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Is UniPR ready for

Open Education and... MOOP?

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Abstract

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Open education, fostered by developments in ICT over the last three decades, is recognized to be a potentially transforming factor, but has not led to the expected deep revolution in teaching practices in many Universities. In spite of Open Educational Resources (OER) being available online, and of the Massive Open Online Courses phenomenon currently receiving a great deal of attention, not much evidence is available, in academic institutions in Italy, of investigation into the perceptions of those, the teachers, who could transform opportunities into practice. The purpose of this study was to explore teachers' perceptions about their readiness, in a pedagogical and technological perspective, to open up education by OER, adopting Open Educational Practices and teaching in MOOCs, in a view to enhancing students' learning, and about them having the necessary competences. The research consists in a qualitative case study conducted at the Research Centre UniPR Co-Lab of the University of Parma; data were collected through semi-structured interviews and documents analysis, and constant comparative analysis was employed. Four main categories matching the research objectives were identified and discussed: open approach — rather than open content for learning enhancement; readiness gap to open up education in a pedagogical and technological perspective; teacher's strategy and perceived role in relation to

learning enhancement by open approaches; perceived challenges and opportunities to foster open approaches. The research shows that open practices by OER and MOOCs are not realized: in spite of teachers showing a potentially open approach to learning, knowledge and competence gaps are perceived under the technological and most of all the pedagogical points of view, together with specific needs for strategies and for a re-designed support. The study offers methodological implications and recommendations for an integrated way to face the readiness gap and raises new questions as a starting point for further research.

Keywords

Open education, open learning, open educational resources, MOOC, open educational practices, OER, OEP, readiness, learning enhancement, OER digital libraries

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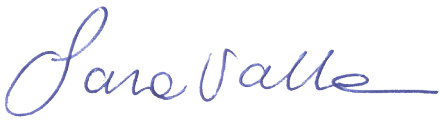
Abbreviations

- AIE: Associazione Italiana Editori
- CASPUR: Consorzio interuniversitario per le Applicazioni di Supercalcolo per Università e Ricerca
- CNR: Centro Nazionale delle Ricerche
- CRUI: Conferenza dei Rettori delle Università Italiane
- EFQUEL: = European Foundation for Quality of Elearning
- HEFCE: Higher Education Funding Council for England
- ICT: Information and Communication Technologies
- IDEM: IDEntity Management
- ITD: Istituto Tecnologie Didattiche (CNR)
- MIT: Massachusetts Institute of Technology
- MOOC: Massive Open Online Course (MOOCs is the plural)
- MOOP: Massive Open Online Pedagogy
- OCW: OpenCourseWare
- OECD: Organisation for Economic Co-operation and Development
- OEP: Open Educational Practices
- OER: Open Educational Resources
- OPAL: Open Educational Quality Initiative
- SIAE: Società Italiana degli Autori ed Editori
- UNESCO: United Nations Educational, Sicentific and Cultural Organization
- VPN: Virtual Private Network
- RMS: Reference Management Systems

Declaration and Plagiarism Disclaimer

The opinions expressed in this dissertation are solely those of the author and acceptance of the dissertation as a contribution to the award of a degree cannot be regarded as constituting approval of all of its contents by the Division of Information & Communication Studies.

I certify that all material in this dissertation, which is not my own work, has been identified and properly attributed.



Signed:

Date: 20th June 2014

Introduction

This research has been designed to answer the following questions: How can open education enhance learning in the opinion of educators? Why should they adopt open approaches? Are they ready and willing to adopt open approaches in a pedagogical and technological perspective? Do they have the necessary competences?

This research aims to establish the role and possibilities of **Open Educational Resources**, **Open Educational Practices** and the **MOOCs phenomenon** in relation to **learning enhancement** in an **academic environment** and to identify and gain insight into the **pedagogical** and **technological implications** that **open approaches** may have.

It further aims to explore the **perceptions** of those people — the **teachers** — who might be involved in the use of Open Educational Resources and the MOOCs at the University of Parma.

Background to the research

ICT development and education

As stated by Laurillard (2004, p. 8) "**the development in information and communication technologies (ICT)** over the last three decades is comparable with the development in information and communication technologies over the last three millennia". **The impact of technologies on education** is believed to have expanded rapidly in the last decades (Gráinne Conole & Oliver, 2006) and to be **potentially revolutionary**; as a matter of fact, some authors talk about technologies in terms of their being **disruptive** and **bringing**

about great changes (C. Christensen, 1997) (Sharples, 2002) (Gráinne Conole, De Laat, Dillon, & Darby, 2008). Nevertheless, according to some researchers (Mishra & Koehler, 2006) (Gráinne Conole, 2007) (Kinchin, 2012) (*Anant Agarwal Ted Talk*, 2013)(Bryant, Coombs, Pazio, & Walker, 2014) huge changes in technology and in many other fields have **not** been **followed by the same level of transformations and integration in higher education institutions about learning**: **teachers and institutions seem to react slowly to the changes**; there is therefore a **gap** between the **personal use** of technological tools and a **diffused adoption** of the same tools **for teaching and learning** (Ranieri, 2012). In an effort to show how education-related technologies have developed over time, Conole (2012) presents a timeline that shows different ways of facing education by using different technologies (Fig. 1 p. 18). In her timeline some milestones are evident, such as the Internet and the web, mobile devices, Open Educational Resources since 2001, as well as e-books and Massive Open Online Courses (MOOCs) since 2008.

