequently adjust their learning strategies. At the same time, they can recognize their own progress and the progresses of their group.

At the end of the course, the greed provides to the teacher rich information useful for the final assessment.

Although the assessment protocol hereby described has been developed as part of the BCCP model, we believe it can be flexibly used in similar or simpler courses. In fact, it represents a tool able to detect not only the individual level of learning achieved, but also the collaborative knowledge building realized, as well as the social interaction implemented by the students during activities (Ligorio & Cacciamani, 2013).

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Professional training through a "flexible" distance course: the *post-lauream* course in Online Tutoring

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Abstract

The literature proposes different interpretations of the concept of flexible learning. This phrase can, in fact, embrace both the level of the design of a single course and the more complex institutional level. The contribution describes the case of a specializing online course aiming at training professionals in the field of online tutoring. The course suggested two aspects of flexible learning focussing on delivery and approach. Those aspects revealed to be relevant to improve the acquisition of a flexible attitude meant as a student's learning outcome.

Keywords: flexible learning, e-learning, online tutoring

Introduction

Flexible learning is a nowadays widely used to describe a variety of aspects (time, content, approach, delivery, etc.) which are considerably affected by the different teaching/learning scenarios. The literature proposes interpretation keys that range from an individual level (the teacher's attitude in the design of a specific course) to an institutional one (the higher level management of formal instruction).
The present contribution should be seen within the frame of single cases of flexible learning, the description of an e-learning experience of a specializing university course. The "online tutor" program is directed to teachers and educators who wish to acquire the needed requisites to be able to guide and support an online group of students. Flexibility is, thus, meant as a core competence, a learning outcome to be achieved through a course design which aims at offering a variety of inputs at delivery and approach level.
Students' perceptions gathered through their reflection papers and a final questionnaire show their involvement in the different activities organized around various educational approaches and online spaces.

Theoretical background

The phrase "flexible learning" is being addressed in the last years as a vague concept, an umbrella term connected to at least three variables: the teacher, the learner and the institution. Constraints, needs and objectives of each of these actors make flexibility a multifaceted scenario to deal with.
According to Tucker and Morris (2011) the literature covers two broad fields of investigation and theorization: meta-analyses aimed at identifying core aspects of flexibility and case studies which describe how aspects of flexibility are meant in different contexts and experiences. Flexible education can embrace both the level of the design of a single course and the more complex institutional level implying also a budgetary management.
The following flexibility areas: time, content, access requirements, approach, assessment and delivery were analyzed by De Boer and Collis (2005) in a wide project involving nine countries. Gathered data show that, among the above mentioned areas of flexibility, two are operationalisable by teachers: deliver flexibility, and approach flexibility in the sense of a wider space for student centered contributions.
Information and communications technologies (ICTs), as discussed by Palmer (2011, p.5), have a leading role in the development of the concept of flexibility:
"ICTs merit a separate examination as powerful drivers of new modes of flexibility in higher education. It has been noted that ICTs offer potential benefits to both students and teachers, but that such benefits are often presumed to accrue automatically, and that potential downsides, particularly impacts on the nature of teachers' work, are missing from any serious discussion".

Using ICT can be, in fact, a meaningful strategy if teachers frame their use in situated contexts where the instructional design process aims at taking advantage of technology thanks to a proper educational approach.
In the following paragraph an e-learning experience will be described to show a specific rationale of the concept of flexibility which strongly implies an interwoven connection between ICT and pedagogical approaches.

The concept of flexibility in the "Online Tutor" course

The online specialized course "online tutor" has the main goal to train professionals in acquiring skills and competences related to supporting actions and strategies needed in an online teaching/learning environment. The course is currently organized by the Department of Education, Cultural Heritage and Tourism of the University of Macerata (Italy) in collaboration with the University of Camerino and requires a 400 hours of commitment, along about six months, to be distributed among self-study, online activities and final examination.
Since the first editions of the course the online tutor course offered a modeling for e-learning instructional design at University of Macerata (Rossi et al., 2007) proposing a multi-layered structure with a gradual process of involvement of the students through the plurality of strategies and tools in small group work and collective activities.
The use of different online tools resulted to be one of the successful aspects of the course being recognized by students as an effective chance to face themselves with various contexts and related difficulties (Fedeli, 2013; Fedeli et al. 2014).
In this contribution the authors describe a teaching/learning experience in which flexibility is meant as a student's learning outcome as a result of the *post-lauream* course design. The specializing course proposes a set of activities structured around different approaches and run through various online spaces and tools.
In line with the mentioned international researches (De Boer and Collis, 2005; Tucker and Morris, 2011) the course suggested two aspects: delivery and approach flexibility.
For what concerns delivery, being the present contribution based on an online course experience, it offers a wider view of the delivery logistics overcoming the levels highlighted by Normand, & Littlejohn (2006) who focus on the modes of delivery (e.g. e-learning, blended learning). Delivery is here intended as the range of online spaces, tools and communication channels offered within a course whose main environment was the Learning Management System (LMS) Moodle. Flexibility is not just having the opportunity to access the course "anytime, anywhere", but the way the different tools can help the student acquire a wider perspective f his/her learning path.
The opportunity to use different tools and spaces fostering various interaction and communication scenarios is strictly connected with approach flexibility.
Designing activities supported by different approaches, along the three main modules, aimed at supporting students acquire the needed competence of flexibility when facing with the complex profile of the online tutor.
The fostered approaches can be classified into: self-directed learning; teacher-lead learning; collaborative learning and experiential learning.
Teacher-lead learning is the basic approach in the first module where students were required to read and analyze selected documents and then discuss in a collective forum under the guidance of the teachers/tutors of the course**.** This section of the course was felt as reassuring by students as reported in their reflection papers and in a questionnaire filled in after the completion of the course. Since the course rationale proposes a learning path which alternates theoretical inputs to practical the self study and the interactions in forums have been accompanied by collaborative tasks and experiential scenario with simulation activities.
Collaborative and experiential activities were organized around a set of online spaces and tools activating synchronous and asynchronous channels of communications: non-guided forums (that is without fixed threads set by the teacher/tutor), wikis, chats, a whole LMS to administer.
Reflection tasks, which implied the creation of an e-portfolio, were a transversal activity to be run along the whole course duration and which represents a case of self-directed learning approach.

Conclusion

Flexibility constructed around the opportunity for students to use different delivery tools and approaches had the goal to train a professional profile able to face online teaching/learning scenarios where the online tutors needs to adapt himself/herself according to multiple variables (context, audience etc.).

One of the main learning outcomes of the course is, thus, related to the acquisition of the needed self-confidence in approaching new online spaces/environments and handling different digital tools. According to the students' perceptions, collected through an open ended questionnaire, the self-confidence is strictly related to an idea of professionalism in action during the simulation activities where real scenarios required a deep involvement in terms of decision making and strategies' development.

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SES-C4:

FORME E PROCESSI DI CONOSCENZA: RICERCA, USI, PRODUZIONE, GESTIONE

The new frontiers of Digital Collaboration in the professional training of non-teaching staff: from compulsory training for newly hired school leaders to new virtual spaces for learning and communication

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Abstract

The training experience of school leaders represented a starting point for a broader consideration about the social and generative environments for professional practices. The monitoring activities show detailed results about quality and efficiency of collaborative work and tools adopted for digital collaboration task. In addition, the intervention will focus on the spin-off experience made by USR Emilia Romagna and on the research and training laboratories currently under development on that territory. The experience of Emilia Romagna represents a good practice and an example of innovation in training of the non-teaching staff in Italian schools.

Keywords: Digital Collaboration, an e-learning, adult education, community of practice, collaborative learning

1.Introduction

With the advent of the *Knowledge Society* and with the theory known with the term "connectivism" (Siemens, 2006; Downes, 2007), knowledge is transformed into a particular dynamic model of relationship, and learning is transformed into a continuous process of new connection and creation of networks patterns. Knowledge is more and more a social act distributed through the networks. Global connectivity today facilitate Digital collaboration in virtual environments making people protagonists of joint actions and allowing new ways of social interaction (Sorrentino & Pettenati, 2014). The evolution of technological solutions facilitates the design of environments that can promote the genesis of dynamic professional community, made free from the constraints of existing training models and enabling new forms of collective intelligence (Levy , 1996; De Kerckhove, 1997).

In this framework took place the blended learning experienced led by INDIRE[1] since 2001. The INDIRE training programm is aimed at teachers, school leaders, teaching staff and students, and aims to professional development, didactic innovation and continous learning. As part of the training of non-teaching staff, training of new hired school leaders is an example of the evolution of the training model toward collaborative and situated Knowledge foms.Training and internship activities reserved to new hired school leaders, as defined in the Ministry notice of July 13, 2011, were activated during the test year and after the new professional role definitive appointment. In 2012/2013 the Ministry of Education promoted and coordinated a training and internship composed of 75 hours for 830 newly appointed school leaders. In school year 2013/2014 a second contingent of 873 newly hired school

[1] www.indire.it

leaders executives with effect from September 1, 2013, attended the same course of training and internship (Fig. 1).

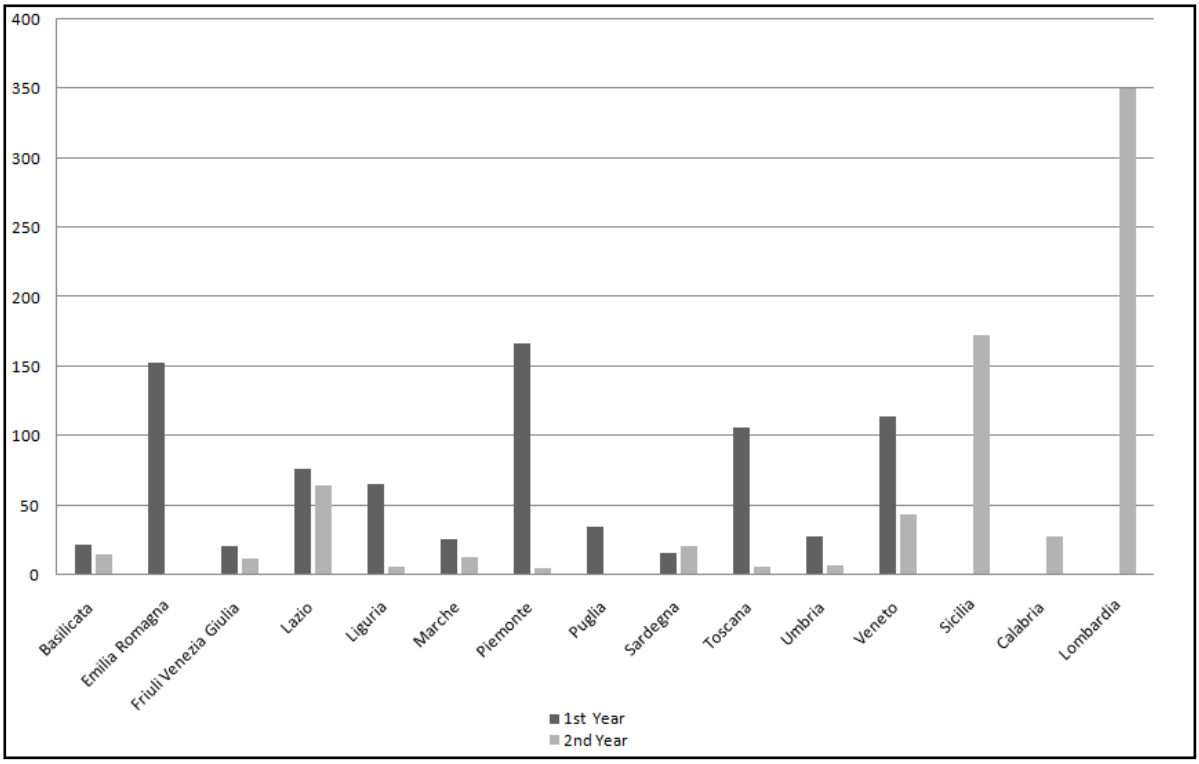

Figure 1 - Global framework of new hired school leaders during two years of training divided by Italian regions

The training realized a process of professional support to new executives. The objective of the training was, in fact, to provide concrete support to the development of management functions and to the resolution of new professional role issues. Finally, the model was studied by INDIRE researches that investigated in detail the quality and effectiveness of the collaborative work done in the virtual classroom also in order to facilitate at local level autogenesis phenomena of embryos of professional practice communities of school leaders.

2. Methodology

2.1 Training model and involved subjects

The training activities promoted by the Ministry of Education adopted a blended model that integrated attendance training opportunities, a period of online learning and a period of internship:

1) *Face to face* meeting, lasting 35 hours. In edition 2012/2013 it took place in three phases (National phase, interregional and regional phase) and it was an opportunity to provide to all the new hired school leaders common guidelines throughout national and regional levels. In the second edition (as 2013-2014) training in attendance has been made during the training initiatives promoted at regional level in order to bring out the specificity of the local context and enhance the relationship between the Regional School Office and school leaders;
2) *Online learning*, lasting 20 hours, was managed by INDIRE through an online e-learning platform managed by e-tutors. In school years 2012/2013, the 30 virtual classes activities were conducted from April to July 2013. In school years 2013/2014, due to logistical and organizational difficulties, online training in 30 classes was concentrated in the months of June

and July 2014.Within the virtual classes two case studies were presented to the students; the first required as output the development of an Improvement plan, the second required the development of a project for the introduction of the ICT in the school. The final work (project work) was a group activity, negotiated and agreed with the help of chat, forums, wikis and blogs.The debate, confrontation, negotiation made learning a cooperative and social process. Crucial in this context, the figure of the e-tutor: animator, guidance and support to the work in the virtual classroom.

3) The *Internship*, lasting 20 hours, actualized in mentoring and was aimed at consolidating the skills related to the management function in the reference area.

2.2 The role of INDIRE and the online environment

The role of INDIRE within the project was to provide the connection point between the initiatives put in place in the various training sessions (training in attendance at regional level, online activities carried out with the support of e-tutors and the internship made with mentoring) thus ensuring the overall readability of the training.For this purpose, the e-learning platform designed and implemented by INDIRE provided to all the actors involved in the educational process (students, e-tutor, mentor and referents USR[2]), a control panel to monitor all online activities.
The training environment designed by INDIRE wanted to promote:

1) *self-employment* and self-training of the students through a library of digital content distributed on five thematic areas (Legitimacy and management, Safety, Quality and effectiveness of education and training, Equity, Social cohesion and active citizenship, Transforming the learning environment);
2) moments of *interaction* and discussion between students and experts through thematic forums;
3) *collaborative work* in virtual classes moderated from e-tutor.

3. Mentoring phases and results

The two editions of the training program were monitored with mixed method (quantitative and qualitative). The research used various survey tools: students satisfaction questionnaires, e-tutor addressed questionnaires relating to their activity in the virtual classroom, intermediate and final e-tutor reports, tracking of the activities in virtual classroom.

3.1 Step One: the training

A first phase of monitoring, common to the two years of the project, was conducted with the help of satisfaction questionnaires completed anonymously by the students during the last month of online training (July 2013 for the first edition, July 2014 for the second edition). The questionnaire was constructed by grouping the 44 closed-ended questions in the seven areas of inquiry so as to touch each phase of training. The rating scale was a 4 steps Likert (1 low - 4 high). In addition, a spare field within each area allowed the participants to freely express personal observations.The questionnaires completed by the students during 2012/2013 were 611 (73.6% of total students), while those compiled in the year 2013-2014 were 640 (89.3% of total students).The quantitative data obtained from the questionnaires were analyzed using statistical techniques while the content analysis of free fields has been carried out through a grid with indicators. Participants were allowed to bring forward an impact analysis for the entire training process.

[2] Ufficio Scolastico Regionale

The students have expressed particular appreciation for the relationship established with the two figures supporting the training course: e-tutor and mentor.
In both the editions the availability, the support and the expertise of the e-tutors proven to be essential. In particular in the free fields emerged the importance of its role as facilitator and emotional support in a training program containing many critical issues related to timing and way of performing. An analysis of the satisfaction questionnaires showed that the most appreciated aspect of his activity was the "Support in enabling openness, respectful, collaborative environment" with a high percentage of the response "Totally" both in the first year (56%) than in the second year of the project (64%).
Even more appreciated was the mentoring. High satisfaction percentages concern to "Ability to establish a relationship of trust" ("totally": 85% in the first year, 71% in the second), the "Emotional support in conflict management, in taking charge of risk and responsibility of the role "("totally": 71% in the first year, 59% in the second), the" stimulus for the creation of networks between managers and networks between schools "("totally ": 59% in the first year, 48% in the second). Numerous comments in the free field describe the relationship with the mentor as the more positive experience, effective and profitable throughout the educational path. In particular, the new hired school leaders described the availability and timely help offered in every step of the way:

"The mentor has been by my side during the whole training process with availability, openness, professionalism and spirit of cooperation. Its action has been extremely useful for my training . I am sure that the established relationship will continue also in the future. "

Moreover, in the free fields are reported collegial meetings with mentor and new hired school leaders of neighboring schools made with dynamics very close to those of the communities of professional practices.
This phenomenon is confirmed by answers to the question concerning the "stimulus for the growth of a community of professional practices." The comparison of the two years shows that the percentage of the response "Enough" has remained unchanged (54%) but the options and "Not at all" and "Few" decreased (from 3% to 1% and 20% to 11%) while increased the percentage of the "Totally" (from 23% to 34%) (Fig. 2). Finally, explanatories are the answers to the questions concerning "degree of satisfaction about reached results at the end of work in the virtual classroom." The percentage of responses "Totally" has seen an increase from one edition to another. It increased from 18% to 32% from the first edition tothe second. Note the decreasing of the "Few" (from 22% to 11%) (Fig. 2).

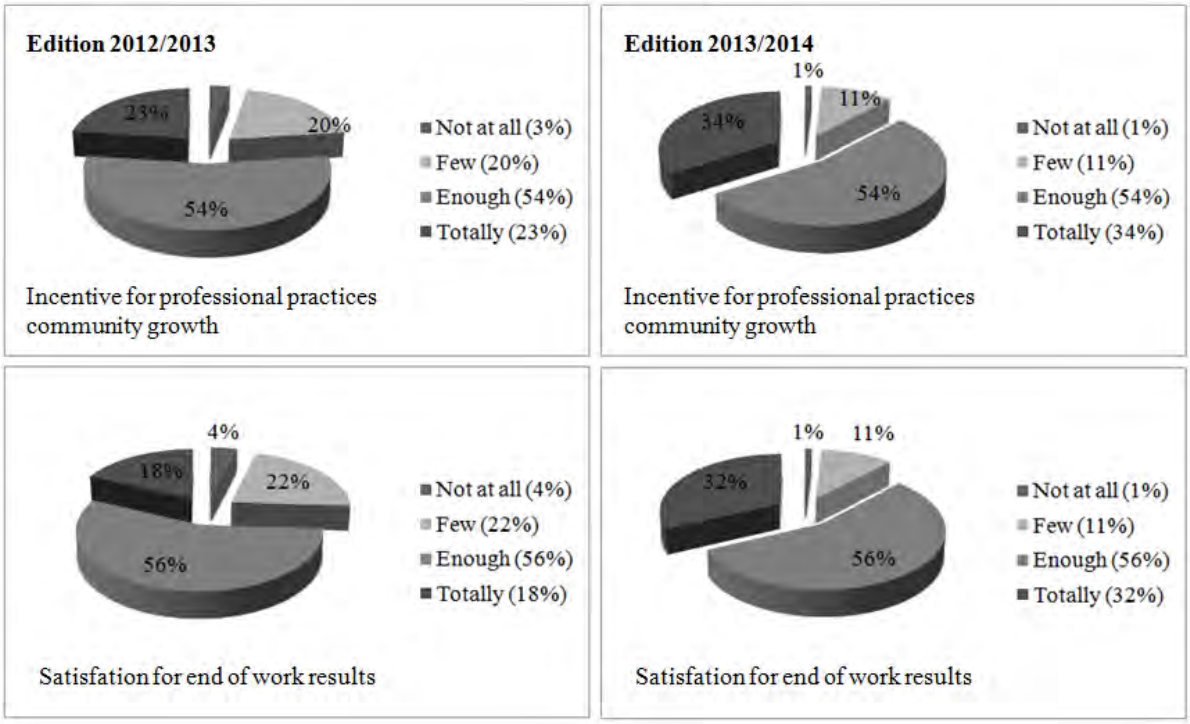

Figure 2 - Analysis of students questionnaire questions

3. 2 Step Two: collaborative work in the virtual classroom

A second phase of monitoring, limited to the first year of the project, wanted to investigate aspects of the educational model related to the collaborative work done in the 30 virtual classrooms. For the selection of the objectives of the survey were used Engström's triangles (CNIPA, 2007) used to find relationships a) Subject -Community-Roles b) Subject-Community-Content. Very interesting results have emerged regarding the ways of interaction between learners and between learners and the teacher, and the cognitive processes activated by the participants during the activities. In particular, the way of interaction between learners and between learners and the teacher was investigated with sociometric analysis that allowed us to reconstruct the 'interaction network' activated between the participants in the virtual classroom. The analysis has considered the number of communication exchanges between different participants and took advantage both of platform tracking data both of the tutor's questionnaire. The seven questions making up the tutor's questionnaire have been built on the following indicators: amplitude participatory, proactivity, shared knowledge, social grounding, membership, equity participatory, cognitive and metacognitive awareness. The collected data have been analyzed using statistical techniques. These data have provided a first image of interactional dynamics that have been activated in 30 virtual classrooms (Fig. 3).