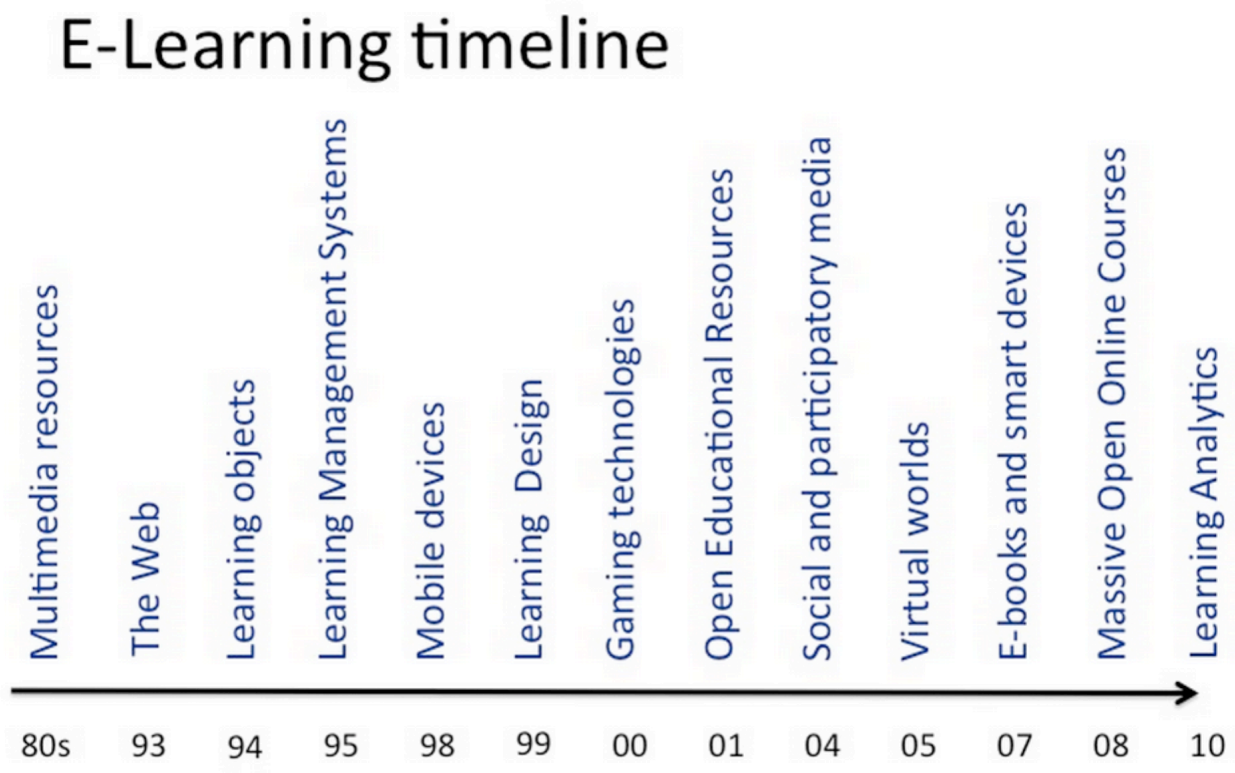


Fig. 1 E-Learning timeline (Gráinne Conole, 2012)

Open education and learning (r)evolution – the international context

Open Education is among the **potentially transforming movements in institutions**; nevertheless, it has been acknowledged that it has not led to the deep revolution in learning it might have taken to, as it has **not translated into common practices by teachers** (Gráinne Conole, Mulder, & Mairesse, 2012) (Gráinne Conole, 2013a). Indeed, missing the objective of transformation seems to be confirmed by some actions, which are being proposed as necessary in order to foster it ("Paris OER Declaration," 2012) (European Commission, 2013). Since the start of Open Courseware initiative (OCW) by the Massachusetts Institute of Technology (MIT) in 2001, when the content of their

courses started to be freely and openly published and available online on a regular basis, initiatives, researches and literature in the field of Open Education and Open Educational Resources (OER) have proliferated. As stated by Professor Dick K.P. Yue, Professor at MIT School of Engineering, "The idea is simple; to publish all of our course materials online and make them widely available to everyone" (“About OCW,” 2001).

The literature and the reports by international organizations often concentrated on the **definition** (Butcher, 2001)(*Giving Knowledge for free - The emergence of Open Educational Resources*, 2007) (Wiley, Bliss, & McEwen, 2014), on the **history/evolution** of Open Educational Resources (Wiley & Gurrell, 2009), and on **lists of possible benefits and challenges for learners, educators and institutions to the use and creation of Open Educational Resources** (Friesen, 2009) (Hodgkinson-Williams, 2010) (D’Antoni, 2012).

From the United States, where it began, the OpenCourseWare movement has spread throughout the world over the years. Ten years after the first definition of Open Educational Resources, during the World OER Congress that was held at UNESCO in Paris in 2012, the main recommendations to the Member States were - among others - to "foster awareness and use of OER", to "facilitate enabling environments for use of Information and Communications Technologies (ICT)", "support capacity building for the sustainable development of quality learning materials", "encourage research on OER", and "encourage the open licensing of educational materials produced with public funds" (“Paris OER Declaration,” 2012).

On the other hand, the recent trends of some research and initiatives on quality in education ("OPAL | Open Educational Quality Iniziative," 2011) are tending towards a vision that considers openness in the educational ecosystem as a situation in which "**resources are no longer the sole focus** but in which the practices within a specific domain are the focus of education" (Gráinne Conole, 2013b, p. 250). **Open Educational Practices get over the view of content** and offer a holistic scene regarding the concept of openness, including different dimensions, which include, among others, strategies, innovations, tools and tool practices (technology and pedagogy), barriers and success factors, skills development and support (competences).