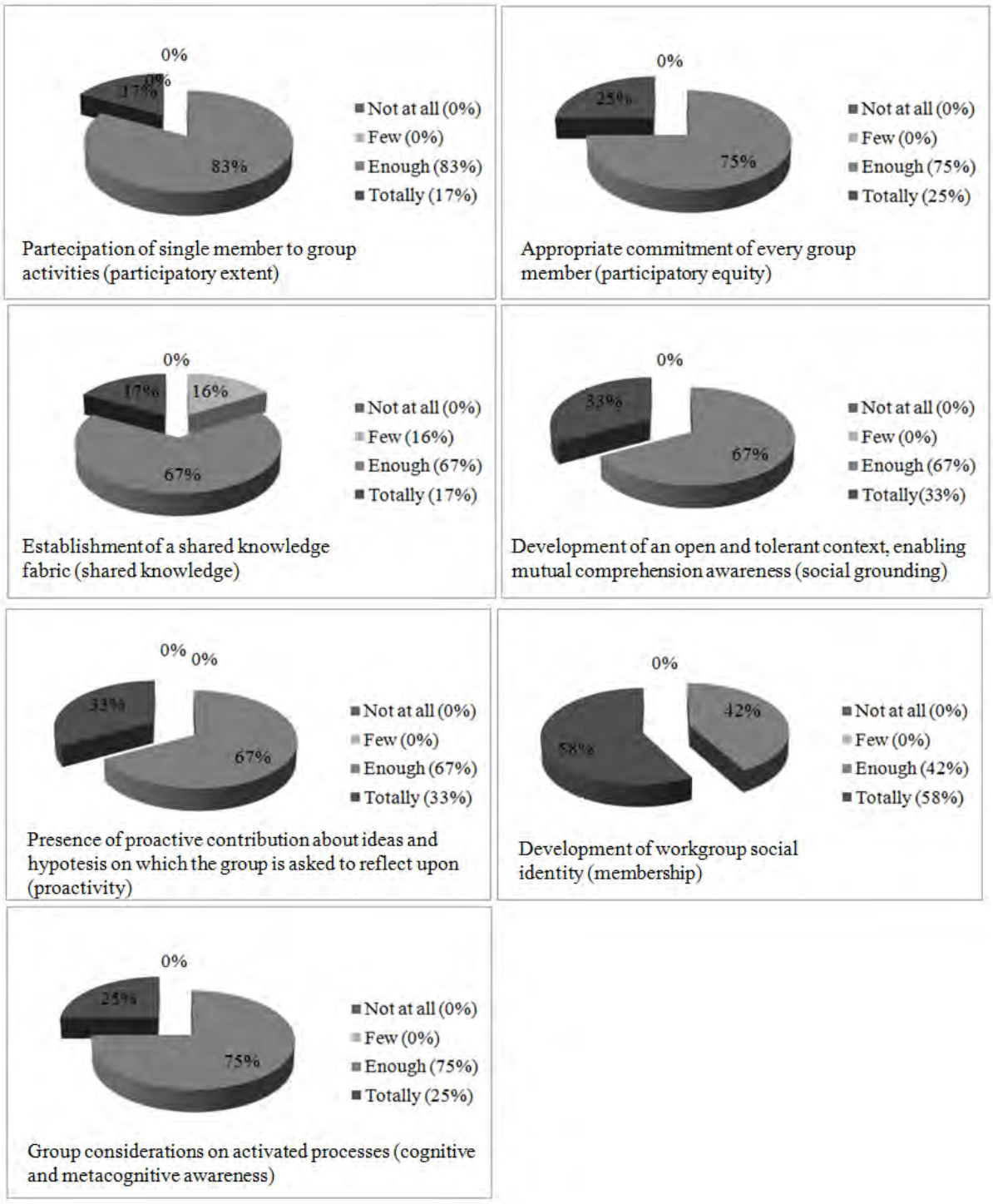

Figure 3 - Analysis of e-tutors questionnaire questions (2012/2013)

The results of the e-tutor questionnaire were confirmed by a qualitative analysis of a virtual classroom behavior through the study of the post of e-tutors and learners and through synchronous meeting recordings. By identifying dialogic symbols (thinking type), to each post is assigned a label describing the function in the context of the discussion and therefore the cognitive dimension. The framework outlined a clear picture of the cognitive processes activated by the participants during the activities in the virtual classroom, in the group dynamics and in the socialization process. In particular, it has been

possible to identify the cognitive quality of e-tutors interventions and its contribution in the realization of the final product (Fig. 4)

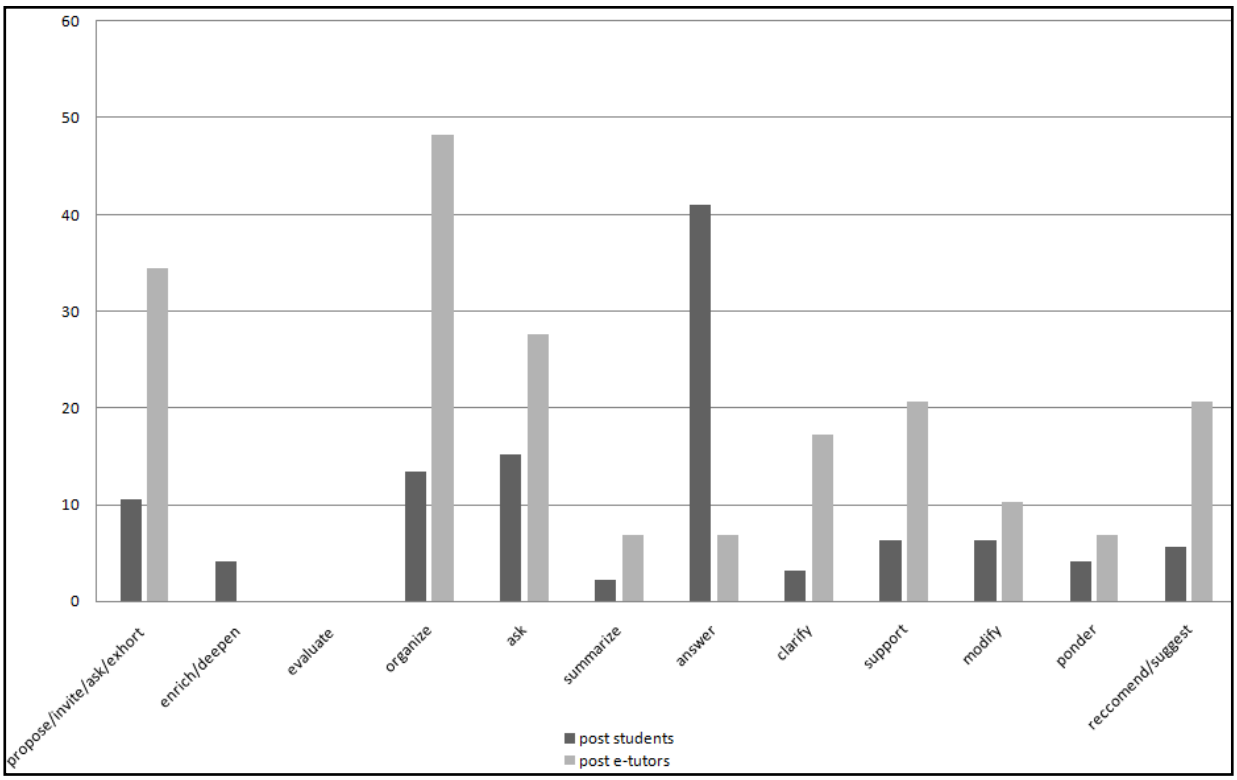

Figure 4 - Analysis of forum e-tutors and students occurrences

4. The experience of USR Emilia Romagna: retrieving the local community of practice

USR Emilia Romagna, 5th office, in the context of 2012/2013 edition of the training project, developed a spin-off experience proving to be a good practice and a model to be adapted and disseminated to other Italian regions. Emilia Romagna choose to privilege the system and network logic promoting collaborative dynamics in a professional community comparing on the profile of the school leaders, starting from the analysis of real and concrete issues, seeking solutions and models to be applied, adapted, tested, evaluated. Within the training project, USR role was to organize training in attendance, select the mentors and coordinate their activities in the area. Many USR chosen to distribute 20 hours in semi-residential or residential training seminars. Otherwise, USR Emilia Romagna has organized half-day seminars, held on a monthly basis. The number of hours offered with this schedule was superior{ to the ministerial guidelines (36 hours vs. 20 expected) allowing to the 152 Emilia Romagna newly hired school leaders in training to investigate on many topics of interest and, at the same time, the attainment of the total hours required even in the case of absences at some of the scheduled meetings. The definition of the program, as well as that of the contents, has been carefully planned by a project team constituted by USR representatives for the training of school leaders, school leaders of proven experience, representatives of the mentor and of newly hired school leaders. In addition, the training offer was made through a survey of needs by structured questionnaire. The topics covered during the meetings characterized for the variety of subjects addressed: from school self-audit to the development of an Improvement plan, from the Digital Agenda to the activity of negotiation, from school safety to management control and social budget.The program has sought a balance between "contents" and managerial functions with the aim of forming a high and strategic leadership

profile. For this purpose, has been fundamental the evidence of good practices of school leaders shown in the program of the meetings.
Particular attention has been paid to the mentoring activities. The 38 Emilia Romagna's mentors have been involved in operational meetings at the regional level and have been invited to some of the training sessions aimed at new school leaders in order to avoid mismatches in the information and in the conceptual plant proposed for new hires.The mentoring activities, which was carried out both locally and remotely, followed common operational directions.The questions of new hired school leaders, related to daily emergencies, have been translated into emblematic cases in order to carry on shared considerations useful for identify transferable intervention protocols, adaptable in context and used in self-help. The final part of the meetings was dedicated to on-demand support("question time") on contingent issues and emergencies. The activity of remote mentoring is realized by individual and group e-mail continuous contact about cases and emergencies. At the end of the activity, has been requested to mentors a report on the course, based on some common indicators prepared by the regional staff. In particular, besides the reporting of meetings and hours done and the list of analysed cases, the report has provided an evaluation phase shared by new hired school leaders and mentor about application of models developed in relation to the chosen themes.

In continuity with initiatives started for the new hired school leaders, USR Emilia Romagna developed a training plan for the school year 2013/2014, aimed at 441 school leaders servicing in that area.The training plan, currently underway, will be completed in December 2014. The training plan, modeled on the training of the new school leaders, includes 25 hours of training with a certificate of attendance: 10 hours locally (regional /provincial seminars), 10 hours online (groups/laboratories for research-training) and 5 hours for the production of materials.Interesting is the experience of the 15 research-training laboratories associating schools and leaders in research, training and documentation, thereby promoting network culture.The identification of research topics were chosen on the basis of a map of themes developed by qualified region representatives of school leaders, integrated by representatives and professional associations. Each research-training group consists of 10-20 participants working in self-management. In each group a school leader is appointed as coordinator and is responsible for ensuring the application of a protocol for the regular development of training activities.In addition, coordinators remain in constant connection with each other and with the regional staff for ongoing reporting of the activities. Each group has a budget for expertise acquisition (consulting) and to enrich the educational offer; for this purpose, USR has activated relation agreements with universities, foundations, professional associations (Department of Education Science, University of Bologna, Emilia-Romagna AICQ, Fondazione Compagnia S. Paolo, Politecnico di Milano).Laboratories' working methodology provided an turnover between moments of meeting in attendance, online job done with services offered by google drive "homework" and final processing of materials. A system of referees allowed the final validation of the produced materials in view of their public dissemination for also the purpose of their use in subsequent training initiatives.

5. Recommendations and future developments

International studies (Association TreeLLLe, 2013) confirmed the deep interdependence between the professional quality of the school leaders and the school quality. Effectiveness and efficiency of a school are, in fact, deeply linked to the figure of the leadership and to the influence it exercise indirectly on learning and on professional development of teachers.That of the school leaders, then, is a professionality on which you need to invest with appropriate initial and in-service training courses.
Unlike in other European countries, the period of testing and initial training of the new manager is little more than a formality and is carried out in the ways we have described, during the full exercise of the management functions.The new school leader is not, therefore, put in a position to learn the profession in a protected situation, as a trainee or vicar of an effective school leader. In addition, the period of the mentoring, considered by new hired school leader as the most important phase of their training, runs out at the end of the test year.

In the context of the training of new hired school leaders and new employees over the years 2012/2013 and 2013/2014, the e-learning environment created by INDIRE attempted to activate within the virtual classes moments of research and experimentation on real issues extrapolated from the professional practice of school leaders in order to activate dynamics of *problem-based learning* that could have a positive impact within their work context.
The monitoring results highlighted, however, that the work in the virtual classroom, although appreciated, was seen as an experience not integrated into the learning path and concentrated in a temporal space insufficient to complete the formal expected tasks. Moreover, in the questionnaires free fields, the participants complained about the lack of real meetings as support to the work in the virtual classroom and stated that they spontaneously met when neighbours.
In response to these needs, the initiative of USR Emilia Romagna is trying to give continuity to the training of the new hired school leaders by associating schools and leaders in research, training and documentation.The experimented training model can be easily replicable in other regions also in view of the third year of the project for new hired school leaders. For this purpose It will be necessary to support the research-training laboratories with a new online social environment characterized by openness and flexibility.
On the model of informal social networks such as facebook and similar, which in recent years hosted groups of newly hired school leaders engaged with the new professional role, our research will approach on the testing of new virtual spaces for learning and communication allowing users to interact and collaborate, activating forms of *informal networking* (Ranieri, Manca 2013).
The experimentation will be directed towards models allowing the distribution of a dynamic, mutant, decentralized, circular knowledge, free from time and space concepts. Moreover, and especially in view of a permanent dimension of the school leaders training, the model will encourage the creation of new connections and it will be generative of communities of professional practices
This will be, in the coming years, a priority for all the stakeholders (Ministry of Education, INDIRE, USR) involved in the process of supporting the new profession of school leaders towards La Buona Scuola vision.

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Mobile devices as factor for the development of motivation and concentration in the upper secondary school. The students' and parents' point of view

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Abstract

This case study is part of a research conducted in one upper secondary school. The study was aimed at analyzing the role of mobile devices for the development of student's learning strategies. The case study, moreover, has explored the development of motivation and concentration through the use of mobile devices at school, in the classroom, and at home. In particular, the participants were 27 students and 11 parents. The data collection has been carried out through a focus group with the pupils and an online questionnaire administered to the parents. The data analysis was performed using a software for the text analysis (T-LAB ver. 7.2). We did the following qualitative analyses: co-word analysis; word associations; cluster analysis.

Keywords: mobile devices, learning strategies, motivation, concentration, parents

Introduction

Recently, the schools were funded (DL 104/2013) in order to promote the integration of digital technologies and mobile devices in education. This fact has determinated great attention and reflection in the educational institutions. The introduction of tablet devices at school has led towards a new evolution of the learning environment in a digital and technological perspective and has fostered new instructional practices and methods, such as flipped lessons (Sams & Bergmann, 2013) and Episodes of Situated Learning (EAS) (Rivoltella, 2013). These changes tend to modify both teaching and student learning methods. For these reasons, our research was aimed at monitoring in which way mobile devices, in particular tablets, have been introduced in an upper Ligurian secondary school, in order to highlight, in particular, whether mobile devices have affected the students' motivation and concentration.

Theoretical framework

The use of mobile devices at school is based on the concepts of digital literacies (Gillen & Barton, 2009), multiliteracies and transliteracies (Cazden et al., 1996), ubiquitous learning (Cope & Kalantzis, 2009) and cloud computing (Cope & Kalantzis, 2012). The international scientific literature underlines some potential benefits which are directed towards the development of inquiry and hypothesis formation activities (Ahmed & Parsons, 2013); collaboration and argumentation activities (Laru, 2012; Laru et al., 2012); problem-solving and problem-based learning activities (Sánchez & Olivares, 2011); collaboration in classroom to improve face-to-face collaborative learning activities (Echeverría et al., 2011). The use of tablet devices at school should increase also the students' motivation and concentration (Keane et al., 2013; Kalz et al., 2014). In fact, tablet devices have applications that can encourage interaction, collaboration and community building in presence and online. Each student becomes, at the same time, user and author of digital materials. This involvement should foster a bigger motivation in facing the instructional tasks. In addition, the mobile devices tend to connect the informal contexts with the formal ones (usually perceived as distant from students) (Jahnke, 2013). «Sharples et al. (2009) argue, that the evaluation of mobile learning systems and applications often show that learners, children and adults alike, enjoy using mobile devices for learning and report increased motivation as a result of this use' (p. 10). Tiene and Luft (2001) argue that it is common in any technology-rich learning context for students to be motivated and focused because of the tools themselves and the learning opportunities they facilitate. However, the stimulation of technology or technology rich contexts alone are not sufficient conditions for ensuring motivation and focus among

learners (Looi et al., 2009)» (Laru, 2012, p. 34).

For these reasons, it is appropriate to emphasize also the pitfalls of the use of mobile devices. The international literature highlights some issues related to technical and practical difficulties, including small screens and limited input options (Ting, 2012); some limits in argumentation activities (Laru et al., 2012); some limits regarding the mobile devices acceptance affected by the role of the social influence (parents and peers) and the expectation of having a more enjoyable learning experience (Montrieux et al., 2013); the comparison between mobile devices and computers or printed books linked to the weak sides of tablets, mainly problems with internet connection and compatibility with other devices (Seisto et al., 2011); finally, the potential carelessness during the lessons caused by playing with apps, surfing on web, chatting, etc. (Schnackenberg, 2013).

Research design

Research aims and questions

The research has been carried out in an upper Ligurian secondary school. The study was aimed at analysing the role of mobile devices for the development of pupils' motivation and concentration. In addition, we wanted to analyse whether the mobile devices can affect the positive attitude of pupils towards the school and, finally, whether the mobile devices can support positively the interaction among pupils and parents at home. This paper is focused on the first two research questions, related to the development of motivation and concentration.

Research methodology

The research design was based on two phases. The first one was focused on teachers' training in order to use the mobile devices in their classes, suggesting the suitable apps to carry out several teaching strategies, like flipped lessons and collaborative learning. The latter provided a data collection regarding the research aims. We selected the participants (pupils and parents) in a 1st grade of an Italian upper secondary school, where the teachers carried out a project about the integration of tablet mobile devices at school. In particular, the participants were: 27 pupils and 11 parents.

The data collection has been carried out through a focus group with the pupils and an online questionnaire administered to the parents. The focus group was structured on the basis of following leading questions:

1) Do the tablet devices make you want to study? (focus: motivation)
2) Do the tablet devices help you in improving your concentration while you are studying at home. Or do they distract you? (focus: concentration)
3) Have tablet devices improved or worsened your idea of school? (focus: attitude toward the school)
4) Do the tablet devices promote interaction with your parents while you are studying at home? (relationship with parents)

The questionnaires' questions were structured as follows:

1) In your opinion, do the tablet devices motivate your son/daughter to study?
2) In your opinion, do the tablet devices encourage attention and concentration in your son/daughter while he/she is studying?
3) In your opinion, does your son/daughter use the tablet in order to search for information in internet so that he can study more thoroughly?
4) In your opinion, how does your son/daughter understand that the information he/she finds in internet to study are correct?
5) In your opinion, do the tablet devices help your son/daughter in developing a suitable study method?
6) In your opinion, have the tablet devices increased the possibilities of interaction with your

son/daughter while he/she is studying at home (checking homework, research together, etc.).?

7) In your opinion, do the tablet devices support the possibility of dialogue with teachers and, in general, the information exchange between school and family?

Qualitative data analisys

The data analysis has been carried out through a software for the text analysis (T-LAB ver. 7.2). We carried out the following qualitative analyses: co-word and cluster analysis. The co-word analysis (also named mapping) has been done through the factor analysis with Sammon method. This method displays the used words within Cartesian axes to underline the semantic polarizations. The words are spread through the axes on the basis of their meaning and their position within the text (proximity/distance). Instead, the cluster analysis examines less words than the previous one, so we can aggregate them, not only from a semantic point of view and on the basis of their position, but also from a logic point of view and on the basis of the sentence structure.

The focus group

The figure 1 shows that the students accepted the use of tablet according two different perspectives (co-word analysis method Sammon MDS: STRESS = 0.1030). Firstly, the tablet devices improved the studying organization of pupils and increased the motivation in doing their homework. Students are stimulated and reassured because they can use a rich and broad source of information, materials and contents. Secondly, students, as parents, understand that the same wealth of materials present in tablet could be an obstacle to the concentration and divert attention.

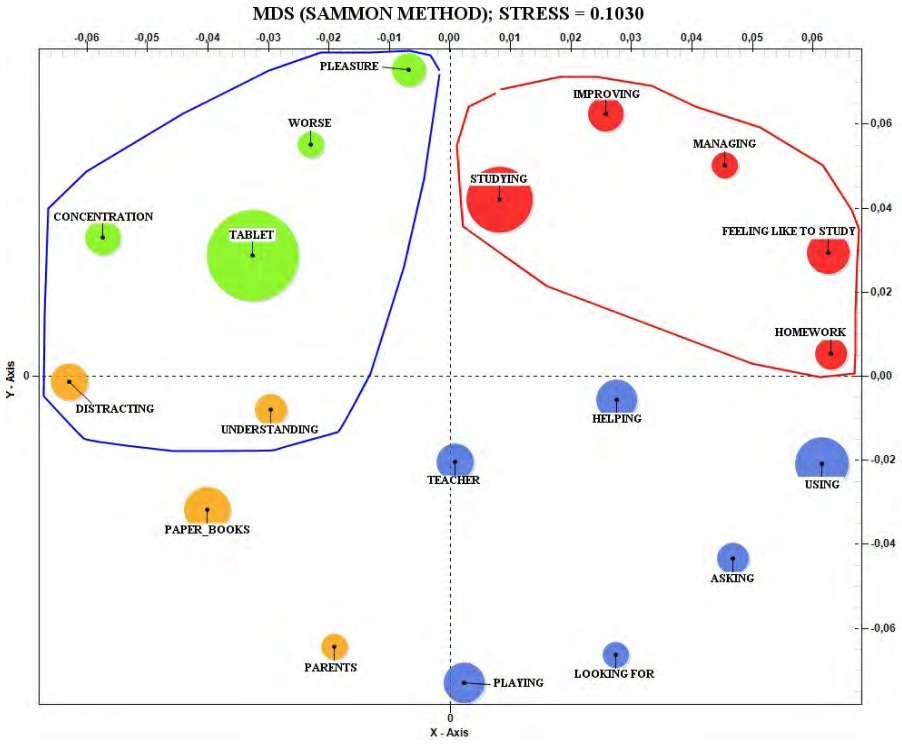

Figure 1 – Co-word analysis of focus groups.