Open Educational Resources and the Italian context

In the Italian context, the CRUI (Conferenza dei Rettori delle Università Italiane) Library Commission established a working group on Open Access in 2006, to satisfy the principles contained in the Berlin Declaration ("Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities," 2003). A subgroup was created for Open Educational Resources and the first results of a survey on OER conducted in 2013 in Italian Universities were presented at the Sie-l Conference in Rome in December. The results show an apparently developing situation **in Italy**, in which **awareness on OER seems to have increased in the academic environment** in comparison to previous years. If compared to the results of the previous CRUI-SIAE-AIE survey carried out by CASPUR in 2011 — when 14% of respondents showed awareness regarding OER — there has been an increase by 11%, up to 25%. The findings also suggest that

respondents acknowledge the fact that Open Educational resources can play an important role in a diffused enhancement of learning. The authors also recognize the **need for institutional strategies** on OER, and consequently a **need for competences and support inside institutions** (Tammaro, Roncaglia, De Robbio, Panto, & De Rosa, 2013).

Openness (in learning) as a choice

In spite of European recommendations and national initiatives being important and mentioned, as it has been underlined by (Jacobi, Jelgerhuis, & Van der Woert, 2013, p. 9), **openness must be a choice**. For this reason, the decision for "opening up education" and fostering "innovative teaching and learning for all through new Technologies and Open Educational Resources" (European Commission, 2013) is a strategy that has to be believed in and shared between different hierarchical levels in the Academy. Moreover, all the actors and stakeholders (institutions, educators and learners) have to choose the role to "play in open and online learning" (op. cit., p. 9).

As explained, the situation regarding Open Learning, Open Educational Resources and Open Educational Practices (OEP) is therefore a debated one, and much is being discussed. Although researchers have identified the main potential benefits and challenges to the development of OER and OEP (Hodgkinson-Williams, 2010) (Chen, 2010), and even though guidelines and recommendations exist, the use (and most of all the reuse and re-purposing) of Open Educational Resources and the adoption of Open Educational Practices does not look as widespread as the premises and conditions would suggest.

This happens both on a national and European level; the initiative "Opening Up Education", which was launched in September 2013, is an effort to improve use and reuse of Open Educational Resources, starting from the belief that Information and Communication Technology Tools, Open Educational Resources and Open Practice are ways to enhance education effectiveness (European Commission, 2013).

Do teachers and learners share such opinions about open education being a way to enhance learning? Where learning is concerned, **people are key**; there seems to be a gap in research about exploring the real perceptions towards the role of open learning to enhance the learning of those people who might use/create open educational resources and adopt open educational practices, that is learners and educators. There is therefore a need for an exploration of teachers' perceptions and for answering to some questions. What is the real and practical meaning of open learning for teachers? How do the benefits and challenges that have been identified for the diffusion of Open Educational Resources translate into real life and learning?

The educational earthquake of MOOCs

In the above described environment a further phenomenon has emerged, which has apparently struck the world of higher education like an earthquake: the **Massive Open Online Course (MOOC) phenomenon.** The extent of such a phenomenon — since the word MOOC was coined by David Cormier regarding the "first MOOC", that was organized by Stephen Downes and George Siemens (Cormier, 2008), and even more so since 2012, the year that The New York Times

recognized as "The year of the MOOC" (“The Year of the MOOC,” 2012)— has led many Universities and organizations to ride the wave and offer MOOCs; some Universities have created MOOC-style courses, many others are intending to do so, too. The United States are the precursors, but Europe is following the track and the Second MOOC European Stakeholders Summit was held in February 2014 in Lausanne, where "European actors involved in the Massive Open Online Courses (MOOCs) phenomenon, from policy makers to practitioners to researchers" gathered (“EMOOCs 2014 Conference | February 10-12, 2014 in Lausanne (Switzerland),” 2014), to share opinions and trends on Policy, Experience, Research and Business concerning MOOCs. The growth-rate of MOOCs and open courses available on open websites as of February 2014 showed a continuous increase in the number of MOOCs, both in Europe (10%) and in non European countries (15%), in the previous year (“European MOOCs Scoreboard,” 2014). Most importantly, models are being researched and pedagogical experiments are being carried out (“Latest tally shows 12% global growth of MOOCs,” 2014, p. 12). In spite of the above-mentioned increase of experiences and research in the field of MOOCs, experiences in Italy are instead not so frequent; moreover, there seems to be a need to reflect about a general readiness for open practices and MOOCs and a need for research related to their really being a possible way to enhance learning.

Readiness for Technology Enhanced Learning, Open Learning, MOOCs

As is more evident in the literature review, some years ago authors such as Chapnick (2000), Haney & Haney (2002), Guglielmino & Guglielmino (2003) Aydın & Tasci, (2005) explored the dimensions and factors for **e-learning readiness** in institutions; currently, the present complexity of the educational environment calls for a change. Considering the fact that change management theories identify **readiness as an important factor for successful implementation of change**, readiness for change is seen here as a necessary condition to support (or refuse) a change, and as a level of possible involvement of the members of an organizations in change, based on their attitude towards the implications of such a change (Holt, Armenakis, Harris, & Feild, 2007) (Armenakis, Harris, & Mossholder, 1993, pp. 681–2) (Jones, 2005, p. 362).

As far as **Technology Enhanced Learning readiness** is concerned, this has been broadly discussed in the considerable amount of literature available, but it has often been referred to as readiness for e-learning by institutions (Aydın & Tasci, 2005)(Chapnick, 2000); no specific studies seem to be available about readiness for open practices or MOOCs. Reviewing the literature has made it possible to draw a useful list of initial concepts to refer to, when talking about readiness related to open learning and MOOCs, in a combined technological and pedagogical perspective. Starting from the institutional e-learning readiness (also including factors which are specifically relevant to the organization, as finance and financial

readiness, environmental issues, infrastructure etc.), some aspects have been delimited, which specifically refer to **people** or to their perceptions, as a starting point from which to explore readiness from the teacher's point of view: content and knowledge availability, attitude towards technology, attitude towards self-development, attitude towards innovation, sociological aspects and collaboration, technological skills.

It seems therefore appropriate to identify and gain insight into the pedagogical and technological implications that this multi-faceted concept of openness may have, and to explore the perceptions of those who might be involved in the use of Open Educational Resources and the MOOCs: institutions, and first of all the people who act inside them in the learning and teaching process, i.e.: the learners and educators.