The cluster analysis brings out three clusters (as shown in table 1) but, in order to respond to the first two research questions, only CLUSTER 1 and 3 are significant. The first cluster has been called <distraction/concentration>. We report some interesting sentences, said by the students:

- The tablet device is more convenient, but you can distract with internet.
- To me, it's positive, sometimes we don't concentrate our efforts but the tablet can help us to increase our studying motivation, if we learn to use it in the right way...it's good.

- Although sometimes I'm concentrate, if you don't want, it doesn't matter if you have tablet or not, even if we had only the book, I couldn't be attentive.
- In my opinion, the motivation is improved, I've always liked to study, then so is better.
- If I have to study, I study and...that's all. The tablet can't increase or decrease your motivation. If you get distracted, the tablet can't perform a miracle.

The cluster 3 has been called <taking pleasure in learning>. We report some interesting sentences, said by the students:

- To me, the concentration is improved because I like studying...so for, it's much better.
- I like studying and when I can't understand a topic, I try again until I understand...but I used to do so also before havinh the tablet, maybe the tablet improved this attitude.
- The tablet doesn't increase or decrease the motivation...if anyone likes studying, he likes studying also with the tablet.

From the students' point of view, these sentences suggest us that, on the one hand, some students have increased thier motivation and concentration but, on the other hand, some students underline that the tablet devices affect positively the motivation and the concentration of students who are already motivated to study. This is an important point for the discussion.

CLUSTER	%
1 – distraction/concentration	29,82
2 – helping and using	36,84
3 – taking pleasure in learning	33,34

Table 1 – Clusters percentage concerning focus groups.

The questionnaire for parents

The co-word analysis (MDS method Sammon: STRESS = 0.0998) clarifies the position of parents who have two different points of view. They perceive that the mobile devices can represent a potential factor of distraction (see the orange words in figure 2 and the cluster 1 in figure 3), especially in comparison with the textbook.

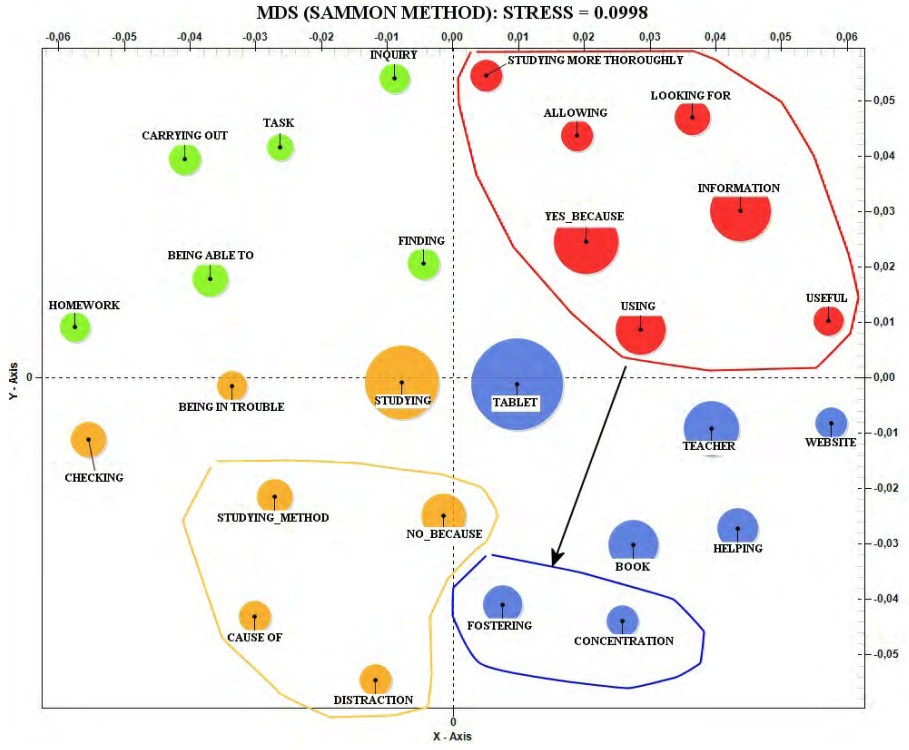

Figure 2 – Co-word analysis of questionnaires.

However, the tablet devices can be very effective for the concentration, if they are well used and the activities are led and supported by the teachers. The tablet devices are a tool that allows us to look for and find useful information and, consequently, to study more thoroughly. Another critical element is that parents are worried about not being able to check the homework of their sons/daughters (see cluster 4).

By the analysis of the corpus of answers, we could find 4 clusters.

CLUSTER	%
1 - distraction	32,20
2 – being in trouble in checking homework	20,34
3 – looking for and finding useful information	18,64
4 – helping and motivation	28,82

Table 2 – Clusters percentage concerning the questionnaire for parents.

- CLUSTER 1 - distraction (example: “No, because it is a source of distraction” and “the tablet has less motivated my son to study because it causes distraction”);
- CLUSTER 2 - being in trouble in checking homework (example: “I have trouble in controlling the homework of my son because I’m not able to use the tablet”);
- CLUSTER 3 - looking for and finding useful information (example: “tablet supports concentration, as it includes all the information they need without having to search for books or other instruments";
- CLUSTER 4 - helping and motivation (example: “the teacher should lead them to use the tablet in order to facilitate the study and not just to browse books” and “the tablet really helps people who already have their own method of study. Makes it faster the acquisition of information”.

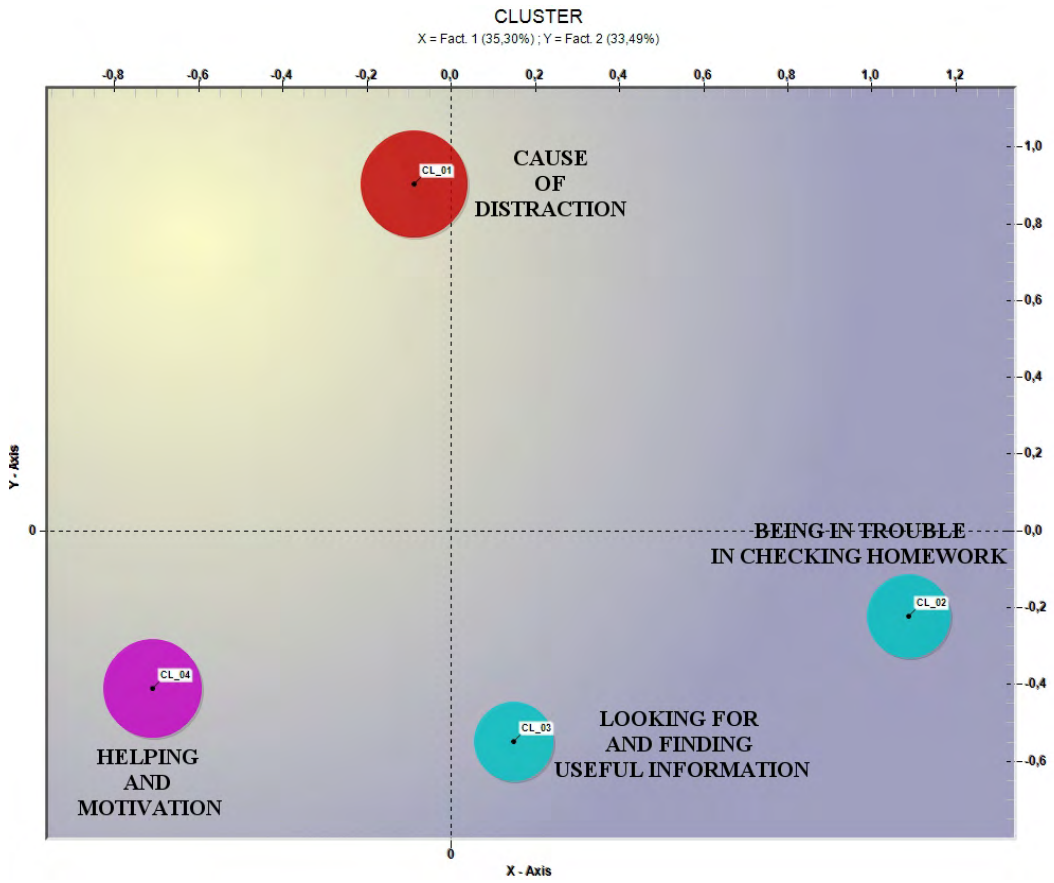

Figure 3 – Clusters of questionnaires.

Discussion, findings and conclusions

The data analyses allow us to state some important issues. Firstly, the upper secondary students show that the mobile devices improved and fostered their motivation to study. The red word group, included into figure 1, indicates clearly that mobile devices help students in managing the homework, increasing their motivation to study. However, they are aware of the possibility of distraction caused by the mobile devices. The words grouped into the blue ring show that, sometimes, the concentration can decrease because of the possibility to play, download music and video or chatting with friends and schoolmates. In any case, the fact that the students realize that their concentration levels can change suddenly is positive form a metacognitive point of view.

In addition, some students underline that the tablet devices affect positively the motivation and the concentration of students who are already motivated to study. Probably, it depends on the teaching styles. Some students stress that tablet devices are not “well” used. The term “well” has been put in inverted commas because it is the key term. If the teachers use the usual teaching methods with the tablet devices, the motivation tends to increase only for students who are already motivated and have already a good studying method. In order to increase the motivation (and consequently, the studying method) of students who are not motivated, the teachers have to try to implement some teaching methods focused on looking for information to create digital materials built and shared with the students. In other words, the teaching methods have to be inspired to the affordances of mobile devices: information, creation, manipulation of materials, resource sharing.

So, our findings are, on the one hand, positive because the mobile devices are a factor for the development of motivation. On the other hand, the teachers must check the concentration, setting up suitable tasks and homework.

The parents present a similar situation. The blue words, included into figure 2, show that the mobile devices are a key factor for fostering concentration. The parents, observing their sons/daughters, state that their are more concentrated in carrying out the homework. In particular, the parents state that the mobile devices proved useful, especially in looking for and finding information in internet in order to study more thoroughly (see the red words in figure 2). However, the parents are afraid that mobile devices do not help their sons/daughters in improving their study methods because the risks of distraction are too high.

The cluster analysis confirms this tendency. As shown in figure 3, the clusters 3 and 4 indicate that mobile devices can support the motivation and, again, good information retrieval processes. On the other hand, the cluster 1 stresses the possibility of distraction, revealing fear by the parents regarding the mobile devices. This fear is motivated also by the fact that the parents are not able to check the homework (cluster 2). They are in trouble because they are not able to manage the device. For this reason, they need to be supported by teachers and their own sons/daughters in learning how to use the mobile devices.

To conclude, the introduction of mobile devices at school is an educational operation that involves teachers, students and parents. Consequently, the school must plan meetings and educational activities where teachers, students and parents can share ideas, infomation and how to use this small but powerful device.

Connections with higher education contexts

Even if this research has been carried out in an upper secondary school, the findings can suggest us the ways in order to arrange future studies in higher education contexts and set up educational activities at university. In particular, as we mentioned before, if the teachers use the usual teaching methods with the tablet devices, the motivation tends to increase only for students who are already motivated and have already a good studying method. Also at university level, the teaching methods should not follow the usual ways in managing the lectures, but the professors should support and encourage the students in creating digital materials in an individual and a collaborative way. The guidelines for materials'

creation should be based on the information retrieval and resource sharing, in order to implement the students' studying methods and the interaction among the students.

Of course, our intention is to confirm these results with new studies which will be carried out at university level.

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A systemic approach to a flexible higher education

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(Forme e processi di conoscenza: ricerca, usi, produzione, gestione)

Abstract

Adopting the approach of the pedagogical problematicism, we will attempt to analyze critically, in epigenetics key, the assumption of the title (openness and flexibility of the higher education system) examining the conditions from which it originates, with the specific intent of deducing from it the direction of sense by impressing to knowledge processes. We will experiment, for that purpose, a method of analysis of theoretical research, thought for concepts with a high index of complexity, testing it in the first instance on the concept of flexibility, taken as an emblem of the difficulty of the researcher, as well as the student, to orient himself between piecemeal and fragmented information. It will asses, as a result, the transferability to a second-level curriculum, a reconceptualization of the educational task thought to support a constant and vivifyng flexibility of thought, giving shape to a didactis and a way to conceive environments congenial to it.

Keywords: flexibility, complexity, ill-structured domains, methodology, curriculum

Introduction

The growing demand for flexibility in higher education brings with it an explicit request for attribution of meaning: what serves, in summary, prior to any choice, is to set ourselves 'further on from' each 'beyond' (as well as e-learning) and draw upon a critical position, which translates the tension to understand reality in a speculative effort aimed primarily at looking for the genesis of the need for flexibility, to which is attributed, then, a regulative function of the way of thinking about university teaching for the future. It will adopt, for the pourpose, an approach sensitive to the request suggested by the systemics for situations of high complexity index, applied (in an innovative way) in this study to conceptual complexity.

The main scope of the mind during the cognitive process is to make the flow of information cognitively functional for reuse. In order to succeed in this task, subjects simplify what is perceived in schemes of abstraction: it is experience which reveal the "resistence" of the mental model, to enshrine, that is, whether it is adequate to explain or predict phenomena. Each schema of abstraction is subject to the constraint of internal coherence. Maintain internally consistent domains related to initial knowledge (which are characterized by the generality of the approach to the subject) or to phenomena with a limited degree of complexity is certainly simple: because of this characteristic, with a strong connotative power, they are denominated well-structured knowledge domains. However, if one goes further the initial acquisition of the knowledge in a content area towards the advanced competence levels of the same, we witness a significant evolution of the domains: faced with situations which imply the simultaneous, interactive involvement of multiple and extensive conceptual structures (each of which is, however, in itself complex) or is to operate within specific scientific areas constitutively complex which are, however, applied to disorder and complexity of the reality (such as medicine, history and literature, but also to knowledge domains, by their nature better structured, such as mathematics and engineering), to ensure the internal consistency become certainly difficult, if not impossible. We refer to them by denominating them complex and ill-structured domains (Coulson, Feltovich, Spiro, 1989).

Read in evolutionary key, apprenditive situations become complex during that segment of time that elapses between the initial knowledge and the achievement of the competence in a given discipline, a step that puts like learning goals the understanding of important elements of conceptual complexity, the use of the acquired concepts for reasoning and inferences, the application of conceptual knowledge to new and unexpected situations and, therefore, transversely to them, the ability to implement flexible cognitive behaviors. The prolonged and targeted observation of students in every grade has highlighted, in particular, as in most cases, following the instructional intervention occur a mutation inherent only marginal aspects of representations,

which does not put to use the radical changes necessary to the understanding of complex concepts (Giunta, 2013). The responsibility in facilitating this "superficial" knowledge approach to be attributed mainly to the traditional theories of learning, however, often reproduced in a hypertechnological version, totally incapable of understanding the complexities that have ended up providing representations of complex knowledge domains, and performance associated with them, so over-simplified and well-structured to no longer correspond to reality and to preclude any subsequent possible application of knowledge to new cases, fundamental skill known as *transfer*.
In light of these considerations it becomes, therefore, not further postponed and strategically essential to the pedagogy look at this intermediate segment with renewed interest, finally making reference to an idea of learning conceived on an assumption of *irregularity* and *heterogeneity* of reality, which produces, as its peculiar training needs, *cognitive and behavioral flexibility.*

State of the art

Spiro (Spiro, Jehng, 1990) was the first who gave a coherent formulation of a general theory of learning that takes into account the growing need for cognitive flexibility. Together with his research group, he, in fact, generalizes the Wittgenstein's metaphor of the *cross-landscape* to apply it to the learning of any complex and ill-structured knowledge domain and makes of the *multiple representation* (its direct conceptually filiation) the theoretical presupposition of the Theory of cognitive flexibility: so that knowledge can be used in a *flexible manner*, it is necessary that it be *organized*, *taught* and *mentally represented* in many different ways.
Bateson adds a new and crucial element to the described method by Spiro: by comparing double or multiple (Bateson, 1984) derives, in fact, not only that *epistemic clash* through which occurs the natural *process of differentiation* of the reality, but also that consequent *reorganization of cognitive structures* that generates information of a *new logical type*.
It is in this kind of approach to knowledge that seems to be able to recognize the epistemological matrix of Morin's invitation to a mind-set which enables the development of a new cognitive schema, result of explanatory hypotheses developed in the sign of the en-*cyclo*-paedization (an ontological job aimed to articulate what is basically disjointed) and of the *co-construction of knowledge* extended to all the sciences, which allows to arrive at a comprehensive view of each single concept (Morin, 2000).
Given these premises, a new subject of educational research (Giunta, 2013) was inaugurated, aimed to determine whether it is possible that flexibility should be regarded as a fundamental category of a pedagogy that recognizes, in particular, as its primary goal, that providing the subject with cognitive instrumentation adequate to orient themselves in the complex world.

Methodology

But in order to clarify the meaning of the term flexibility, so as making it a regulator principle of the internal (cognitive) and external (even university education) instrumentation, it is necessary, therefore, to articulate this (eminently pedagogical) with other disciplinary perspectives, to observe the constructive interactions between the various knowledge systems and to try to understand, finally, as they produce themselves reciprocally (Ceruti, 2007). It outlines the real Gordian knot of this research: the choice of a suitable *method* for this purpose. And the method chosen for this research is that outlined with wisdom and foresight by Morin in respect of the required constraint of dependence between the object research typology (complex) and the method research typology (complex): conceived in a constant dialogic relationship with the concept of flexibility, it can be represented metaphorically as a *path*, a wandering conceived in the dual and ambiguous sense of roaming to and making a mistake (Morin, 2004), which takes form and develops through the writing of a generative and strategic essay (Morin, 2004), an activity of thought and writing that makes system with the dynamic dimension, the nature of permanent work in progress of the knowledge, triggering, so, an incessant *knowledge spiral*, a generative process that involves not only the specific aspects related to the concept explored, but also the best way to investigate it.