According to constructivist and social constructivist theories, learning is an active construction of meaning; teaching, in this context, is about "making learning possible" (Ramsden, 1992, p. 5) , and the teacher's role as a guide (Kelly, 1991) who promotes, facilitates, mediates (Brooks, 1999). However, teachers are not only this; where learning enhancement by means of technologies is concerned, teachers are also often playing a learners' role; they continuously need to learn and experience how to better promote and enhance learning by using technologies in an appropriate way.

A need for research

Technology Enhanced Learning [1], Open Learning [2] and MOOCs are therefore investigated in the present study as possible tools to enhance learning quality in higher education in teachers' perceptions.

What do the above mean to educators in terms of enhancing learning?

Although recent national initiatives in Italy seem to be attempting to stimulate the creation of MOOCs ("La sfida sulla Open Education," 2014), at the level of single academic institutions no significant research and thus not much evidence is available in Italy that focuses on the perceptions of educators and learners about their **readiness**, in a pedagogical and technological perspective, to open up education in order to foster teaching and learning, to teach and learn in MOOCs (and consequently about them having the necessary competences).

This was the rationale for this study, which aims to gain a deeper insight and comprehension of the issue in the academic environment of the University of Parma, from the point of view of educators with a specific interest in continuing enhancing learning in the present complex landscape.

SUMMARY OF BACKGROUND

The developments in information and communication technologies do not always appear to be paralleled by an equivalent number of transformations in education and application the people involved. This is what apparently

[1] Defined and explained in the Literature Review, page 83
[2] In its broader meaning, including different dimensions, as further discussed in the Literature Review

happened to Open Educational Resources and Open Learning, in spite of the potential of Open Learning to transform education.

Firstly, initiatives (e.g. The OpenCourseWare initiative), movements (e.g. the OpenCourseWare Movement, the Open Educational Resources and Open Educational Practices movement) and the literature underline benefits and challenges of open learning. Attention has been given to open learning and Open Educational Resources by UNESCO and the European Commission, and confirmed in Italy by the research by CRUI in the Italian context. Nevertheless, only contextualized research might offer the reasons why many institutions do not consider open learning as strategic and/or necessary to be adopted (used and re-used) in practice by educators.

The MOOC phenomenon has added another level of complexity in such a multi-faceted environment; since the phenomenon burst onto the scene in 2012, Massive Open Online Courses have increasingly been organized all over the world; MOOCs are another way of opening up education from different points of view but still there seems to be a lack of investigation into the perceptions of those who could and should organize and promote them, that is teachers. It might be useful to go back to the e-learning readiness concept and the relevant research and to consider readiness for change in such a landscape, and to explore the perceptions of educators about their readiness, in a pedagogical and technological perspective, to open up education and to organize MOOCs. This is what this study attempts to do, by gaining a deeper insight and comprehension of the issue at the University of Parma, and exploring the point of view of educators with a specific interest in e-learning as a way to enhance learning.

Statement of the problem

Nowadays there are experiences of repositories and digital libraries of Open Educational Resources for learning at the European level. The present situation shows an increase in the number of courses organized, which are considered and marketed as MOOCs. Nevertheless, in spite of potential benefits being made evident from the copious literature, both the European and national scenes show that the use and reuse of Open Educational Resources and the adoption of Open Educational Practices by teachers (and learners) are less common that would be expected when considering the possible benefits they might introduce (*Giving Knowledge for free - The emergence of Open Educational Resources*, 2007) and teachers are not using OER nor adopting practices (Gráinne Conole, 2013b). Moreover, lists of benefits and challenges are only useful if considered in the specific contexts of application and together with the perceptions of those who are the main actors of learning, educators and learners.

Among the ways of opening up education, Massive Open Online Courses are receiving a great deal of attention both in the United States and in Europe in different kinds of environments, including academy; in Italy a "competition" has been launched by the Ministry of Education in March 2014, with prizes to individuals or organizations for planning a MOOC ("La sfida sulla Open Education," 2014); in spite of such trends, informed decisions are necessary for those who are willing to adopt them, if the aim is to enhance learning, rather than following a fad, and more than simply "courses" made available by developments

in Information and Communication Technologies, it might be worth also considering MOOCs in the pedagogical perspective; this is why the title of the research proposes the term MOO**P**.

Among the projects that are being launched in 2014 by the managing staff at the University of Parma ("Programmazione dell'Università degli Studi di Parma - Triennio 2013-2015," 2014), with the purpose of promoting "quality of the academic system" and improving "services for students", a proposal has been made to consider the opportunity to adopt MOOCs in the frame of a project to enhance English Language Learning and to also consider MOOCs in the perspective of a possible solution for further future initiatives. The critical issues evidenced by an analysis of the present situation with reference to language learning at the University of Parma have been identified in: time, motivation, lack of appropriate cognitive strategies, the need for improvement in the students' and teachers' digital competences in supporting / sustaining language learning. The critical factors emerging from the results of the analysis might possibly apply to learning in other domains, and some of these factors also appear among the main principles and conditions for learning to happen to maximum effect when constructivism and social constructivism learning theories are applied [3] : engagement, social activities, contextual learning, time to learn, motivation.

This study attempts to explore how the adoption of open approaches to learning and the organization of MOOCs might face and solve

[3] See the Literature Review, page 83

critical learning issues in the opinion of teachers. Which perceptions do the teachers at the University of Parma have about open learning and MOOCs in both a technological and pedagogical perspective? Do they believe they might enhance learning? Do they feel they have the necessary competences to properly adopt them?