Results and discussion

And while the object and the method of the research are intertwined and mutually generated, there is a *dual*

mitosis: that of the *researcher* in many *scholars* as many as those aspects deemed considered fundamental to understanding the concept of flexibility (15 experts in disciplines completely different from each other, belonging to 8 Italian Universities) and, consequently, likewise *essays*, designed as a self-consistent unit in a non-linear and non-hierarchical conceptual structure. And that of the *levels* in which the topic unravels.
So the compehension of the concept of flexibility takes place, within the disciplinary reading, on a *first domain-specific level*, which relates to the description of all the informative elements internal to the domain and of the earliest forms of circular combination amongst them, made by specific use of conceptual and heuristic tools, typical of a given field of study. It is considered, then, particularly fruitful to conduct a *longitudinal analysis* of the findings by adopting a *phenomenological approach* and drawing on, from a methodological point, the *posteriori codification of the text*, which is based, precisely, on a continuous process of *eidetic reduction* conducted through a series of steps. On a first general reading, aimed at a generic attribution of meaning, is thus followed the identification of elementary statements, guided and supported by a *phenomenological epochè*; the natural *units of meaning* selected were 'correlated', then, with the aims of the research and were selected on the basis of criteria considered functional to the task (*consistency*, *significance*, *longitudinal form*). From a careful analysis of the units of meaning, made using the criteria, it is evidenced by, well, the *categories system* in which it would be possible to organize the many differences emerged. We proceeded, so, with further essay analysis, a second vertical reading, that is domain-specific, of the flexibility concept, weighted, however, the screening criteria (finally united), from which 15 *synopsis* derived.
The *second level* of the survey specifically targets the analysis of circularity longitudinal-domain emerged from the reading of the essays and registered in the specific category *cross references*, specific-domain information in relation of similarity or equivalence (sometimes, even, of blatant correspondence), with others contained in other domains and that reveal more complex forms of references, which seem to point the way to a backward path from phenomenal (the data) to conceptual (the knowledge schema that comes from it) reality, until reaching the *transcendental meaning* (Derrida, 1997).
The details of a *third level* of understanding are seen, a reading of the phenomenon attentive to the deep relations existing between the parties, that qualifies, therefore, the number *n* of elements that compose it as a *system* and removes the risk, always present, degenerating into mere sum of its elements (Minati, 2010). In this horizon of meaning, *knowing the flexibility* necessarily translates into a patient work of weaving in classes or types of meaning more and more mixed and, simultaneously, in a strict survey of the logic level in which it places itself the surplus of knowledge indicated in the research with the term *augment* (aug) and that it is obtained by subtracting from the emergency [XY] the being status-value individually involved (Giunta, 2014)

$$aug = [XY] - (X+Y) \tag{1}$$

In this new interpretative perspective, consider the A and B as belonging to the first class of meaning (that collects the elements of common sense CS) and denoted by the symbol || the *reciprocity relationship*, it is possible to represent this relationship between them, and between them and other entities in the manner as follows:

$$A \parallel B = [AB]^{aug} \tag{2}$$

$$[AB]^{aug} \parallel C = [ABC]^{aug} \tag{3}$$

$$[ABC]^{aug} \parallel x = [ABCX]^{aug} \tag{4}$$

$$CS = [ABCX]^{aug} \tag{5}$$

The range of common sense SC meanings can be considered exhausted when all the evidence gathered within informal contexts are put in relation to each other.
Returning to the subdivision of the concept of flexibility in classes, the system of the common sense CS meanings that ensued immediately generated a certain curiosity about the particular significance assumed within the reflection's initial container: the pedagogy. So, the first significance class entered in relationship with the specifics of a scientific first area, developing a reciprocity relationship of the same nature as the previous one, only more complex, because created between a system (CS) and a domain whose meanings make-system, in turn, between them (D1 = pedagogy). The class that derives is to be regarded necessarily as a *second form of emergency*.

$$CS \parallel D1 = [SC\ D1]^{aug} \quad (6)$$

The construction of domain-dependent concept brought into being, then, the problem of the disciplinary connotation as a limit and invited by comparison with other disciplines in reference to the same subject: flexibility. What emerged was a *third class of meanings*, those domain-longitudinal, which includes not only the set of disciplinary definitions (D1, D2, D3, D4 ...), but also a whole range of cross references and emergencies to the different domains, that, once revealed, enter the mind of those who process in the reciprocal relationship between them.

$$[CS\ D1]^{aug} \parallel D2 = [CS\ D1\ D2]^{aug} \quad (7)$$

But what happens when the domain-specific concepts enter into relations between themselves? They create a *fourth class*, and consequently, a fourth emergency, this time, however, general or *domain-independent.* Continuing, so, that continuous, circular and spiraling nature knowledge-movement gradually more and more inclusive, that proceeds recursively continuing to put in relationship preceding level emergencies with those of the level that follows, until they are completely exhausted, and with them, also the *epistemic spiral.*

Conclusions

From individual reviews on the subject it may be deduced that there is a substantial agreement about the fact that the flexibility consists in the *ability to use the knowledge that you have to produce effective performance*. Learning *to be flexible*, however, is a task that goes well beyond the immediate, tangible result of a specific goal achievement, more or less ambitious, that it is in context: it is, at the same time, the question and the answer of/to the complexity and, therefore, necessarily essential, unique, distinctive and constant characteristic of a way to act competently, in whatever domain you think it, which takes its form and substance from a request for flexibility in responds (*external component*) and it is strongly connoted by a progressive consciousness and automation of the cognitive operations of redescription, carried out in a sign of an increasing flexibility (*internal component*). And it is precisely this characteristic that, although unable to identify with it, puts the flexibility in an higher logical level than the competence: a *meta-competence*, a cognitive-behavioral functioning that is transversal to all domains, all generational ages and all occupational and/or personal profiles that requires the possession of own knowledge, procedures and strategies (Giunta, 2014). But, if we look at the most innovative educational opportunities offered by higher education systems, it is possible to see how not one of them is moving in that direction.

E-learning, in fact, interprets the concept of flexibility in its most common usage, the one on access to resources and services: the University provides teaching materials, video lectures, assessment tests, instant feedback, workshops and online discussion forums, leaving the student to decide when and how to use them.

The cMOOC represent the declination more social and democratic of e-learning, aims at providing high-quality education to anyone, anywhere; however, at present it seems possible to recognize in them mainly an attention to the philosophical and ethical aspects related to a conception of knowledge understood as a *common good*, which translates into a sustainable economic model for educational institutions that do not perverts the basic mission and make them competitive. In particular, they are based on certain principles of the *connecitivism* summarized effectively by Downes: knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks (Downes, 2006). The course does not produce material ad hoc for students, but aggregates and offers a variety of exterior materials deemed suitable for the purpose. It is the student who classify subjects into categories and to make his own personal connections, to be proposed later in a personal way (Banzato, 2011). Flexibility is, in this case, a *metacompetence* believed to be essential for the management of the huge variety of external resources to investigate, make or use, identified by the MOOC: they presuppose, therefore, the use of *flexible cognitive behavior*, but do not arise as its aim to educate the student to implement them.

At this point of the discourse we must, therefore, definitely start thinking about higher education as a *systemic intervention project*, which, in view of the achievement of trans-disciplinarity, provides a *double curriculum*: the first, the classical one, should provide, in addition to the specific discipline contents, a module of common and longitudinal (cross-over) teaching purpose (to understand what is flexibility in a domain-connoted manner) and methods (appropriate strategies to make complex concepts cognitively

tractable, drawing on domain-connoted situations-problem and examples too); the second, to be placed in some strategic moments of the university path and in the end of the same (a demonstration of the knowledge internalization in all its complexity), a reflection on the transversality of the gained competence and a convincing demonstration of the matured capability of its use.

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Visuo-Spatial Attention And Reading Abilities:

An Action Game Prototype For Dyslexic Children

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AbstractIn modern society about 10% of children experience difficulty in learning to read. They suffer from a neuro-developmental disorder called dyslexia. According to recent research, playing action videogames - not directly related to phonological or orthographic training - seems to be a teaching tool able to specifically intervene on spatial attention and to drastically improve the reading skills of dyslexic children. This research aims at designing and implementing an educational action game oriented to promote, through forms of engaging and motivating interaction, phonological training and visuo-spatial attention training in dyslexic subjects aged between 7 and 9.

Keywords: dyslexia; adaptive education, visuo-spatial attention; phonological processing; action videogames

Introduction

Studies conducted over the years in relation to dyslexia and developmental dyslexia (DE) argue that the difficulties in learning reading and writing skills have not a pathological nature but represent an individual variant in development that determines conditions that hinder the acquisition and improvement of some skills (Stella, 2003).

Among difficulties in reading we find those related to the visual and visuo-spatial level (Pavlidis, 1985). The enhancement of reading skills (Strong, Torgerson, Torgerson, & Hulme, 2011) requires the student to take part in activities that stimulate the acquisition of a long chain of skills, including the management of attention. In particular, the visuo-spatial attention plays a key role in the acquisition of reading skills.

Attention can be nurtured by exercises that present the selection of a letter from a collection of other graphemes (Bouma, 1970), requiring a quick orientation of visual attention (Yeshurun & Rashal, 2010) before the application of the correct integration phoneme-grapheme (Vidyasagar & Pammer, 2010). The cognitive processes underlying the improvement of reading skills through visuo-spatial attention are not fully transparent to scientific inquiry yet (Dehaene et al., 2010), and are the subject of innovative and experimental studies.

Researchers from the General Psychology Department of the University of Padua studied visual attention in dyslexic children of primary school, investigating the brain's ability to isolate individual symbols on paper. Each of the 96 children involved in the research had a sheet with a few lines of doodles or non-alphabetic bullet markers and they had to look for the corresponding targets by sliding the rows from left to right, to locate and to delete them with a pencil. Both visual attention and language skills had been tested in children prior to the acquisition of reading. Surprisingly, the deficit in visual attention predicted subsequent reading skills much better in comparison to the language

skills. Since recent studies have shown that specific rehabilitation programs can improve reading skills, children at risk of dyslexia could be treated with prevention programs based on visuo-spatial attention even before the acquisition of reading (Franceschini et al., 2013).

The skills called into question by this visual search task belong to two distinct classes. On the one hand there is the so-called "serial scan", which reproduces the mechanism of reading, symbol after symbol, and on the other there is the "spatial attention" that takes into account the position of each symbol in context.

The ability to play action videogames – not directly related to phonological or orthographic training – seems to be a teaching tool able to intervene specifically on spatial attention and to drastically improve the reading skills of dyslexic children (Franceschini et al., 2013). However, even if there are many scientific papers that highlight the benefits of phonological training in the field of language acquisition, an effective modeling of how the sound experience can be integrated with language recovery programs does not emerge with equal force and clarity. Based on this theoretical framework, this project aims at the design and development of an action game, simultaneously involving both phonological training and attention training in order to adapt educational game strategies for special needs (Wang, 1992) by supporting *teaching adaptively* (Mangione, 2013).

Training of Visuo-spatial Attention in Recent Scientific Research

The characteristics that define an action videogame are:

- High game speed;
- High degree of perceptual, cognitive and motor load (need to track the movement of items, need to plan different strategies, actions to put into practice quickly, etc.);
- Temporal and spatial unpredictability;
- High importance of the events that take place away from the center of the screen (Green, Li &Bavelier, 2009a; Dye, Green & Bavelier, 2009b).

Researchers tested the attentional, phonological and reading skills in two groups of dyslexic children, matched for age and for disorder severity, before and after the use of two types of game, action and non-action, for 9 daily meetings of 80 minutes. Children who used action videogames were able to read faster without losing accuracy and also showed progress in other attention tests. In particular, the group who used action videogames increased reading skills more than they did in 8760 hours of spontaneous development, and achieving a final degree greater than or equivalent to the one obtained with traditional treatments (Franceschini et al., 2012).

The attentional abilities are increased by action videogames, too. Hitting a moving target implies an ability of environmental perception and therefore a prompt attention to details that helps dyslexic children much more than a reading exercise. Thanks to videogames, dyslexic children have learned to steer and focus their attention. Consequently, they are able to extract the relevant information from a written word in a more efficient way, thus reducing the excessive side interference due to their disability (Franceschini et al., 2013).

The individual variations detected in visuo-spatial and cross-modal attention functions explain about 50% of the variance relative to the improvements in reading, even after controlling for age, IQ and changes in phonological skills.

Another recent study (Harrar et al., 2014) confirms that action games can help people who suffer from dyslexia to improve their ability to read and write. Such games – according to scholars – are able to stimulate individuals affected by dyslexia to better integrate multi-sensory impulses.

Let us imagine the following scenario: during a conversation with an interlocutor, someone calls the speaker from behind. The focus will move from the person he is watching at and talking with to the back sound. This is a clear example of moving cross-sensory attention. Authors have discovered that shifting the focus from watching to hearing is particularly difficult for people with dyslexia (Harrar et al.,2014). This research involved participants with dyslexia and not in a video game that required players to press a few buttons in response to different inputs, namely audio and visual stimuli. The

dyslexics were less responsive in pressing the button when switching from one visual stimulus to an aural one, thus demonstrating a greater difficulty in shifting attention from one sensory channel to another, particularly when moving from an image to a sound.

According to researchers, such a phenomenon could be at the root of the problems that dyslexics encounter in reading and, if confirmed, the findings could lead the way to new strategies to improve how to learn the written language.

Traditional approaches require that the letters of the alphabet are first presented visually and then phonologically. This discovery reveals that people with dyslexia may learn associations between letters and sounds faster than listening to the sound and then observing the corresponding word. Traditional approaches to reading act exactly in the opposite way. Research results demonstrate that action videogames involving the training of many sensory abilities at the same time could be an effective exercise for patients with dyslexia.

In addition, through a suitable training dyslexics may enhance their ability to integrate multisensory stimuli and to understand written words as well. Training dyslexics to quickly move the focus from visual to auditory stimuli, as it happens during game experience, may help their ability to read and write.

The possible use of video games to increase the attentional abilities would be undoubtedly functional for populations of children and adolescents with developmental dyslexia. This is the most difficult form to treat with traditional methodologies to improve reading skills, which are repetitive and very costly for the child and therefore more likely to be subject to drop-out (Franceschini et al., 2013).

The analysis of empirical evidence confirms the importance of the strategies used to reveal the actual improvements in reading and writing skills, in the praxis and the space-time integration of the mentioned subjects. This seems to suggest the transferability of the proposed approach to special educational courses.

Pedagogical Design Elements

For the game play, we gave particular importance to the design of some specific aspects.

The first item is related to the use of a specific font that facilitates the process of reading in dyslexics. For this purpose we chose *DFONT 2.0*, standing for Dyslexic Font. DFONT has been specifically designed to facilitate the process of reading in dyslexics, since it has graphical properties which have been designed to facilitate the recognition of letters and words. Figure 1 shows the set of uppercase and lowercase letters of the DFONT.

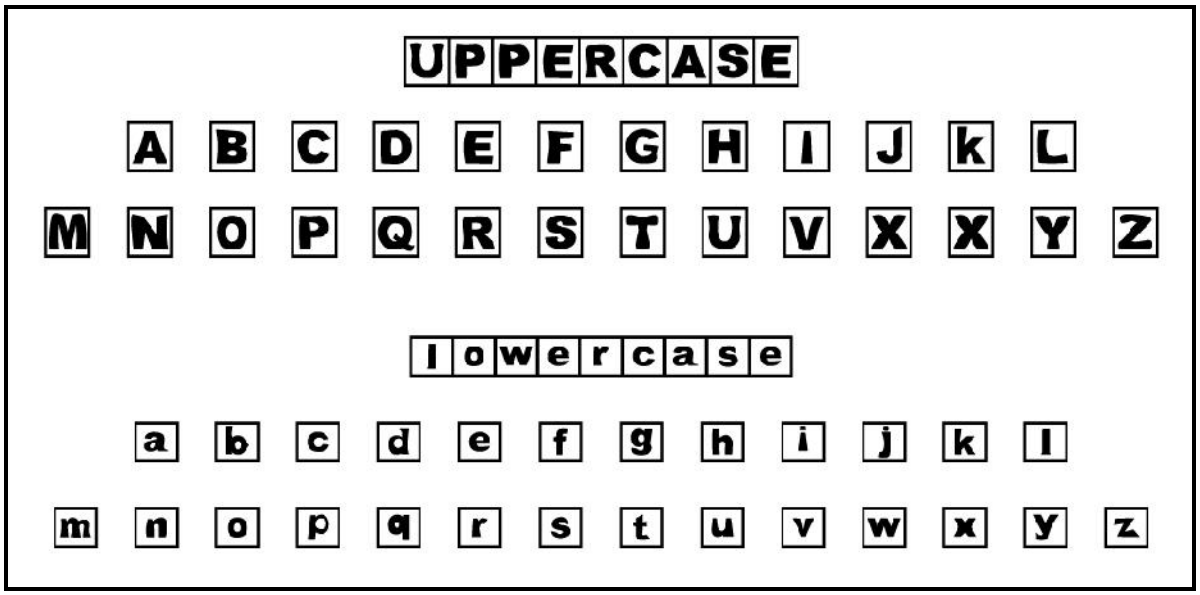

Figure 1: The character map of DFONT.

DFONT is a variant of the Arial font, which seems to be one of the most easily readable for people with dyslexia (Chung, 2002; Reid, 2004; Rello, 2008). Each letter of DFONT has been inserted in a "cage" (i.e. a square box) in order to facilitate the recognition of the individual characters. In DFONT the width of the blank character is about 3 times greater than its equivalent in Arial. This change is intended to facilitate the recognition of single words (Perea, 2012, Reid, 2004). Moreover, in DFONT kerning is absent and each letter is centered with respect to its own cage. This modification has been introduced to allow an easier identification of the position of individual characters (see Figure 2).

Another modification of DFONT is related to the shape of those letters that are more easily mistaken by the dyslexic subjects: < b , d >, < q , p >, < n , u > (Fischer, 1978; Lachmann, 2003; Reid, 2004). In many fonts, the coupled letters differ only in their orientation. In order to make them easily recognizable, their shape has been further characterized, as shown in Figure 3.

DFONT is currently being tested at the University of Salerno (Sibilio, 2014).

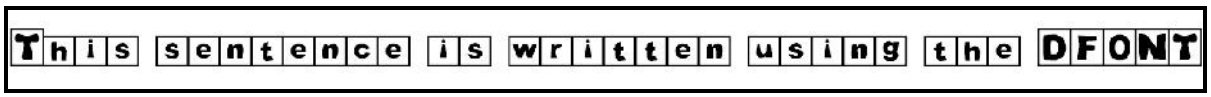

Figure 2: Sentence written using DFONT.

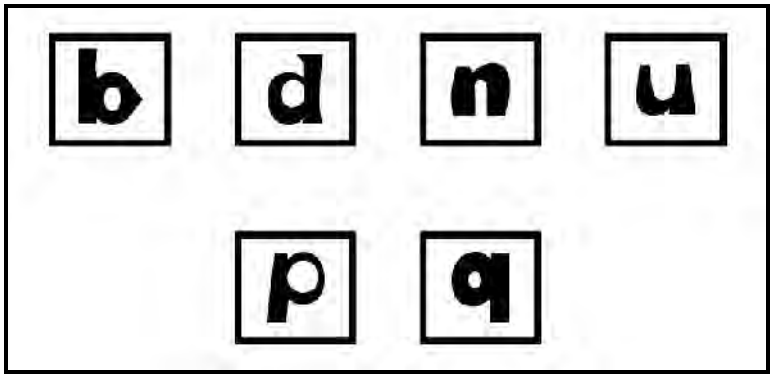

Figure 3: Letters of DFONT.

The second item refers to skill levels and specific difficulties to insert in the game. The idea is finding a balance in order to improve both users' involvement and self-esteem.

Finally, also reinforcement techniques have been designed and implemented in the game. Reinforcement refers to those devices adopted to improve performance and motivation.

Now let us describe the key aspects of the game play.

The basic goal of the game is reconstructing the right sequence of letters for the words proposed by the system. Each round is made of two distinct phases: in the first one, the system draws a word and highlights its letters on a board while pronouncing them; during the second phase, the user has to select the sequence of letters in the right order and as fast as possible. Similarly to most games, in our proposal the player has to face increasing difficulties in order to get involved in the game play. According to in-use terminology of video gaming field, we define the concept of *level* or *stage* as a difficulty phase or given section of the game.

As regards the identification of difficulty-related axes, we considered 5 specific dimensions:

1. *Number of letters on the board* – When letters are few, the game is easier for a number of reasons, e.g. because the player can better identify the spatial position of symbols, symbols are bigger and more clearly distinguishable, etc.
2. *Type of letters on the board* – A key problem for a dyslexic child is being able to focus on a graphical symbol and to recognize it against others. Some letters are clearly different in their graphical aspect, whereas others may be perceived as similar;
3. *Word length* – Since the game play requires to recreate a sequence of symbols, the longer the sequence the harder the player's task);
4. *Symbol layout inside words* – For a dyslexic child, some configurations, e.g. spelling words with double consonants, are harder to be recognized;
5. *Symbol layout on the board* – The way symbols are located in the interface may influence the perceived difficulty, above all for children who are affected by concentration problems.

In Figure 4 we graphically show the differences between Level 1 and Level 4.

Figure 4. Different levels of difficulty as regards: Dimension 1 - Number of letters on the board and Dimension 3 - Word length.

Another pedagogical aspect refers to *feedback* and *reinforcement techniques*. The feedback in education is called "formative" and aims at changing the way of thinking and behaving of the students in order to enhance their learning process and their results in terms of performance. The feedback used in educational contexts is generally indicated as a crucial element for the improvement of knowledge (Azevedo & Bernard, 1995; Bangert-Drowns et al., 1991; Sales, 1993; Shute, 2008) and the acquisition of skills (Narciss, 2007). In addition to its influence on achievement, feedback is seen as a *reinforcement factor* that acts on motivation to learn (Hattie & Gan, 2011; Narciss & Huth, 2004).

As the final goal is providing a game environment to bind phonemes and graphemes, the occurrence of user errors cannot merely lead to the end of the game session. Rather, a number of reinforcements is incrementally provided to players, so that they can improve their performances. Specifically:

1. *Colors*. Any letter can be further distinguished through the use of colored boxes and high-contrast color combinations;
2. *Intonation.* Any letter can be associated to a different pitch, so that the spoken word is in a certain sense sung letter by letter.

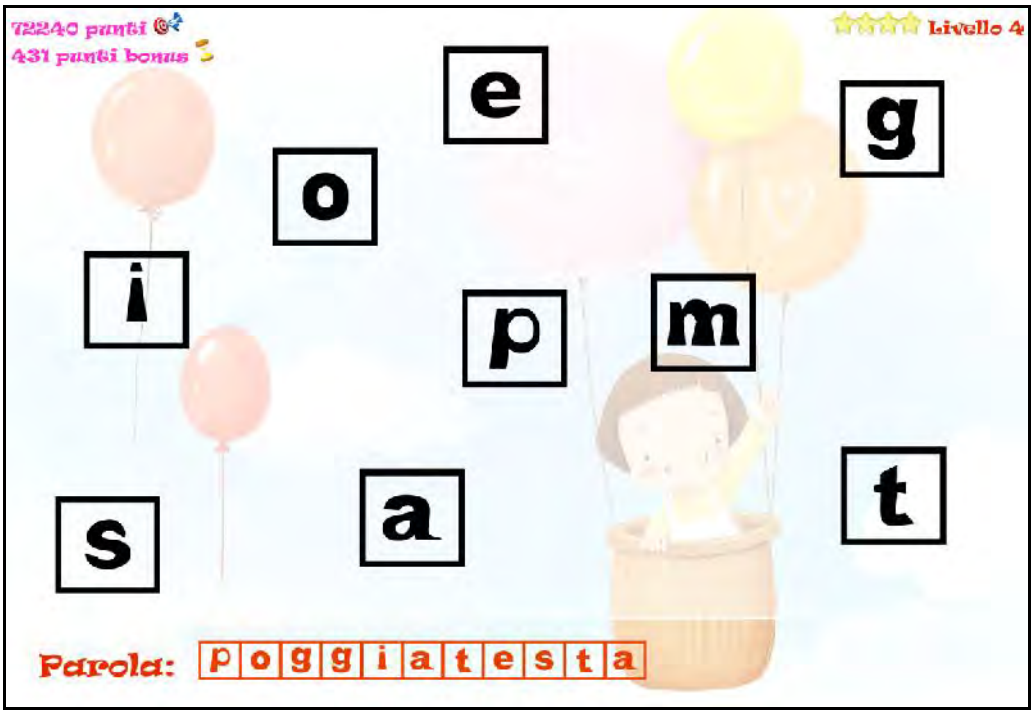

Figure 5. Reinforcement of the screenshot shown in Figure 1b as regards Dimension 1 - Colors.