Summary of Statement of the problem

In spite of Open Educational Resources being available online in Europe in many forms, and in spite of MOOCs receiving a great deal of attention and being on the agenda of many institutions, the impression is that Open Educational Resources are not widely and commonly used and reused and Open Educational Practices are not adopted by teachers (*Giving Knowledge for free - The emergence of Open Educational Resources*, 2007) (Gráinne Conole, 2013b). Among the projects on the agenda for 2014 at the University of Parma, one involves English language learning enhancement, starting from the critical issues which emerged from an analysis of the situation carried out at the beginning of 2014 ("Programmazione dell'Università degli Studi di Parma - Triennio 2013-2015," 2014). This has been considered an occasion to reflect on the possibility of open learning and MOOCs to be suitable ways to face such critical factors and enhance learning. In the attempt to explore how the adoption of open approaches and the organization of MOOCs might help solve learning critical issues, exploring the perception of teachers is considered of major importance, and it is what this study attempts to do. Teachers are in fact those who might use (and reuse) Open Educational Resources, possibly adopt Open Educational Practices, and teach in MOOCs.

Purpose of the study

From the literature survey carried out (see the Literature review) it has been envisaged that there are many discussions about open education and MOOCs in Europe, but little evidence about using and reusing open educational resources by teachers to enhance learning, and little research that actually focuses on the exploration of readiness for open learning and MOOCs. Taking into account such a research gap in the perceived readiness to "open learning" and teaching and learning in MOOCs from the individuals' point of view (both educator and learner), from both a technological and a pedagogical perspective, the present study focuses on an investigation of teachers' perceptions, i.e. the people who might be involved in the use and creation of Open Educational Resources, adoption of Open Educational Practices and in teaching in MOOCs at the University of Parma with a view to enhancing students' learning. The aim is therefore also to establish the role and possibilities of Open Educational Resources, Open Educational Practices and the MOOC phenomenon in relation to learning quality in an academic environment and to identify and gain insight into the pedagogical implications that this concept of openness may have.

Research questions

Starting from the statement of the problem, the research questions that this study attempts to answer are the following:

- What does open education mean to educators in terms of enhancing learning?

- Are educators ready and willing to open up education in a pedagogical and technological perspective?
- Do they have the necessary competences?

Aims and objectives

The **aims** of this research are:

- to establish the role and possibilities of Open Educational Resources, Open Educational Practices and the MOOC phenomenon in relation to learning enhancement;
- to identify and gain insight into the pedagogical and technological implications that this concept of openness may have;
- to explore the perceptions of teachers, who might be involved in the use of Open Educational Resources and the adoption of Open Educational Practices and the MOOCs.

The **objectives** deriving from the research questions and from the established aims are the following:

a) to explore the concept of learning and learning quality in the theoretical framework of constructivism and social constructivism;

b) to explore the concept of Technology Enhanced Learning in relation to learning enhancement;

c) to explore the concept of open learning as made explicit in Open Educational Resources, Open Educational Practices and the MOOC phenomenon;

d) to explore teachers' perceptions in relation to the pedagogical implications of adopting Open Educational Resources or Open Educational Practices and MOOCs in their courses;
e) to explore teachers' perceptions in relation to the technological implications of adopting Open Educational Resources or Open Educational Practices and MOOCs in their courses;
f) to explore teachers' perceptions in relation to the competences and the support needed to adopt Open Educational Resources or Open Educational Practices and MOOCs.

Part of the objectives (a,b and c) are fulfilled by literature review and part (d, e and f) are fulfilled by data collection.

Significance of the study

Open education and MOOCs are debated aspects that are currently on the agenda of many higher education institutions worldwide. In Italy there is an interest by the Government in the organization of MOOCs as it is evident from the initiative that has been launched in the first months of 2014 ("La sfida sulla Open Education," 2014); the research carried out in 2013 by the CRUI working group on Open Educational Resources confirms that institutional strategies are necessary for the adoption of Open Education to enhance learning by appointing competent resources to offer support and services related to open learning. At the University of Parma the current strategy and planning directions suggest to investigate

Unfortunately, little research in Italy faces such an issue in a qualitative way, by exploring the perception of teachers about how the

adoption of open approaches to learning and the organization of MOOCs might enhance learning. Such an exploration is exactly what this study attempts to carry out.

The study contributes to this research by analysing a case study (the UniPR Co-Lab Research Centre at the University of Parma) that gives insight into what open education (and therefore also MOOCs) mean to educators in terms of enhancing learning, and about educators being (or not) ready, competent and willing to open up education in a pedagogical and technological perspective.

The results of this research could inform stakeholders interested in learning enhancement at the University of Parma on the perceptions on Open Learning and MOOCs by some teachers who share awareness and values about technology enhanced learning, and be a starting point for further research on this topic among other teachers and possibly also involving students.

Methodology

The research questions that the study attempts to answer are of an exploratory and descriptive nature; therefore, a constructionist epistemology has been adopted, as well as a qualitative approach, primarily relying on human perception and understanding. The chapter describes in details the choices that were made.

Research paradigm and approach

The research question in this study is about investigating what open education means to educators in terms of enhancing learning, and how teachers perceive their position towards opening up education, considering both the pedagogical and technological perspectives. Are they ready and willing? Do they possess the necessary competences? In spite of the chosen sample of teachers sharing some values, each of them operates in his/her topic domain, and each of them has a certain set of teaching (and learning) experiences, so that individual perceptions even of similar concepts are different. Reality is therefore not universal: it depends on the individual and is embedded in and influenced by time and context (Dervin, 1997) (Flick, 2002).

In this research, a constructionist epistemology has been applied; this implies that meaning is not possible without a mind and all meaningful reality is constructed by human practices, by empathetic interactions between human beings and their own world, within a social context. The consequences of Constructionism not being about replicability, due to the importance of the individual's previous knowledge and

experiences in interpretation, call for methodological and descriptive rigor in this research.

Given the above premises and the chosen research paradigm, a qualitative approach and methodology has been chosen in the present study, which "relies primarily on human perception and understanding" (Stake, 2010b, p. 11); in actual fact, starting from the research question and its relevant aims, the purpose of the study is qualitative in nature, as it is about investigating and understanding teachers' perceptions about the role of open learning and learning by MOOCs in enhancing learning and it considers the context -- a specific academic environment -- as influencing this understanding. It has been confirmed in the literature that qualitative research fits when investigating how things work in the constructed world of teachers (Stake, 2010b, p. 11). In qualitative studies, rather than looking for relationships between variables, for causes and effects, and rather than considering uniqueness as an error, the research question is about looking for all kinds of information, expected, unexpected and unanticipated (Stake, 1995, pp. 39–42).

Since the research focuses on teachers' perceptions and individual's experiences and behaviours in context, the researcher used herself as a research instrument (Maykut & Morehouse, 1994, p. 24), having to deal with human interaction and knowledge of the topic at the same time (Kvale, 1996, pp. 125–147) in order to apply data collection techniques in the most appropriate way for the investigation. This allows for "producing meaning from data and using that meaning to develop theory" (Pickard, 2007, p. 14).

Research method: the case study

The **case study** method was adopted in the present research, as a way of conducting a research project according to a certain set of methodologies (Pickard, 2007), because it was considered the most suitable for the purpose of the study to address the research questions, aims and objectives and to get a better understanding and in-depth investigation of the unit of enquiry in its real-world context (Yin, 2011). The researcher selected her working environment as the site of the case study for both reasons related to her research interests and practical reasons, as in a case study the researcher spends a lot of time on site and is personally in contact with the activities, and constantly reflects on what goes on (Stake, 2003, p. 203). As regards the choice of the unit of analysis, this investigation is a case study of the perceptions of those teachers at the University of Parma who are in contact via the UniPR Co-Lab Research Centre and share the same values concerning **the importance of technology enhanced learning in the academic pedagogical landscape to enhance learning.** The "particular within context" (Pickard, 2007, p. 85) is investigated, i.e. their perceptions about open education in a pedagogical and technological perspective are explored, and their being ready to adopt Open Educational Resources, Open Educational Practices and MOOCs to enhance learning at the University of Parma. This is done to "catch the complexity" (Stake, 2010b, p. xi) even if it is a single case, and to understand activities in specific circumstances. As advised by Yin (2009), a case study is the right method when the

focus is on a contemporary phenomenon within some real-life context, as it is in the present study.

This is an "instrumental case study": rather than having an intrinsic interest in the case itself (Stake, 2010b, p. 3), there is a need for understanding and getting an insight into the perceptions of open learning and the phenomenon of MOOCs in order to enhance learning by studying the particular case of some teachers at the University of Parma who are joining in the UniPR CO-Lab Research Centre, which attracts shared values about the role of information and communication technologies as a tool to enhance learning. The case is therefore a "vehicle for our investigation" (Pickard, 2007, p. 85).

In spite of emergent design being an advantage, a broad research schedule including a Gantt Chart was defined (see Appendix no. 18), and as a guideline throughout the process. Reference was made to the examples and the path proposed by (Pickard, 2007, pp. 87–93) and to an example supplied by the Master's local coordinator.

The research questions required to inquire about people and programs as a single case (Stake, 2010b, p. xi) and to understand them, rather than looking for measurements, and a qualitative case study was chosen instead of a quantitative one for this reason.

The fact that the case study looks at only one situation might be seen as a limitation, but this allowed to look carefully at different levels.

The purpose of the research is not reaching a generalization (Stake, 1995), which is also "impossible in the traditional scientific sense" (Dervin, 1997, p. 14) but to explore the experiences and situations of teachers in their daily academic contexts and interpret them (Stake,

2010b, p. 11); the exploration of the perceptions of teachers allows for situational examples (Stake, 2010b, p. 11) to emerge.

A detailed description of the context was included, to look for accountability, meaning by this a possible transferability to similar situations.

Considering that one of the first steps in case study research is to decide on the unit of analysis, which can be a "person or a group of people, a programme or a system" (Pickard, 2007, p. 88), this was the first step that was taken.

Sample and sampling method

As encouraged by Lincoln & Guba (1985), two key informants were used who, thanks to their involvement and knowledge of the case, helped in identifying the members of the sample as “information-rich sources within the case" (Pickard, 2007, p. 88) to gain rich in-depth pictures by purposive sampling. The researcher being a member of UniPR Co-Lab, and herself already part of the context, albeit with a different role than that of the teachers, further facilitated this process.

Considering that "sampling is the process of selecting a few from the many in order to carry out (...) research" (Pickard, 2007, p. 59), and the selected method and approach depend on the aim of the investigation, the chosen sample was a sample of convenience (Corbin & Strauss, 2007). Teachers at the University of Parma were chosen, who were all known to the researcher, and had shown or declared an interest as members of the University teaching staff in Technology

Enhanced Learning and in the activities of the UniPR Co-Lab Research Centre. Practical issues were in fact considered in the choice, such as time, availability of people, willingness of people to participate, to improve the feasibility of the technique in the context (Pickard, 2007, p. 90). The contribute of a key informant, Anna Maria Tammaro, was crucial at this step of the process; the key informant was the former Director of the Research Centre and therefore knew about the composition of the group and contributed in making it appropriate for the specific research questions.

In total, 7 out of 9 teachers of the University of Parma, who were contacted personally and through e-mail communications, participated in the interviews. They were teachers from different academic disciplines, teaching different subjects but with the common background of sharing the values fostered by UniPR Co-Lab, due to the fact that they were aware of the importance of technology as a tool to serve learning enhancement in the academic environment.