Conclusion

A prototype of educational action game for dyslexics has been developed, and it is currently undergoing an alpha testing phase (i.e. software performance verification).

The beta testing will take place in schools, particularly in primary schools, involving subjects presenting DSA certification, in order to get feedback useful for corrections and improvements before releasing the stable version. The purpose of beta testing is to verify software functionality. This phase coincides, in fact, with the software verification stage that is part of the normal software development cycle.

This stage ensures that the product has been built according to the requirements and design specifications ("you built it right"). The validation stage, which ensures that the product actually meets the user's needs, and that the specifications were correct in the first place ("you built the right thing"), in the case of educational software, coincides with the stage of assessment of the effectiveness of developed teaching tools, and is historically considered controversial (Hinostroza & Mellar, 2001; Johnson, Cox, & Watson, 1994). This phase will take place at a later stage of the project, to be implemented, once the software is finally released, with, on the one hand, methods and tools of software design and, on the other hand, methods and tools of educational research.

The benchmarking tool selected will consist of MT reading tests

The MT reading tests are without doubt the most widely used objective tests to evaluate the level of learning to read at different stages of schooling. Developed in order to provide school staff a tool for objective assessment of reading skills, the MT reading tests allow to measure separately the process by which the child grasps the meaning of written message (comprehension) and the 'instrumental skills of decoding, in the parameters of fairness and quickness (Cottini, 2008).

Size and stratification of the sample group are currently being finalized, in order to establish future agreements with Italian Territorial Centers for School Inclusion (CTI), Territorial Support Centers (CTS) and the National Institute of Documentation, Innovation and Educational Research (INDIRE).

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Digital Resilience: meanings, epistemologies and methodologies for lifelong learning

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Abstract

Resilience describes the process of creating a positive development in lifelong learning, starting from normal conditions or by considering how to overcome adversities and stressful situations. During the last decades, this construct has been contextualized in different settings and disciplines and only lately, it has been introduced into the digital field. Research and theories on resilience nowadays are numerous and differ from each other according to the paradigm they are related to, to their assumptions, aims and methodological suggestions. This paper presents a review on digital resilience, using the Matrix method for collecting and analyzing data, in order to describe a clearer definition and application of Digital resilience. Results define digital resilience as a way of coping with the digital challenges (MOOCs, Open Access Publishing, risk), or resilience as the final aim of a project by implementing digital methods (digital storytelling, social networks etc.).

Keywords: resilience, risk, lifelong learning, digital challenges

Introduction

Resilience is a construct, which describes the process of creating wellbeing and positive development in lifelong learning, starting from normal conditions for human development or by considering how to overcome adversities and stressful situations. During the last decades this construct has been contextualized in different settings and disciplines (psychological and emotional development, community action, environment, physics, health and medicine, learning and teaching), and only lately it has been introduced into the digital field.

The term "digital resilience" is a less explored area of research related to lifelong learning.

This paper presents a review on digital resilience, using the Matrix method for collecting and analyzing data, in order to describe a clearer definition and application of Digital resilience in the fields of school, higher education and scholarship.

Current development

Resilience is becoming a very common term in literature on education in relation to several topics, as defined in a recent dictionary on education (Garista, 2014): inclusion, disability, life skills, teachers' training, leadership, and guidance, mentoring (Brown et al. 2004, Milstein and Henry (2008), Malaguti (2004), Pinto Minerva (2004), Walsh (2009). The most important factor, which characterizes resilience in the field of education, is its capacity to create new opportunities, new resources, new skills; in other words new learning, emerging from a stressful, disadvantaged or traumatic situation. Consequently, it is not surprising that the term resilience could be related to the digital challenges. For the English language, resilience is a common, diffused word. For this reason, blogs and documents about digital challenges, which refer to the resilient process emerging from them, are easily found. Inspired by other systematic and institutional reviews on the use and application of resilience evidence-based practices in infancy and adolescence (Newman, 2002), a more rigorous research about the term digital resilience, and its translation into educational practices, has been implemented.

The aim of the research is to make the definition of Digital resilience and its possible uses and implications clearer in the field of lifelong learning. Specifically, the research develops its planning starting from the following questions: what does digital resilience mean and when could this term be appropriately used in a pedagogical debate? Do scientific papers about digital resilience exist and which epistemologies of resilience do they discuss? Which are the digital challenges in lifelong

learning and why do they develop resilience? Is there any methodological relationship between resilience promotion and the use of digital resources in lifelong learning?

Methodology

According to the aim of this research, a literature review has already commenced. As stated by Goldman and Schmalz, the literature review is the reading, analysis and summary of scholarly materials about a specific topic (Goldman, Schmalz, 2004). In the evidence-based paradigm, a systematic review is a concise summary of the best available evidence that addresses sharply a defined clinical question. This paradigm shifted into social work research and produced a lot of packages and guidelines aimed to define best practices. Influenced by the discussion of creative methods for literature inquiry in the field of education, and following the suggestions of reviewing in educational research (Trinchero, 2002), the Matrix method for researching the emergent construct of "digital resilience" was used. Goldman and Schmalz suggest to classify data selected for their interpretation in a Matrix form (fundamental in an evidence based perspective) but also to write a logbook which will trace the "reflective and critical process" of analyzing literature starting from one's own background and experience. This reflective and ongoing process is a basic element within the constructionist paradigm, defining the history of the question of the research and another side of reviewing: the creative element in knowledge construction, a dialogue between scientific knowledge, professional experience and the world of other colleagues (Montuori, 2005).

Digital resilience has been explored mixing suggestions from searching data in educational research, collecting and analyzing data in a Matrix and finally interpreting results through the reflective and critical lens of the researcher's logbook. This paper represents the final step of writing, disseminating and discussing the results within a scientific community (Montuori, 2005).

Methodologies used for conducting the review stemmed from a document about digital resilience and children online safety, and consists in:

1) a primary search through websites which mention digital resilience;
2) the definition of key words or mesh terms for a systematic synthesis of peer-reviewed literature;
3) the construction of a Matrix for collecting data;
4) the interpretation of results.

Results and discussion

Inspired by the report about risk and childhood, in relation to online resources available, the term digital resilience was explored in a first search using a common browser. This search strategy produced an overview of the possible fields and topics associated to the construct. This quest clarifies above all informal applications of the terms inside blogs and in relation to the emergent risk of the digital use in lifelong learning.

Obviously, an important skill for information literacy is how to select the big amount of information available on the web (just to make an example writing on google "Digital resilience" produces 9.560.000 results, otherwise writing "digital resilience, lifelong learning" produces 2.480.000 results). This search showed above all informal materials and few scientific papers. Among informal materials, packages about how to prevent digital risks, bullying or how to face and cope digital challenges have been documented and commented in the logbook. During this process, keywords on digital resilience have been defined for a more rigorous searching process on the specific databases in education/health education (Medline, publishing society database of specific educational journals). Although the review on digital resilience identified a good number of books and journals, a number of limitations can be attributed to the findings: for books, we consider only the ones related to resilience education, and for journals, only the ones related to lifelong learning. A practical case of this first phase could be demonstrated synthesizing the quest within the principal database for health education and medical education, Medline, which produced 19 results. Among them, five papers were related specifically to health education and medical education. Digital resilience presents itself in relation to the use of *digital storytelling* to evaluate or implement resilience promotion programs, to the use of *mobile therapy*, to information health access and *resilience of the digital divide*, finally the resilience construct was discussed *to cope digital challenges in medical curricular changes* in an Indian Campus.

Even if the collection and interpretation of data is not finished yet (a specific search is currently being carried out in educational journals), it is possible to affirm that there is a growing trend in the scientific publications on *digital resilience* related to the pedagogical field. A tangible example, among the scientific literature, consists in an interesting contribution by Weller and Anderson that analyzes the construct of digital resilience in higher education in relation to MOOCs and Open Access Publishing, applying the scholarship model by Boyer (discovery, integration, application, and teaching) for the research of digital resilience. Weller specifies his vision on digital resilience better in his book "the Digital Scholar. How technology is changing academic practice" defining a 'digital scholarship resilience matrix' (Weller, 2011).

Conclusions

Lifelong learning and scholarship demand a reflection on digital resilience. Looking at the literature, we can affirm that the construct of digital resilience is rising in the last decade and above all in the last three years. There is a two-fold link between resilience and the digital tools: the digital tools promotes resilience in education and health education; resilience as a mean to face the digital challenges. Meanings and epistemologies, as they appear in this first part of data analysis, show an evident predominance of the ecological model used in environmental and biological studies. An interesting reflection on the construct of digital resilience, and the area for research it offers in education, could come from the wider literature about resilience education and health education, which is now shifting on a constructionist perspective (Ungar, 2004).

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Bridging formal and informal learning in teachers professional development: experiences and innovative environments

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Abstract

INDIRE has been promoting teacher's professional development using e-learning and blended learning models since 2001. This paper presents two different learning models, experienced in recent years as possible answers to two of the main claims expressed by teachers, namely continuity and community, called "FOR", a lifelong learning environment run by INDIRE between 2007 and 2013, and "#loptis", an informal and open education environment born as a follow up of #ltis13, a connectivist MOOC promoted by Italian University Line. Reference is also made to the SWOT analysis of the two models, which provides elements for the design of NetLiviningLab, a connectivist Massive Open Online Laboratory, designed to set up a network of learning circles to support both professional development and innovation in education.

Keywords: teachers training, formal learning, social knowing knowledge, massive education

Introduction

INDIRE (www.indire.it) has been supporting Teacher's Professional Development since 2001 with Punto.Edu, a blended learning environment inspired to social costructivism (Palincsar, 1998; Annali, 2005). Punto.edu was designed to promote reflective practice, with reference to Kolb's, Engestrom's and Schon's models, although its courses had the typical features of formal learning such as defined duration and structured design. Several surveys pointed that two of the main claims expressed by teachers were *continuity* and *community* (Faggioli, Storai, Di Stasio, 2008). Following to these surveys, in 2007, INDIRE develops FOR, a lifelong learning environment run until 2013. FOR was a password protected environment, accessible after subscription to in-service Italian teachers and hosted in the INDIRE proprietary learning management systems. In 2013 the Italian University Line (IUL), an online university for teachers, launches #ltis13, one of the first Italian MOOC. After the #ltis13 participants express the need for a follow up (Formiconi & Federici, 2013), Andreas Formiconi (a

teacher) creates the *Laboratorio Online Permanente di Tecnologie Internet per la scuola*, #loptis (http://iamarf.org/category/loptis/), an open access, informal learning environment.

FOR and #loptis were designed to respond to similar needs, to share the same target and to face issues related to motivation and engagement of adult professionals in online learning environments, and both the learning experiences collected a significant participation rate. From 2008 to 2012 about 4.000 teachers actively attended FORum and ForGroup. In the considered period #Loptis counted a total of 545 subscribers and a dense silent and active participation. Both cases have become "lessons to learn" to design an effective online learning model for teacher professional development that bridges formal and informal learning.

For: an Indire Environment Oriented to Professional Knowing Knowledge

The main purpose of FOR was to provide continuity with Punto.edu courses and to give an ideal frame where the teacher takes the role of a learner. FOR was designed as an environment open to all Italian teachers, able to offer them a learning space oriented to a mixture of formal, informal and non-formal learning (Bonaiuti, 2006; Ranieri & Manca, 2013). What we analyze here is FOR as it was in the period 2008-2012, since one year and a half later, that is in 2008, it was reshaped and made focused on technology and methodology for teaching and on the didactics of specific disciplines. We have grounded our design on two metaphors: network and community. According to this, the idea that was behind FOR seems to be very distant from Siemens' claim which states that "the pipe is more important than the content within the pipe" (Siemens, 2005). In particular, with reference to the above two metaphors we have specifically referred to the theory of knowledge, where the term "network" is used and associated with Hesse and Arbib's (Hesse & Arbib, 1986) interpretation of human knowledge, as a schema network with a continuous retroactive feedback between subject and environment that changes and enriches the subject as well as the environment. On the other hand, we have also referred to the Wittgenstenian theory of community of speakers (Wittgenstein, 1968), in which the learning process is possible by virtue of the participation into the community. The teaching/learning style is actually grounded in the tradition of collaborative construction of knowledge (Bereiter & Scardamalia, 2006; Brown & Campione, 1994; Wittgenstein, 1968; Hesse & Arbib, 1986).

In the light of the above considerations, FOR could be defined as a "combined community/content environment" (Granitzer & Tochtermann, 2009). In fact, as a content environment, FOR included: a general part with a news section; a repository containing most of the learning objects used in the previous courses; a video section with didactic videos, live events, live classes with experts; "thematic areas" presenting general parts with learning objects and other materials and paths on specific topics.

As a community space, instead, each path also included FORum and ForGroup: collaborative activities in forum and work groups. The forum and work groups topics were usually proposed by

INDIRE but also by FOR participants that could suggest possible discussion themes. FORgroup's partecipants worked in INDIRE's virtual classroom for collaborative work/learning (Eulab); the Institution chosed the tutor also among FOR's participants themselves. FORum and ForGroup were areas in which the teachers could work together as *practitioners* and as a member of the learning community. Usually FORum was dedicated to a first step of discussion while ForGroup was intended for a deeper collaborative analysis. Such an approach helped to structure a training path based on the analysis of educational practices, a method that can be used to support both the in-service and the pre-service teacher training (Magnoler, 2012).

There were no tutors *strictu sensu* in FOR. Nevertheless, the environment provided an Editorial Board and also a number of conductors for the collaborative activity. The main role of FOR EB was to read tendencies and needs and to give an interpretation in order to express proposals that could be widely shared by the community. The conductor of FORum and ForGroup was usually a teacher with relevant expertise and well known by the community as an expert to be perceived by the participants as a *primus inter pares*. A distinctive feature of these activities was the final report that the conductor was requested to write, share and discuss with all the participants and also to publish in order to "tell" the community all about the activities carried out, as well as results, ideas, issues arising from the work. The work group activity lasted 3 months.

In March-April 2009, the users were submitted a short questionnaire by the FOR Editorial board that analyzed behaviours and expectations and compared teachers' technological attitudes and competences, together with communication practices in their personal and professional lives. Eventually, the study showed that the users spent a lot of time on the Internet, especially for their job scope (Fig. 1).

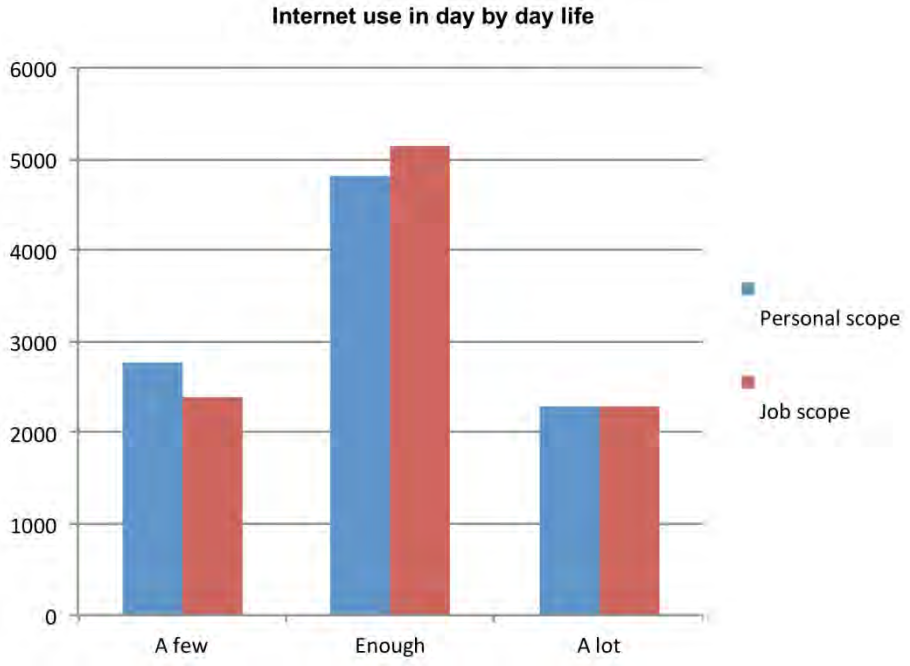

Figure 1 – Teachers' use of the Internet

The participants declared to own basic knowledge of: main instant messaging systems, social networking platforms, mailing list services, forums, blogs and wikis, although they had not usually used these tools (Fig. 2).

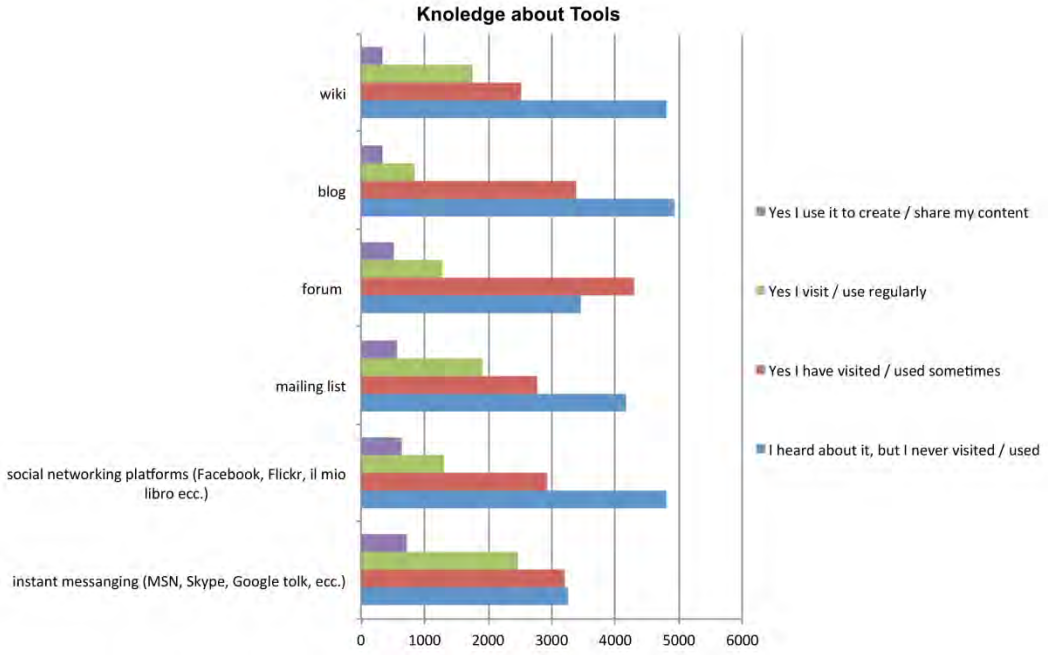

Figure 2 – Teachers' use of basic internet tools

As for the users' expectations related to a possible lifelong learning environment, what emerged was that teachers, above all, claimed to get in touch with colleagues who shared the same interests with, but they also asked for an alert system to be activated on any new content relevant to their interests. Furthermore, they expressed interest in the possibility of availing of a more "instantaneous" communication system than the forum (Fig. 3); finally they would have liked to find additional mailing list services and extra social networking systems (Fig.4).

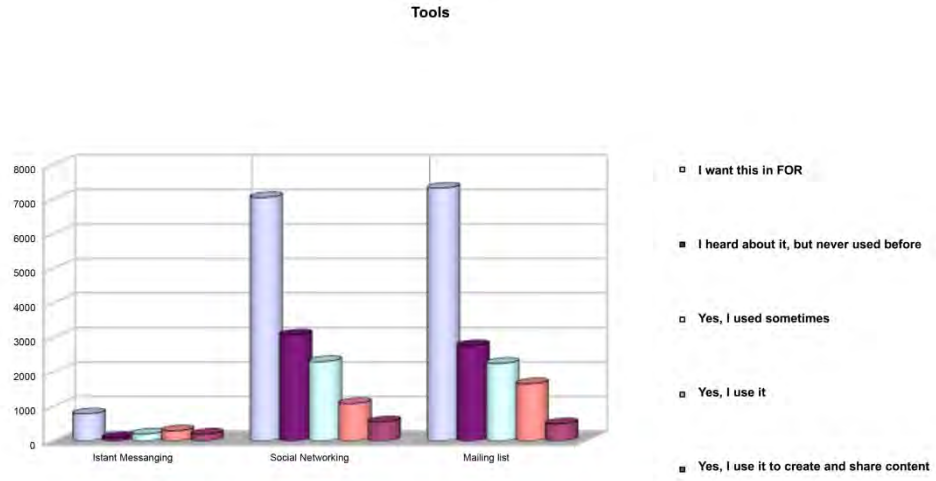

Figure 3 – Interest in more "instantaneous" communication tools than the forum

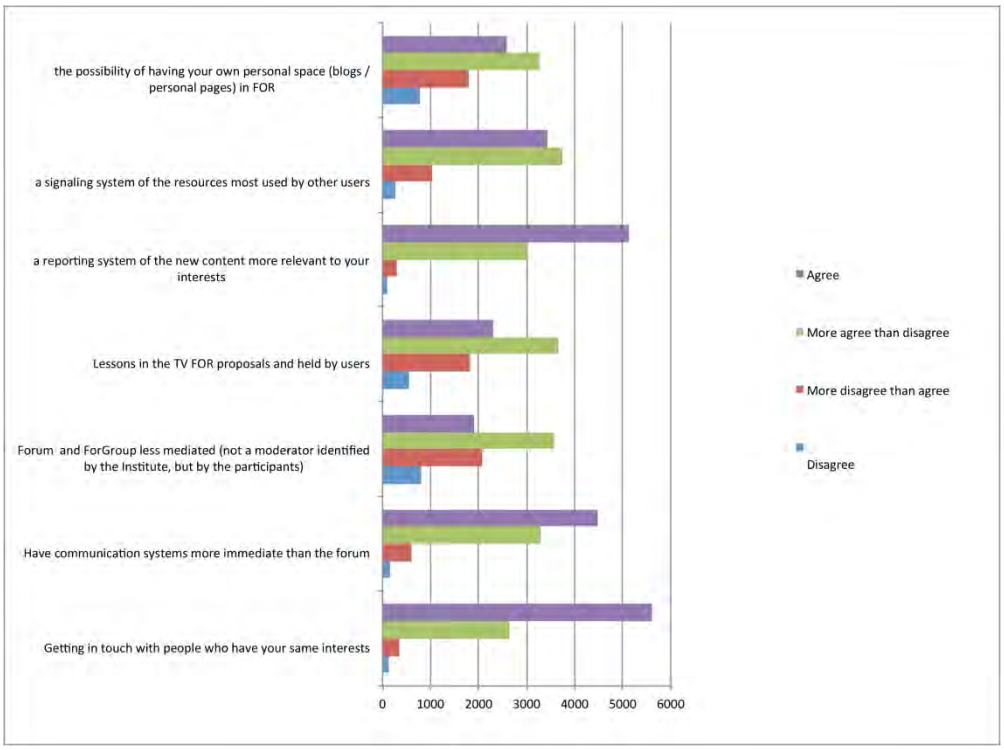

Figure 4 – Users' expectations related to a possible lifelong learning environment

Social networking tools were indicated as favorite technologies to get and keep in touch with colleagues with the same interests (Fig. 5).

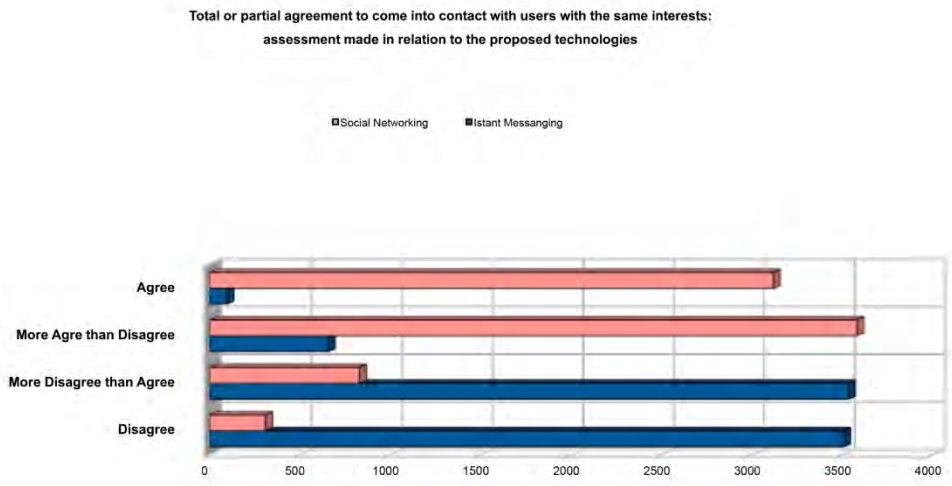

Figure 5 – Social networking as technologies to get and keep in touch with colleagues

The survey conducted in 2009 thus showed that the teachers hoped for a "new FOR" in which aspects of sharing, co-construction of meanings and peer-learning social media and social networking tools could be empowered.

STRENGHT	WEAKNESSES
The "combined community/content environment" allows both independent and collaborative learning. Collaborative knowledge building through the analysis of educational practices is meaningful for in service teachers. Collaborative knowledge building contributed to FOR content updates managed by Indire (quality filter) Group facilitators and the Editorial board offer a double perspective on participants needs and on community trends.	Impossibility to create a strong social presence that is mirrored in conventional social media Lack of personal writing spaces. Content updates happened every six months
OPPORTUNITIES	**RISKS**
FOR is an environment tailor-made for teachers' professional improvement, so members can feel as part of a community both as teachers as well as a learners. FOR structure supports massive access (large number of users)	Incline toward a self-referential environment without link with other external formal, informal and non-formal learning space Lack of a strategy in order to have a real integration between the collaborative activities and other sorts of interaction with what happen in these social networks that today are used by teachers.

Table 1 – SWOT analysis of FOR

Loptis, a Massive Open Connectivist Lab

#LOPTIS was created after #ltis13's success in terms of participations: 481 subscribers, an average of 88 comments for post, 165 participants in personal learning environments. The purpose of the teacher was to transform the course into a lifelong learning environment: *"Something permanent, a lab, a workshop, a garden, a circle[..] a place where a community of practice can live longer than the quick infancy allowed by a course. [..]A research action on the possible ways of lifelong learning" that works with "an almost undefined (learning) plan, though with very clear (learning) goals."* Though it was conceived as a non-formal learning environment, IUL agreed with the teachers to provide requiring participants with credits accepted by university. To get the credits, the learners needed to achieve teacher's positive assessments of their active participation in comments, collaborative activities and personal learning environments. For this purpose, the posts contained in the welcoming section, from September to November 2013, may represent a "kick start" to this active participation, as they provide instruction to use RSS technologies and blogs in the personal learning environment. Up to now 53 students out of 524 have earned credits.

#LOPTIS was modelled as a lab for *situated practice of Internet* (Wenger & Lave, 1991; New London Group, 1996), a "place to inhabit" where participants can perform "reflective action" (Hase & Kenyon, 2000). Teachers, engaged in the formal learning, expressed the desire to further their software and hardware training (Iommi T., Parigi L. 2009) and provided that this expectation is one of the main dropout cause (Parigi & Rossi, 2010), the participation rate in #loptis is worthy of attention. Access data have shown that #loptis views (319) were ten 10 times higher than in #ltis13(30). Page views stats may be explained by the number of visitors reaching Iamarf.org's blog through social media like Facebook and Twitter and ranking second and third among top ten referrals: these data seem to confirm Formiconi's assumptions about *silent participation*. Active participation was also considerable: while Iamarf posts collected an average of 14 comments each, #loptis posts had an average of 27 per post.

#LOPTIS was designed for self-paced learning: a process where content and learning activities, delivered through posts on a weekly basis, have no time schedules or deadlines and all activities are planned in an asynchronous mode. It is a consequence of the pedagogical view behind #loptis: as time is an access condition, educational institutions and educators have the duty to leave time management to its *owner*, the learner**.** This seems to have positive effects on participants that need a longer time span for their active participation, for example #ltis13 busy students that need to procrastinate their learning owing to lack of time, or learners that are more comfortable with a *snail technique,* that is the way some participants refer to post comments.

Regarding active participation, the teachers' posts collected comments over a long time span: on average posts were commented along a period of 71 days. Twelve posts out of 58 rank 155 days reaching activity peaks of five/six months long. Posts with the longest life cycle were related to "tutorial content", they provided the basis for active participation as well as a support to reflective self-assessment and motivation and posts concerned with "collaborative writing".

The comments revealed the existence of participants with heterogeneous skills and backgrounds, sharing problems with specific software or devices, personal cases (such as a narrative of identity theft), opinions and values. The issues emerging from the comments contributed to redefine or integrate the original content and to keep it updated. This virtually permanent activity encouraged both peer learning and the construction of a real community out of a course, as the teacher supported the emergence of expertise through constant moderation.

The teacher's posts showed other commonalities. For instance, these "learning units" typically started with a *problem posing* section: that is, narrative of a case or another *rhetorical device* (literacy quotations, analogies and metaphors) that blends technical issues with ethical implications. Through this approach, it acts as the Freire's critical teacher aiming to generate students questions (McLaren, Leonard 1993) and to support deep changes in participants' attitudes and beliefs through reflective

practice (see *double-loop learning*, as cited in Blaschke, 2012). It is interesting to point out that this style is emulated in participants comments that make a wide use of literary references, and provides personal positive feedback on the teacher's perspective, using narrative to tell biographical cases.

STRENGHT	WEAKNESSES
The Parigiabsence of time constraints supports self paced learning. Pedagogical views and methods supports self determined learning. Participants are coached to active participation Active participation and educator moderation prevents content from rapid obsolescence Active participation and educator moderation creates several "permanent micro labs"Parigi Accreditation system is related to authentic assessement (active participation is assessed)	The "narrative", sequential structure of the learning content require a long time reading. Content updates provided by commenters are not easy to find. Content updates curation are time consuming
OPPORTUNITIES	**RISKS**
# Loptis time management may support the transformation from silent to active participation Authentic assessment may provide a better assessment than testing or project work	#loptis model may not work with a different teaching style and pedagogical view or in a different knowledge domain The educator teaching style is intertwined with his own cultural biography and may be difficult to model and replicate. Part of the silent participation may be an effect of occasional visitors searching for specific information

Table 2 – SWOT analysis of #loptis

Coherently with Formiconi's view on digital literacy as a critical literacy, the teaching model was designed to transform a "need for basic instruction" into a heutagogic experience (Hase & Kenyon 2007) that aims to affect a deep cognitive level and provides participants with the grounds for domain related self-determined learning. The attitude toward *critical teaching* created the condition to coach silent participation to an active participation. This perspective helped the whole model to work effectively having positive effects on content updates and on peer learning and preluding to authentic assessment.

Conclusions

The SWOT analysis underlines some features that should be taken as a basis for the design of an environment that can effectively respond to the needs for continuity and community expressed by the INDIRE's teachers, namely:

1) #Loptis "learning time design", the coaching approach to active participation and authentic assessment for accreditation;

2) FOR's focus on the analysis of educational practice, the "combined community/content environment" approach oriented to both independent and collaborative learning, the idea of teachers as a community both of practitioners and learners.

These features will be the basis for NetLivingLab, a smart environment for teacher training, that will be inspired by the cMOOC experience, deriving its main reference background from George Siemen's connectivist theory (Siemens, 2005). NetLivingLab will be not properly a "course", yet it is more like a "laboratory space" that supports reflection on practices and leverages on narrative and conversation-based learning as a fundamental strategy for the knowledge building and sharing. To implement this model, INDIRE is carrying on further research to design a model based on the "generative" communication (Engeström 2008; Toschi 2011;) and aimed to perform online authentic assessment of learning outcomes through the verifiable acquisition of adaptive capabilities "to live digitally" in a space that becomes a territory to be lived, as citizens but also as educators, aside young people, digital but savage natives.

In order to provide possible certifications, the NetLiving Lab will assign to the students 6 CFU (credits) – formally issued by the Italian University Line, after payment of due administrative fees. Learning outcomes will be assessed basing on a simulation-based and qualitative verification procedure, which tests teachers' ability to solve complex and practical world problems in their professional life.

The teacher will experience a new educational environment for MOOCs in a new "heutagogic" view (Ausubel, 1962; Mangione, 2013), where continuous tutoring actions and *peer seeking* are welcome and able to overcome the 'one size fits all' approach (Miranda et al., 2013).

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SESSIONE PLENARIA:

OPEN ACCESS: RICERCA APERTA, DIDATTICA APERTA

Di nani e di giganti.
Open access: aprire la Ricerca, aprire la Didattica

Patrizia GHISLANDI,
Università di Trento

Se lo scopo dell'università, e di chi in università fa ricerca e didattica , è quello di creare, diffondere e preservare la conoscenza, l'Open Access può contribuire in modo determinante a raggiungere questo obiettivo.
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Open Access, aprire la ricerca

1

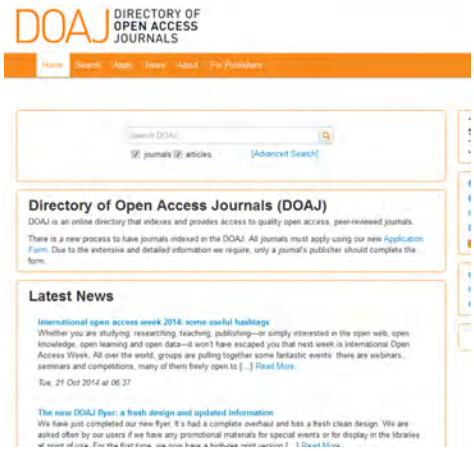
Gli autori di articoli scientifici, fino alla fine del secolo scorso, per diffondere i risultati del proprio lavoro non potevano che rivolgersi agli editori, che provvedevano a stampare su carta e a distribuire le riviste a tutti i potenziali lettori, principalmente nelle università e nei centri di ricerca. Agli autori veniva chiesto, per usufruire di questi servizi, di firmare un contratto con il quale cedevano all'editore , nella quasi totalità dei casi, la possibilità di pubblicare e ripubblicare in via esclusiva il contenuto dell'articolo.
Negli ultimi 20 anni due avvenimenti hanno profondamente cambiato lo scenario: la diffusione di internet, iniziata in Italia nel 1994, e la crescita del costo delle riviste scientifiche. Secondo la Association of Research Libraries, una organizzazione non profit con sede a Washington, il costo medio delle riviste scientifiche, dal 1986 al 2003, è aumentato del 260% a fronte di una inflazione del 68%. Mentre una manciata di editori si spartisce il mercato delle pubblicazioni scientifiche in un giro di affari enorme, basato sullo sfruttamento di risorse pubbliche (Monbiot, 2011). Il problema è che le università pagano molte volte durante il processo di pubblicazione dei risultati della ricerca: pagano il tempo dei ricercatori durante le ricerche; pagano il tempo per redigere gli articoli scientifici. Poi ancora pagano gli studiosi che fanno la

[1] Fonte: http://it.wikipedia.org/wiki/Open_access

revisione degli articoli su richiesta degli editori. Infine pagano il costo delle riviste scientifiche, in alcuni casi molto alto. Stando così le cose le università possono sostenere il costo solo di una frazione delle 25.000 riviste peer reviewed e di conseguenza gli articoli scientifici sono disponibili solo ad una parte degli utenti potenziali, mentre le ricerche hanno un impatto più limitato sulla produttività e sul progresso della scienza, rispetto a quello che potenzialmente potrebbero avere.

Per tutti questi motivi si è diffusa, all'inizio del nostro secolo, l'idea di Open Access (il cui simbolo è quello riprodotto ad inizio paragrafo): nel 2002 con la Budapest Open Access Initiative; nel 2003 con la dichiarazione di Berlino; e infine nel novembre 2004 con la dichiarazione di Messina. Dice la dichiarazione di Berlino : "By open access, we mean the free availability of articles on the public internet, permitting any users to read, download, copy, distribute, print, search or link to the full text of these articles, crawl them for indexing, pass them as data to software or use them for any other lawful purpose…".[ii] Da questa, e da altre definizioni, si ricava che l'accesso deve essere aperto dal punto di vista: tecnico, economico e legale. Tecnico perché deve essere possibile accedere facilmente all'articolo desiderato, leggerlo e scaricarlo da internet. Economico perché, qualunque sia l'architettura economica che consente la pubblicazione, il lettore deve poter accedere all'articolo gratuitamente. Legale perché deve essere possibile, per il lettore, riutilizzare, citando opportunamente, parti dell'articolo preso in considerazione. Per quanto riguarda l'aspetto legale la tradizione scientifica ha da tempo definito le regole della citazione fra autori, e questo rappresenta quindi un patrimonio ormai acquisito.

Ma quando parliamo di riviste ad accesso aperto a che cosa intendiamo riferirci? Attualmente a 1.772.979 articoli di 5.934 riviste, di 135 paesi. L'elenco è reperibile su DOAJ-Directory of Open Access Journals.[iii] Sarebbe auspicabile però che l'accesso fosse aperto a tutte le riviste, ovvero a 2.5 milioni di articoli di ricerca pubblicati annualmente, in 25.000 riviste scientifiche e atti di convegni peer reviewed , in tutte le discipline.



[2]

Ma perché sosteniamo che la maggior parte delle riviste dovrebbe essere ad accesso aperto?
Perché l'OA garantisce tutta una serie di vantaggi, nello specifico:

1. minori barriere tecnologiche, economiche e giuridiche all'accesso alla ricerca;
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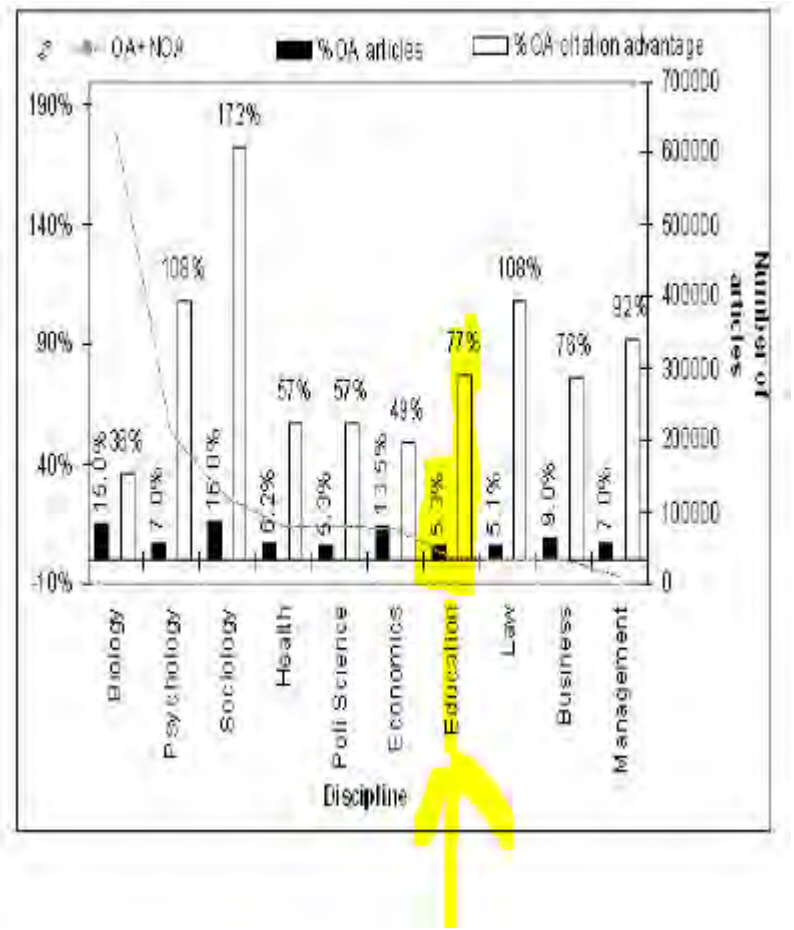
3. un impatto maggiore (dal 36 al 172%) sulla comunità accademica nazionale ed internazionale;
4. meno duplicazione degli studi e più interdisciplinarietà;
5. maggiore visibilità della produzione scientifica del singolo autore e dell'istituzione che supporta la ricerca;
6. più facile trasferimento dei risultati della ricerca alle imprese;
7. trasparenza verso la cittadinanza, che paga le tasse;[iv]
8. conservazione nel tempo;
9. restituzione agli autori del controllo del diritto d'autore sulle proprie pubblicazioni.

[2] Fonte: http://doaj.org/

Da Hajjem et al. (2005) ricaviamo un grafico che evidenzia di quanto aumentano le citazioni, quando l'articolo è pubblicato in Open Access.



[3]

E' necessario a questo punto, dopo aver introdotto le linee generali dell'OA, precisare che ci sono due tipi di accesso aperto: Green Open Access e Gold Open Access.
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- la pubblicazione degli articoli avviene attraverso riviste scientifiche, normalmente pubblicate da editori
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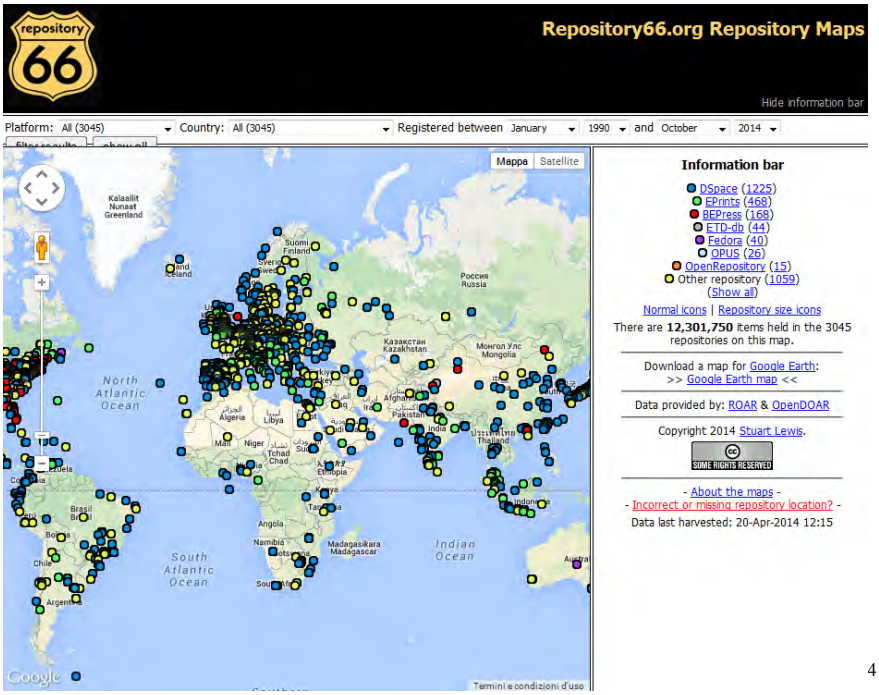
- la rivista garantisce un sistema di peer review.