Data collection techniques

As is common in qualitative case studies, there was no selection and design a priori; this was to give the research design the possibility to emerge, as is typical of qualitative research (Lincoln & Guba, 1985, p. 203), even if **interviews** were indicated from the beginning as likely techniques, considering that "observations, interviewing and examination of (...) documents are the most common methods of qualitative research" (Stake, 2010b, p. 20). Some key informants were identified, and in-depth conversations and discussions were held with

them; it was thanks to such discussions that the **interview** resulted as the most adequate technique for data collection, given the research question, and the names of the first interviewees to be recruited for the initial sample came out (Pickard, 2007, p. 89). Further interviewees, who were not included in the sample from the beginning, were included when two teachers did not answer and because they were identified as interesting and information-rich throughout the study, as emerged from the conversations with the key informants and whom the interviewees themselves mentioned. This was in line with the need for focused exploration and with research design emerging and responding, as suggested by (Pickard, 2007, pp. 89–90).

Document analysis was identified during further steps, as a way to triangulate and give a better description of the background. As it is better explained in the section about data collection techniques on page 51, the existence of official institutional strategies regarding e-learning and open learning was investigated.

Selecting a further data collection technique as the focus group might be appropriate to interpret the collected qualitative data (Stewart & Shamdasani, 1990, p. 15), but was not selected due to the experience that is needed to get the best results from it, to time constraints and to the difficulty in collecting the respondents in the same location at the same time (Pickard, 2007, pp. 219–225).

The primary **sources of data** in the study were therefore **interviews**, while the secondary sources were **document study and analysis**, together with research articles and thus the **literature review**, which

formed part of the methodology as a sort of continuum informing the whole research (Pickard, 2007).

Interviews

Interviews were chosen as the primary data collection source and techniques, after evaluating their appropriateness to answer the research questions. As a matter of fact, both an exploration of past experiences and a view on future predictions were necessary to explore what open education means to educators in terms of enhancing learning (Lincoln & Guba, 1985).

Moreover, in-depth answers, individual views and perceptions were to be collected in order to try and understand whether they feel ready and feel to open up education in a pedagogical and technological perspective as well as to try and understand whether they thought they possessed the necessary competences, and the complexity of questions would make it difficult to choose other techniques (Pickard, 2007, p. 181). For the above reasons interviews were chosen for data collection, to obtain qualitative descriptions of the teaching experiences and context, to gain a rich picture of the operational world of teachers in their academic environment and understand their individual perspectives about teaching and learning enhancement (Denzin & Lincoln, 2003, p. 62).

Access to the interviewees' world

The choice of the context by the researcher and the previous knowledge of the topic by the interviewer created a **privileged position** to access the interviewee's world (Kvale, 1996, pp. 124–125).

This was possible thanks to the **professional experience being carried out by the interviewer in UniPR Co-Lab research centre**, even if it was also necessary to review the literature both before the interviewing period and along the whole period to allow for the research design to emerge. Such a privileged position allowed to learn about teachers' "experiences, feelings and hopes and the world they live in" (Kvale, 1996, p. 5) through conversations, verbal exchanges which were managed to obtain information and explore teacher's perceptions (Gillham, 2004).

Type of interview

While recognizing that an unstructured interview might be a better tool to obtain a depth insight into some issues, the nature of the research topic and questions as well as the experience of the researcher were considered, as suggested by (Pickard, 2007, p. 171), and a **semi-structured interview** was preferred.

As a matter of fact, interviews depend on the experience and on diverse skills possessed by the interviewer, e.g. communication skills, being able to ask questions and listen to answers without being intrusive (Clough, 2002) (Cohen, Manion, & Morrison, 2003) (Ritchie & Lewis, 2003) and skills had to be further developed by the interviewer throughout the process. A structured interview was also considered, but it was not chosen as it would be too strict and it would not allow for any variation or deviation from the structure, or from an already set coding scheme (Denzin & Lincoln, 2003, p. 68), thus not being the most suitable solution for a qualitative research design (Lodico, Spaulding, & Voegtle, 2010).

Piloting interviews

A pilot test was conducted in mid March with a respondent, who was willing to participate, and with whom it was not necessary to gain trust and establish a rapport since the researcher and respondent already knew each other and had already worked together and collaborated. Piloting interviews is a critical and necessary step in the process that can help verify the efficacy and significantly improve the tool and its validity (Pickard, 2010, p. 270), and as a matter of fact **the pilot interview was used to modify and improve the interview guid**e; the improvement consisted mainly in a simplification and shortening, and in slightly re-focusing the main key points.

The interviews

Seven different interviews were carried out; all interviews were face-to-face sessions, scheduled between 25th March and 28th April, and held in Italian. Such an approach was time consuming (Gillham, 2004) but it gave the opportunity to establish a rapport with the respondent, to collect nonverbal aspect (Gorden, 1998); it made also possible to adapt questions, give definitions and explanations, if appropriate, and clarify doubts. The average time allocated for each session was 60 minutes, with the shortest lasting 40 and the longest lasting 90 minutes; the length also depended on the willingness of respondents to give details about their experiences and on the decision by the interviewer to let the conversation flow when possible in case the interviewee did not show any time related anxiety. Time included the opening and introductory phase and extra comments as a final stage.

No specific definition was asked to the respondents and no definition was given at the beginning; it was rather explored with them on two levels:

1. their **idea of openness**: what open learning, open education, open educational resources and/or practices and MOOCs might mean to them, with reference to their specific learning experience;
2. their **application** of the idea of open education in their teaching experience

The interviewer made the most of the efforts in order not to interfere, even if experience is necessary for it, and some challenges were included in memo references as a way to improve the technique along the process. The details of the interviews were collected in a table so as to have all the information readily available. Appendix no. 5 shows an example. For further details about the interviewees' profiles, see the relevant chapter on page 131.

The interview process

The interview process was faced and designed considering seven stages, as suggested by (Kvale, 1996): thematizing, designing, interviewing, transcribing, analysing, verifying and reporting (Pickard, 2007, p. 172). Nevertheless, the process was not always as linear as suggested by the steps.