Il Green Open Access è quindi affidato ai ricercatori che depositano i propri articoli nei repository istituzionali. Mentre il Gold Open Access è affidato agli editori e alla conversione in OA delle loro riviste. Cosa che gli editori più accorti hanno iniziato a fare, ma chiedendo agli autori (o alla istituzione) il pagamento di un costo che può essere anche molto alto.
Per questo si ritiene che il Green Open Access sarà il sistema che potrà concretamente essere messo in atto nel breve periodo. Anche il governo inglese, inizialmente favorevole al Gold Open Access col rapporto

[3] Fonte: Hajjem et al. (2005)

Finch (Finch, 2012), ha più di recente cambiato la propria posizione. Il 10 settembre 2013 viene pubblicato infatti, sul sito del parlamento,[v] un articolo dal titolo "Government mistaken in focusing on Gold as route to full Open Access, says Committee" (2013). Il Committee di cui si parla è il Business, Innovation and Skills Committee dell'House of Commons,[vi] che ha pubblicato sul tema un rapporto (Business Innovation and Skills Committee, 2013).
Si tratterebbe insomma, invece di seguire unicamente la via ormai consolidata degli editori per la pubblicazione dei propri articoli scientifici, di inviare anche al repository della propria università una copia dell'articolo, in modo che diventi liberamente accessibile a chi desidera consultarlo e sia disponibile per la valutazione dell'autore sia a livello nazionale, sia a livello locale.

I repository attualmente esistenti sono moltissimi e la mappa della loro dislocazione si può trovare in internet al sito di repository66.org, un nome che richiama alla mente la mitica Route 66 degli Stati Uniti, la strada che negli anni trenta vide molte famiglie, principalmente dall'Oklahoma, Kansas e Texas, cercare nuove opportunità ad ovest, per cercare di liberarsi dalle ormai insopportabili condizioni di vita nei propri territori di origine.



4

L'elenco dei repository Open Access, che sono notevolmente aumentati negli ultimi anni, si può trovare invece sul sito OpenDoar-the Directory of Open Access Repositories,[vii]

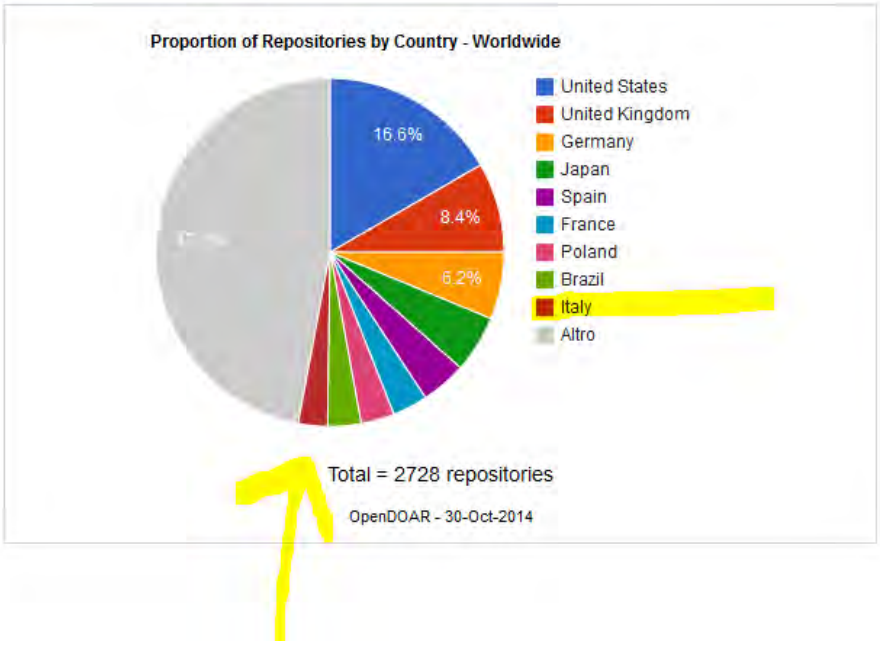
[4] Fonte: http://maps.repository66.org/

OpenDOAR

Directory of Open Access Repositories

Home | Find | Suggest | Tools | FAQ | About | Contact Us

Proportion of Repositories by Country - Worldwide



[5]

Come si può vedere dall'immagine catturata dallo stesso sito c'è una buona presenza di archivi italiani.

Fra i repository va fatto un cenno ad Academia.Edu e Research Gate, due archivi molto utilizzati dai ricercatori accademici, anche se la pubblicazione deve comunque rispettare l'eventuale contratto firmato con l'editore.[viii]

Per regolamentare i rapporti tra editori ed autori recentemente sono state definite alcune leggi. L'unione europea ha emanato la Raccomandazione 417 del 17 luglio 2012, in cui dice che deve essere assicurato un accesso aperto alle pubblicazioni scientifiche prodotte nell'ambito di attività di ricerca finanziate con fondi pubblici quanto prima possibile, preferibilmente subito e comunque non più di 6 mesi dopo la data di pubblicazione e di 12 mesi nel caso di pubblicazioni nell'area delle scienze sociali ed umane. Anche l'Italia è intervenuta legiferando su questo tema con la legge del 7 ottobre 2013, n.112. Purtroppo però l'embargo è stato alzato a 18 e 24 mesi rispettivamente, ed inoltre non sono state previste sanzioni per chi non rispetti la legge.

Ad una indagine condotta dall'Università di Torino chiedendo ai singoli editori quale era la loro politica rispetto all'embargo nei confronti del self archiving molti non hanno risposto. Dato questo stato di cose Sherpa/Romeo, il sito che pubblica le policy relative al copyright e al self archiving dei vari editori, registra una situazione abbastanza critica per quello che riguarda il nostro paese, che registra la posizione di 31 editori, che in alcuni casi è comunque di chiusura.[ix] E' però possibile per l'autore, all'atto della stipula del contratto con l'editore, chiedere che venga aggiunto un addendum che riconosce all'autore la possibilità di pubblicare nei propri repository istituzionali o scientifici.[x]

[5] Fonte: http://www.opendoar.org/

6

Comunque occorre ammettere che il green OA è condizione necessaria, ma non sufficiente per la pubblicazione nei repository istituzionali, tant'è che attualmente la percentuale di conferimento di articoli è molto bassa. L'unico modo per garantire il 100% del self-archiving è quello di richiedere ai ricercatori il deposito nei repository istituzionali, eventualmente con embargo (accesso chiuso per un periodo limitato, e comunque al massimo quello richiesto dalla legge). Questo ovviamente va fatto attraverso una policy di ateneo sull'Open Access che è necessaria

- per rendere accessibili a tutti i risultati della ricerca (pubblica);
- per dare maggiore diffusione ai risultati della ricerca della propria università;
- per garantire la conservazione nel tempo delle pubblicazioni;
- perché il formato elettronico offre possibilità di comunicare la scienza in modalità che vanno molto oltre a quelle offerte dalla stampa.

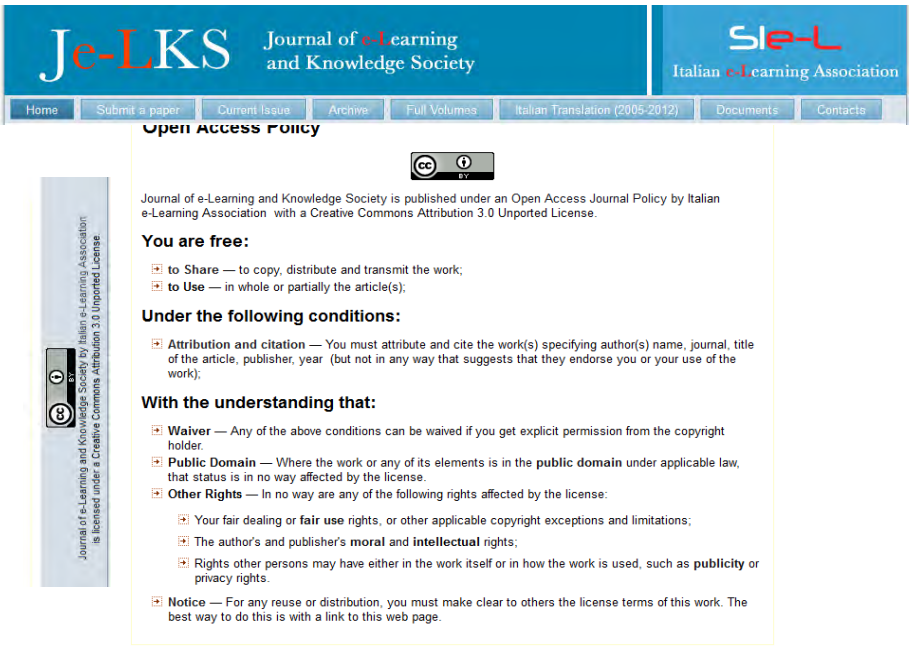
L'ateneo trentino si è dotato, di una "Policy sull'accesso aperto (OpenAccess) alla letteratura scientifica", approvata in Senato il 29 gennaio 2014, nella quale all'articolo 6 si dice che l'Autore è tenuto a depositare il proprio lavoro nell'archivio Istituzionale.[xi] Il deposito è ad accesso chiuso fino ad un massimo di 18-24 mesi, trascorsi i quali ogni pubblicazione scientifica finanziata pubblicamente deve essere ad accesso aperto per legge.[xii]

7

Repository per il self archiving dell'Università di Trento.

[6] Fonte: http://www.sparc.arl.org/
[7] Fonte: http://eprints.biblio.unitn.it/

E ora, per concludere il paragrafo sull'OA, 3 buone notizie.
La prima è che la rivista della Siel, Je-LKS- Journal of e-Learning and Knowledge Society, è Green Access senza embargo.



[8]

La seconda è che la rivista della Sirem-Società Italiana di Ricerca Mediale, ovvero REM Journal (Research on Education and Media Journal) dal prossimo numero sarà Green Access senza embargo.

[9]

La terza buona notizia è che si sta per costituire una associazione per l'Open Access Italiana, di cui chi desidera potrà fare parte.[xiii]

[8] Fonte: http://www.je-lks.org/
[9] Fonte: http://www.sirem.org/rem/

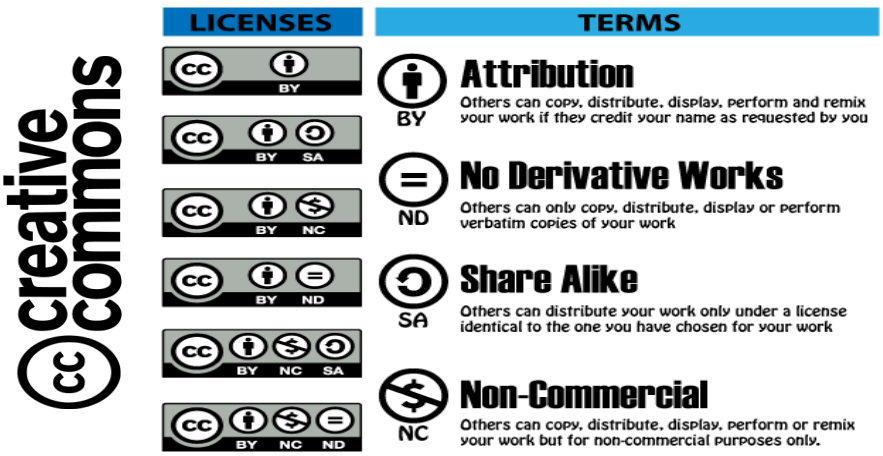
OER- Open educational Resources per aprire la didattica

Cosa sono le Open Educational Resource, di cui vediamo nell'immagine il logo proposto dall'Unesco e adottato in tutto il mondo?
Una OER è una risorsa educativa aperta:

- dal punto di vista tecnico, perché è possibile reperirla in rete e scaricarla facilmente;
- dal punto di vista economico, perché è gratuita;
- dal punto di vista legale, perché è rilasciata con una licenza aperta.

Su quest'ultimo punto occorre fare alcune precisazioni. Mentre nel caso dell'Open Access si parlava di riviste essenzialmente testuali, le Open Educational Resources sono invece multimediali, ovvero utilizzano testo, audio, immagini, video, grafica. E questo complica notevolmente la questione del diritto di autore. Anche perché la legislazione relativa al riutilizzo delle opere multimediali è più complessa rispetto alle ormai consolidate e universalmente conosciute regole della citazione fra studiosi. A questo proposito già nel 1995 alcuni autori avevano affrontato la complessa questione (Ghislandi, 1995)(Scorer, 1995)(Triberti, 1995).
Il sistema di licenze aperte più noto è quello delle Creative Commons, che dà la possibilità di riutilizzare le risorse a determinate condizioni senza chiedere prima all'autore. Le licenze Creative Commons consentono cioè un uso creativo della legge sul copyright, al fine di articolare un discorso positivo sulla cessione dei diritti. Non più "tutti i diritti riservati" bensì "concedo i miei diritti a determinate condizioni". Nella figura si possono vedere i termini utilizzati nelle Creative Commons e le condizioni che devono essere rispettate da chi intende utilizzare la risorsa.

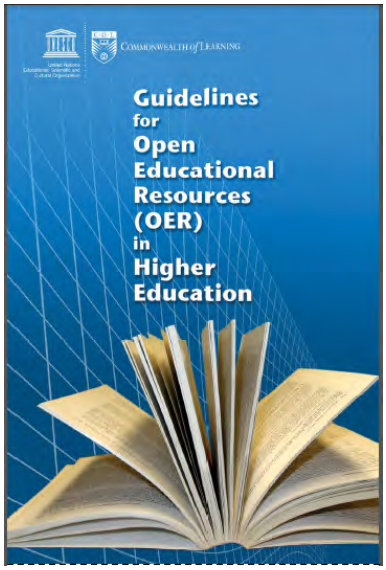
10



[10] Fonte: http://creativecommons.org/

Da ciò che è stato detto fino a qui si comprende che Open significa non solo accesso aperto, ma anche possibilità di riutilizzo, rispettando le condizioni poste dall'autore.

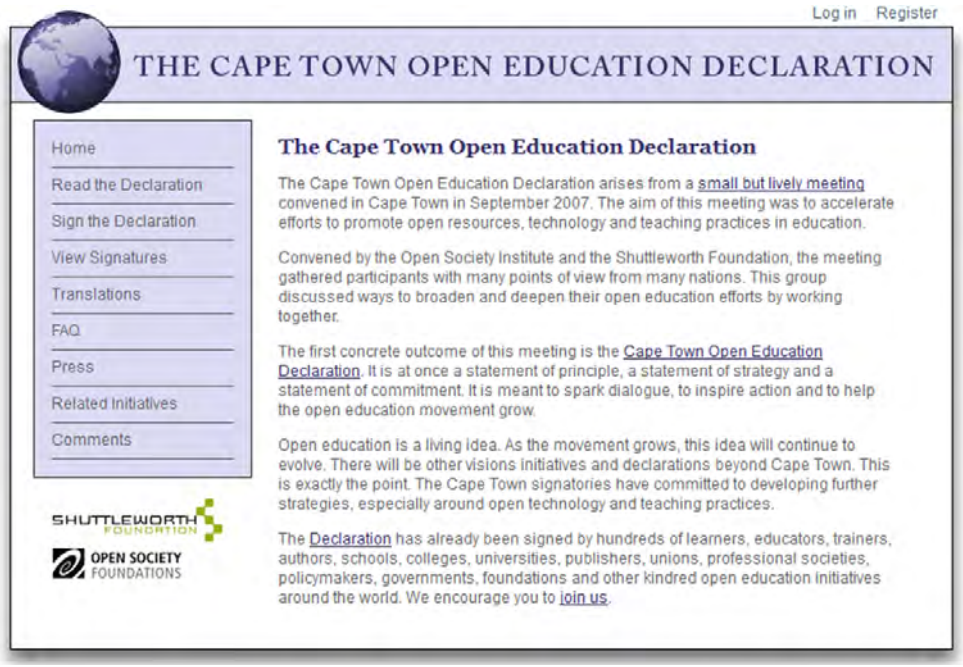
La storia delle OER inizia nel 2001, con l'iniziativa del MIT-Massachussetts Institute of Technology chiamata OCW-Open Courseware. Poi nel 2002 l'UNESCO apre il "Forum on Open Courseware for Higher Education in Developing Countries". Nel 2005 l'OECD crea il "Centre for Educational Research and Innovation", e nel 2007 viene redatta la "Cape Town Open Education Declaration". Nel 2011 viene creato il "Commonwealth of Learning" e sempre nel 2011 l'UNESCO pubblica le "Guidelines on Open Educational Resources (OER) in Higher Education"(UNESCO, 2011). Nel 2012, a Parigi si tiene il "World open educational resources congress". Infine nel 2013 l'Europa apre il portale "Open Education Europa".



[11]

Una definizione molto citata di OER è quella contenuta nella Cape Town Open Education Declaration: "[O]pen educational resources should be freely shared through open licences which facilitate use, revision, translation, improvement and sharing by anyone. Resources should be published in formats that facilitate both use and editing, and that accommodate a diversity of technical platforms. Whenever possible, they should also be available in formats that are accessible to people with disabilities and people who do not yet have access to the Internet." [xiv]
In generale si può notare che la maggior parte dei sistemi OER è voluta e finanziata dalle organizzazioni non profit, come UNESCO, Commonwealth of Learning, William e Flora Hewlett Foundation e questa definizione, così attenta all'accessibilità e all'inclusione, ne riflette lo spirito.

[11] Fonte: http://www.col.org/resources/publications/Pages/detail.aspx?PID=364



12

Un'altra definizione, più compatta, è quella di recente proposta dal . "Report to the European Commission on New modes of learning and teaching in higher education": "Open Educational Resources (OER) are any online material that is freely accessible and openly licensed for anyone to reuse and repurpose for teaching, learning, and researching" (HLGMHE- High Level Group on Modernasation of Higher Education, 2014).[xv]

Dalle diverse definizione si può osservare che ci sono alcuni elementi di discrepanza. In particolare per ciò che riguarda :

- Fonte della risorsa: prodotta per la formazione o qualsiasi, purchè utilizzabile per la formazione?
- Livello di apertura: di pubblico dominio, aperta agli usi educativi o che escluda solo usi commerciali?

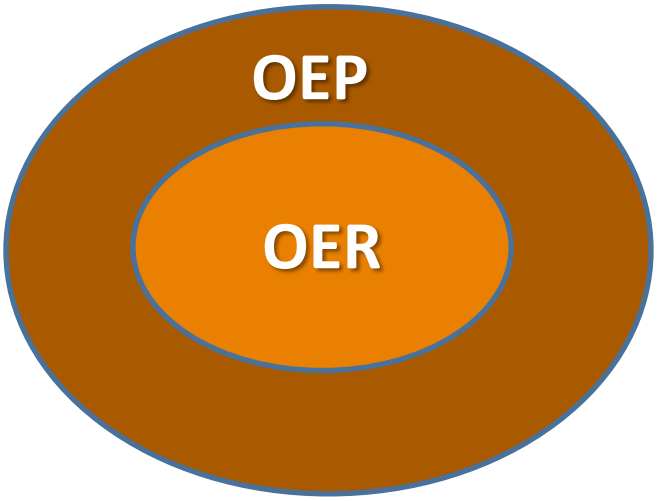
Ma ci sono anche molti punti in comune:

- possibilità di uso, riutilizzo, modifica, remix delle risorse;
- libera ridistribuzione delle risorse così ottenute;
- utilizzo libero della risorsa da parte di docenti e studenti;
- inclusione di tutti i tipi di media (audio, video, immagini, testo).[xvi]

Le risorse aperte possono essere di varia natura: corsi completi, materiali didattici, moduli, learning objects, syllabi, lezioni, compiti a casa, quiz, attività di laboratorio e di classe, giochi, simulazioni, testi, streamed video, software. In breve tutte le risorse aperte delle collezioni di media digitali, in tutto il mondo. L'Open University ha introdotto anche il termine OEP-Open Educational Practice, considerando il fatto che in alcuni tipi di OER sono inclusi alcuni elementi che sono più di una risorsa (per risorsa si intende comunemente uno spezzone video o audio, una immagine, una registrazione audio, etc.) , perché hanno l'obiettivo di rendere disponibile un metodologia o una strategia didattica. Pur riconoscendo la fondatezza della tesi, noi continueremo qui ad utilizzare l'acronimo OER, che è quello più diffuso attualmente nel mondo.

[12] Fonte: http://www.capetowndeclaration.org/

OEP-Open Educational Practice
OER- Open Educational Resources

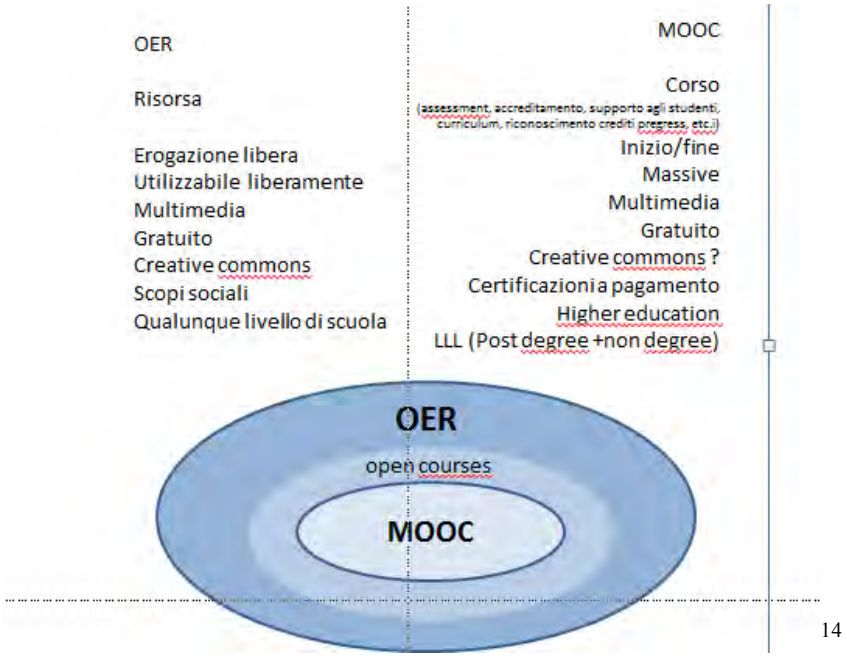


13

Gli enti che attualmente offrono OER sono tantissimi, come si può vedere dalla slide

Fonte: i siti dei sistemi OER rappresentati nella immagine

La domanda che ci si può porre a questo punto è: ma in che relazione stanno gli OER con i MOOC-Massive Open Online Courses, che tanto hanno occupato la scena, non solo scientifica, da circa un anno e mezzo? I MOOC possono essere considerati un sottoinsieme degli OER. Volendo fare una classificazione si possono trovare i punti in comune/le discrepanze che sono elencate nella figura.



14

[13] Fonte: Ghislandi, P. (2014)
[14] Fonte: Ghislandi, P. (2014)

Ovvero questi sono gli elementi di diversificazione:

3. Gli OER possono essere sia una risorsa, sia un corso. I MOOC sono corsi caratterizzati da assessment, accreditamento, supporto agli studenti, curriculum, riconoscimento crediti pregressi, etc.
4. Gli OER sono normalmente ad erogazione libera (tranne in alcuni casi per gli Open Courses) mentre i MOOC hanno un inizio ed una fine.
5. Gli OER possono essere utilizzati da una singola persona, mentre i MOOC sono generalmente fruiti da molte persone durante un determinato periodo di tempo (non a caso vengono chiamati Massive).
6. Gli OER sono generalmente Creative Commons, dal punto di vista delle licenze. E questo non sempre è così evidente nel caso dei MOOC.
7. Gli OER sono realizzati principalmente a scopi sociali ed umanitari, mentre i MOOC sono generalmente (ma non sempre) creati da società private che stanno cercando di definire il modello di sostenibilità economica.
8. Gli OER sono destinati a qualunque livello scolare, mentre i MOOC sono prevalentemente dedicati alla Higher Education e al LLL-Life Long Learning (sia post laurea che non formale)

….e gli elementi in comune:

9. Ambedue utilizzano molti media.
10. Ambedue sono gratuiti.

I docenti che progettano OER tendono ad utilizzare strategie didattiche innovative: flipped classroom; peeragogy, communities of practice sono fra le più in voga. Queste sono le caratteristiche che accomunano gli OER dal punto di vista pedagogico:

- accesso aperto : uso, riuso, remix;
- approccio learner-centered;
- studio indipendente;
- interazione supportata dai media;
- opportunità diversificate di riconoscimento dei crediti;
- focus sulla qualità;
- attenzione alla diversità.

Sul riconoscimento dei crediti e la certificazione ci sono varie possibilità

- OER non accreditato;
- OER creato e accreditato dalla propria università;
- OER creato da un'altra università e accreditato dalla propria università.

E' interessante segnalare una iniziativa , dal nome OpenBadges, sul riconoscimento dei crediti da parte di Mozilla, una comunità internazionale che collabora per far sì che tutte le persone nel mondo possano contribuire in modo informato e diventare creatori del Web. Un badge digitale è una rappresentazione delle competenze acquisite da una persona, e verificate attraverso organizzazioni credibili.[xvii]

[15]

Analizziamo ora quali sono i motivi per cui una organizzazione, o un singolo docente, dovrebbero impegnarsi nella realizzazione di OER.
Motivi per realizzare OER per l'istituzione (Hylén, 2009):

- condividere conoscenza in linea con gli scopi dell'università;
- sfruttare al meglio i finanziamenti pubblici (provenienti dalla tassazione) attraverso la restituzione al pubblico della propria produzione scientifica;
- diminuire il costo di produzione (attraverso il riuso di risorse) , velocizzare lo sviluppo di nuove risorse e migliorarne la qualità;
- migliorare le pubbliche relazioni, e attrarre nuovi studenti.

Motivi per realizzare OER per il docente:

- altruismo;
- il piacere di essere coinvolti nella produzione con i colleghi;
- una strategia per mettere a punto versioni finali (commerciali) delle risorse didattiche;
- per aumentare la propria reputazione nella comunità open;
- per avere accesso alle migliori risorse disponibili;
- per migliorare la didattica.

Su quest'ultimo punto è necessaria una riflessione. Come Shulman dice un atto di intelligenza diventa scholarship, ovvero un atto compiuto da uno studioso che vuole operare nell'accademia e contribuire al suo progresso, quando possiede come minimo queste proprietà:

1. diventa pubblico;
2. diventa oggetto di revisione critica e di valutazione da parte dei membri della propria comunità scientifica;
3. i membri della comunità iniziano ad utilizzare e a sviluppare questo atto della mente e della creatività. (Shulman, 1999)

Nello stesso modo un atto didattico, in particolare per chi insegna all'università, ma non solo, contribuisce al miglioramento e alla qualità della didattica stessa solo quando ha le stesse tre caratteristiche. Cosa che non avviene attualmente nelle aule universitarie, ma anche in quelle scolastiche, dove spesso la didattica è un atto da condividere solo con i propri studenti, e che raramente viene analizzato dai colleghi allo scopo di arrivare ad una qualità ancora migliore, in definitiva per progredire nella conoscenza.. Solo aprendo la didattica sarà possibile condividerne modelli e risorse e contribuire, attraverso un confronto con la comunità, in modo determinante al suo miglioramento.

[15] Fonte: http://openbadges.org/

16

Comunque ancora molte sono le questioni aperte riguardo le OER. Rivisitando Conole possiamo elencare le seguenti domande ancora aperte (Conole, 2013, p.246).

1. Quale è il modo più efficace di sviluppare OER?
2. Quali sono i problemi di copyright?
3. Quali sono i fattori che facilitano e che frenano lo sviluppo di OER?
4. Modelli di business sostenibile per gli OER?
5. Accessibilità e inclusione con gli OER
6. Modelli didattici per apprendimento in/formale con OER
7. Metodi di valutazione di OER
8. Modelli di accreditamento
9. Come trasferire al meglio le buone pratiche?

Secondo D'Antoni i fattori che frenano l'avvento degli OER sono (D'Antoni, 2008):

- mancanza di conoscenza delle tecnologie web 2.0;
- mancanza di preparazione sui nuovi modelli didattici;
- riluttanza degli accademici a realizzare risorse open;
- copyright;
- finanziamenti;
- fattori linguistici;
- quality assurance;
- policy d'ateneo.

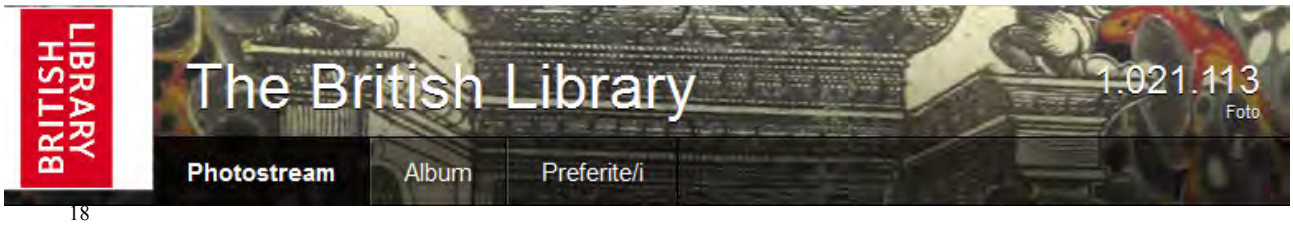
Un aiuto a valutare i rischi che si corrono nell'utilizzazione di risorse per ciò che riguarda il copyright può venire dal sito Risk Calculator, [xviii] uno strumento creato nell'ambito del "Web2Rights OER Support Project".

17

E' comunque possibile reperire immagini ed audio ad utilizzazione libera messi a disposizione sul web, come ad esempio il sito recentemente creato dalla British Library.[xix]

[16] Fonte: Ghislandi, P. (2014)

[17] Fonte: http://www.web2rights.com/OERIPRSupport/risk-management-calculator/



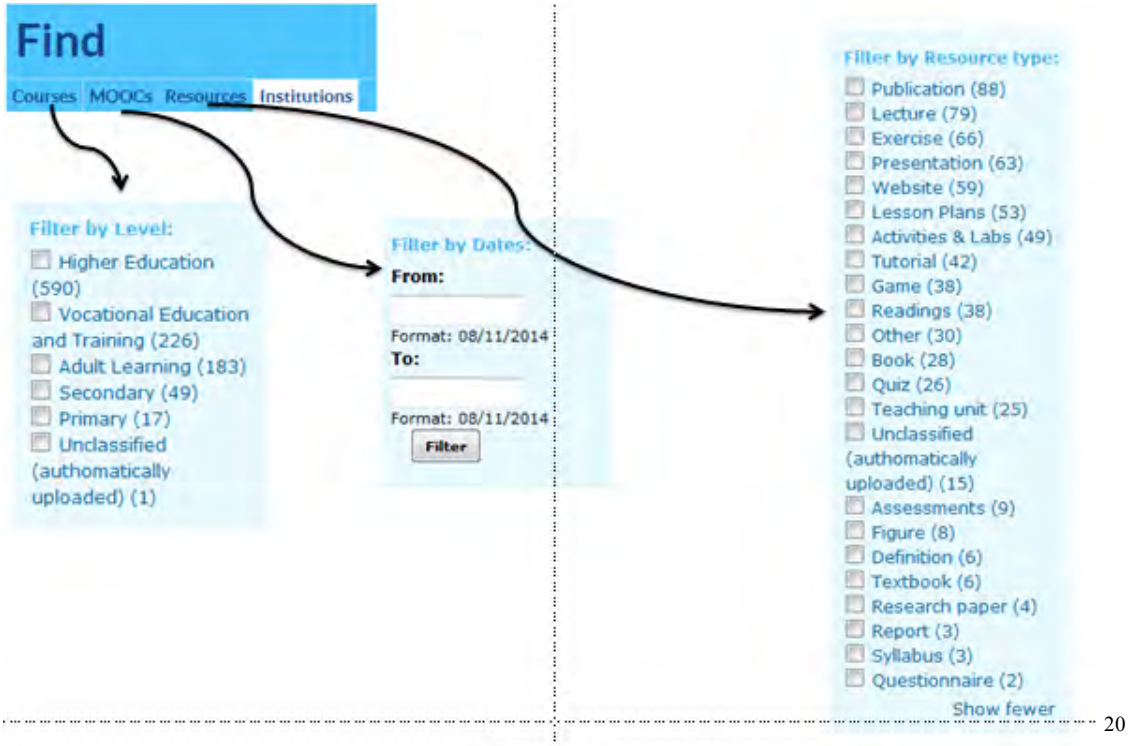
18

La commissione europea si è già pronunciata molte volte sulla opportunità di creare ed utilizzare risorse aperte, soprattutto da parte delle università. Innanzitutto con il documento Opening Up Education (European Commission, 2013)(Commission staff, 2013). Più di recente anche nel documento (HLGMHE- High Level Group on Modernasation of Higher Education, 2014) dove dice nella raccomandazione N°13, "Governments and higher education institutions should work towards full open access of educational resources. In public tenders open licences should be a mandatory condition, so that content can be altered, reproduced and used elsewhere. In publicly (co-)funded educational resources, the drive should be to make materials as widely available as possible".[xx]
Inoltre l'Unione Europea ha di recente aperto il sito Open Education Europa, che consente di reperire le OER esistenti, catalogate come Courses, Mooc e Resources.[xxi]

19

[18] Fonte: https://www.flickr.com/photos/britishlibrary/

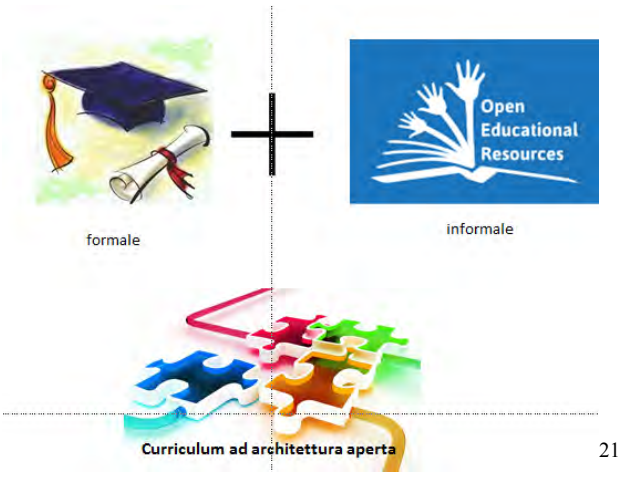
[19] Fonte: http://openeducationeuropa.eu/



20

Facendo una rapida ricerca si trova che in Italia gli enti che offrono OER sono già molti, esattamente 12 (Università di Urbino, Federico II di Napoli, Bocconi, Politecnico di Milano, Pavia, Roma la Sapienza, Uninettuno, etc.). Affinchè più università italiane possano innovare la propria didattica anche attraverso la creazione di OER è indispensabile ribilanciare l'importanza che l'accademia dà alla didattica e alla ricerca. Supportare i docenti e riconoscere le attività di insegnamento è il punto centrale per ottenere una eccellente esperienza didattica per gli studenti. Perché, come dice David Puttnam citato in Cashmore, Cane, & Cane (2013), "There is no education system in the world - none at all - that's better than its average teacher."[xxii]

In conclusione si può intravedere un futuro in cui le università accetteranno di certificare curricola aperti, costruiti attraverso crediti sia acquisiti all'università stessa sia certificati dall'accademia, ma basati su competenze acquisite all'esterno dell'università.



21

[20] Fonte: http://openeducationeuropa.eu/

[21] Fonte: Ghislandi, P. (2014)

Creatività e Open access

La creatività, le invenzioni le nuove riflessioni non nascono nel nulla. Ogni avanzamento è dato dall'osservare, dal copiare, dal trasformare, dall'integrare e combinare.
Anche Gutenberg, quando creò la stampa nel 1440 poteva contare su numerose altre scoperte, come quella dei caratteri mobili nel 1040, la pressa a vite nei primi anni dell'era cristiana, l'inchiostro nella più remota antichità in Cina; la carta in Egitto nel terzo millennio A.C.
Quindi la creatività è interdipendenza, meticciamento, influenza reciproca. Per questo la possibilità di accedere facilmente —in poche parole in Open Access— alle opere di altri autori e di riprenderle per creare utilizzando al meglio quanto è stato già ideato è fondamentale per migliorare la qualità. Come nel caso della ricerca, che è un processo continuo di costruzione sulla base di riflessioni e scoperte di altri. Come nel caso della formazione, dove la possibilità di vedere e trarre ispirazione dalle soluzioni/strategie/metodologie didattiche messe in atto da altri può portare alle soluzioni più efficaci per l'apprendimento.

Come disse Bernardo di Chartres, poi citato (appunto!) da Newton,
Noi siamo come nani sulle spalle di giganti, così che possiamo vedere più cose e più lontano di quanto vedessero questi ultimi; non perché la nostra vista sia più acuta, o la nostra altezza ci avvantaggi, ma perché siamo sostenuti e innalzati dalla statura dei giganti ai quali ci appoggiamo.[xxiii]

[22]

Ringraziamenti

Un grazie sentito a tutte le persone che hanno consentito, attraverso colloqui, letture dei loro lavori, ricerche condivise, a rendere possibile questo lavoro.

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Roberto Caso
Chiara Eberle
Steven Harnard
Antonio Mattei
Juliana Raffaghelli
Peter Dain Suber
Francesca Valentini

[22] Fonte: Immagine dalla collezione open British Library (https://www.flickr.com/photos/britishlibrary/)

E a:

[23]

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[23] *https://www.youtube.com/watch?v=v2A-HVTOBdY*

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[i] Per ciò che riguarda i libri proporre l'Open Access è più difficile perché, almeno in qualche caso, possono costituire una fonte di guadagno per gli autori.

[ii] "Con open access intendiamo la libera disponibilità di articoli su internet, con la possibilità per qualunque utente di leggere, scaricare, copiare, distribuire, stampare, cercare o fare link al full text di questi articoli, scorrerli per creare indici, passarli come dati ad un software o utilizzarli per qualunque altro utilizzo lecito". (trad a mia cura)

[iii] DOAJ-Directory of Open Access Journals, consultabile a http://doaj.org/ (30 novembre 2014)

[iv] Da un articolo di Stefano Paleari su "Il sole 24 ore" del 12 novembre 2014 ricaviamo che ogni cittadino italiano contribuisce con 109 € al finanziamento del sistema universitario italiano (Paleari, 2014)

[v] www.parliament.uk (30 novembre 2014)

[vi] La House of Commons, insieme alla House of Lords, è una delle due camera del parlamento britannico

[vii] http://www.opendoar.org/ (30 novembre 2014)

[viii] https://www.academia.edu/ (1 dicembre 2014)
https://www.researchgate.net/home.Home.html (30 novembre 2014)

[ix] http://www.sherpa.ac.uk/romeo/search.php?country=IT&la=en&fIDnum=|,&mode=simple&version (8 nov 2014)

[x] L'addendum è disponibile sul sito della Sparc-Scholarly Publishing and Academic Resources Coalition, ed è stato tradotto in italiano dall'Università di Torino. http://www.sparc.arl.org/ (1 dicembre 2014)

[xi] La policy adottata dall'ateneo trentino è stato possibile grazie all'operato di Roberto Caso, delegato all'Open Access. Ha contribuito alla definizione della policy anche Francesca Valentini, Responsabile Ufficio Anagrafe Ricerca, Archivi, Attività Editoriale dell'Università di Trento

[xii] Presso l'Università di Trento sarà anche disponibile a breve un corso di formazione online in autoapprendimento sul tema dell'Open Access

[xiii] Chi desidera farne parte può rivolgersi a Roberto Caso, dell'Università di Trento

[xiv] "Le Open Educational Resources devono essere condivise liberamente attraverso licenze aperte che ne facilitano l'uso, la revisione, la traduzione, il miglioramento e la condivisione da parte di chiunque. Le risorse devono essere pubblicate in formati che ne facilitino sia l'uso sia l'editing, e che possano essere viste su diverse piattaforme. Ove possibile devono anche essere disponibili in formati che siano accessibili alle persone con disabilità e a persone che ancora non hanno accesso a internet" (trad. a mia cura)

[xv] Open Educational Resources (OER) sono qualunque materiale online che sia liberamente accessibile e che abbia licenze di tipo aperto affinchè chiunque possa riutilizzarle e rieditarle per l'insegnamento, l'apprendimento, e la Ricerca" (traduzione a mia cura)

[xvi] https://wiki.creativecommons.org/What_is_OER%3F (1/12/2014)
http://www.sparc.arl.org/ (1/12/2014)

[xvii] http://openbadges.org/ (1/12/2014)

[xviii] http://www.web2rights.com/OERIPRSupport/risk-management-calculator/ (1/12/2014)

[xix] https://www.flickr.com/photos/britishlibrary/ (1/12/2014)

[xx] "Governi e istituzioni accademiche dovrebbero cercare di arrivare a mettere a disposizione le loro risorse didattiche in modo completamente open. Nelle offerte pubbliche le licenze open dovrebbero essere una condizione obbligatoria, in modo tale che il contenuto possa essere alterato, riprodotto o utilizzato altrove: Per ciò che riguarda le risorse didattiche cofinanziate pubblicamente si dovrebbe fare in modo che il materiale sia disponibile ad pubblico più vasto" (trad. a mia cura).

[xxi] http://openeducationeuropa.eu/en (1/12/2014)

[xxii] "Non esiste sistema educativo al mondo –ma proprio nessuno—che sia migliore del suo insegnante medio" (trad. a mia cura)

[xxiii] Così diceva, intorno al 1120, Bernardo di Chartres citato in George Steiner, *Una certa idea di Europa* (*The idea of Europe*), X Nexus Lecture, traduzione di Oliviero Ponte di Pino, prefazione di Mario Vargas Llosa, prologo di Rob Riemen, Garzanti, Milano, 2006, p. 23.

La Società Italiana di Ricerca sull'Educazione Mediale (SIREM) e la Società Italiana di e-Learning (Sie-L), assieme alla Rete Universitaria Italiana per l'Apprendimento Permanente (RUIAP), hanno scelto di organizzare un Convegno per rilanciare una tematica sempre più "vitale" per la sussistenza dell'istruzione superiore e della cultura del Paese.

Il Convegno – Apertura e flessibilità nell'istruzione superiore: oltre l'e-learning? – intende affrontare la questione della formazione universitaria e dell'apprendimento permanente alla luce delle tendenze di ricerca e di esperienze nazionali e internazionali significative.

La diffusione sociale delle nuove tecnologie e il loro protagonismo nelle pratiche informali e non formali rendono necessario e inderogabile un rinnovamento e un potenziamento delle modalità didattiche e, prima ancora, un'attenta riconsiderazione dei fini stessi dell'istruzione superiore.

La riflessione verterà sulle problematiche che possono ostacolare o favorire l'innovazione nella formazione alla conoscenza, inevitabilmente permeata dalle tecnologie. Nello specifico, il Convegno analizzerà le barriere sia di primo livello – politiche, istituzionali, strutturali, organizzative – sia di secondo livello – tratti personali degli attori dei processi formativi, in primo luogo, leader, docenti, studenti – che, al contempo, possono essere predittori dell'innovazione e facilitare apertura e flessibilità dei sistemi di conoscenza.

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