Thematizing

The first questions concerned the What and Why of the study (Kvale, 1996, p. 126). In this way it was defined that the study was about

MOOCs and Open Learning and the reasons were given for starting such a study at the University of Parma with particular attention to the values shared by people referring to the Research Centre UniPR Co-Lab. Mind maps and concepts maps were often used at these stages, both manually drawn ones and those created using software[4]. Drawing maps allowed for brainstorming ideas and concepts and connecting them in different ways and at different stages of the process. Different colours were used and often a *legenda* was necessary.

Starting from the main questions, and from a review of the literature, initial themes were drawn and structured and a framework, which could guide the further designing of the interview, was outlined. It was at this stage that the aims and objectives of the research questions that were in their initial formulation were refined, and this made it also possible to define a purpose for the interview, and to decide how to carry out interviews and design them to collect data in such a way as "to gain a growing understanding of (...) feelings, behaviours and beliefs" (Pickard, 2007, p. 173).

Designing

An interview guide was drafted from the beginning to "ensure that each interview covered the same ground" and to give at the same time "the interviewer considerable discretion in the conduct of the interview" (Ellis, 1993, p. 475). Considering the choice that had been made for a semi-structured interview, the guide was a table including

[4] xMind software was used, because it is a cross-platform and free one, which is also available in a portable release. Maps created with such a software can also be handled by portable devices as smartphones and tablets by using a specific App, Thoughts.

a general list of open and broad questions to check that the important topics were covered (Pickard, 2007, p. 173), and some key points which had not to be forgotten. As confirmed by (Gillham, 2004) using quite open question does not hinder for guiding the interview. A specific schema was adopted: the interview started asking broad and easy questions: interviewees were asked to describe specific experiences about learning and teaching in the specific academic discipline. The interview proceeded by exploring perceptions about open learning and finally about MOOCs. The process was followed in all the interviews and was meant first to help the respondents feel comfortable and willing to share their experiences, without making them feel at unease in case they did not know about specific concepts under evaluation. After the pilot interview the guide was slightly modified in an effort to comply more with the specific aims and objectives. As it has been stated by (Pickard, 2007, p. 16), "emergent design is an integral part of all qualitative research"; the interview guide was changed as the study progressed in order to comply with individualities and different approaches, and to improve data collection. The interview introduction guide, the first and final releases of the interview guide, including the reasons for exploring some aspects, are included in the Appendices Section (Appendix 6, 7 and 8).

Interviewing

Interviews were conducted according to the guide "and with a reflective approach to the knowledge sought and the interpersonal relation of the interview situation" (Kvale, 1996, p. 88). When

requesting the interviews it was indicated how much time would be necessary, based on the experience of the pilot interview. With the goal of semi-structured (or unstructured) interviewing mainly about understanding, when conducting the interview, the researcher took care to see the situation from the interviewees' point of view and to put them at their ease as much as possible (Denzin & Lincoln, 2003).

An introduction described the aims of the interview and the reason why the interviewee had been chosen, that is being a teacher and therefore a facilitator, a promoter of learning sharing some of the values of UniPR Co-Lab Research Centre, e.g. the necessity to concentrate first of all on learning (and learning needs) when talking about e-learning/technology enhanced learning/online learning.

The interviews were all recorded on a portable device (a tablet) using an app that allowed to directly record .mp3 files and easily transfer them to the computer using the Wi-Fi connection; the consent for recording was obtained and recorded during each interview, to comply with ethical considerations. Notes were taken during the interview on some particular aspects and on the interviewee's approach.

After each interview a memo reference was written with notes on observation of non verbal techniques, following the theories of communication studies whereby understanding the meaning of spoken language might strongly be influenced by considering nonverbal accompaniment (tone of voice, facial expressions, gestures, posture) (Gorden, 1998, p. 66). In particular, notes about proxemics, chronemics, and paralinguistic communication were taken and documented in the memo references (Denzin & Lincoln, 2003).

Nonverbal accompaniment was also added as a comment to the transcriptions. Additionally, memo references included notes about any elements of interviewing which might have influenced each interview, such as language and culture, trust and degree of involvement (Denzin & Lincoln, 2003). As stated by Gorden (1998, p. 1), "learning high-order interviewing skills require thoughtful planning, self-controlled performance, and critical analysis of one's own interview". Memo references were therefore not limited to the above mentioned reference notes on nonverbal communication, but they also included notes on any problematic issues and possible errors deriving from both the respondent's and the interviewer's behaviour, and from the nature of the task, that is, the method of administration of the interview. An example of a memo reference is included in the Appendices section (Appendix no. 10).

Transcribing

The interviews were transcribed accurately on the same days or in the following few days. A full transcription from the recording was made in order for theory to emerge from the data (Pickard, 2007, p. 178) over time. The transcription included observation notes. Both the notes taken during the interview and those emerging from transcriptions about possible emerging concepts and themes were added as comments on the transcription and further developed into memos. In the Appendices section an example of a part from a transcription is shown, with initial coding, observations and notes (Appendix no. 9).

Analysing

The analysis started immediately, together with the transcription, by making notes about possible concepts emerging from the data and through memos; this was necessary because the nature of the interviews is such that rich and detailed data are produced (Pickard, 2007, p. 181). The strategy for qualitative analysis of data from interviews is further discussed in the Data Analysis subchapter on page 53.

Verifying

The first level of verification for the interview was about it being able to answer the research question (Kvale, 1996). Furthermore, member checking (Lincoln & Guba, 1985) was included as a second verification step: time being a constraint, and true member checking allowing for in-depth dialogue in constructivist research, it only included the interviewee's profile, which was checked by the respondents (regarding member checking also see the credibility section on page 68).

Reporting

As it is explained in the data analysis section, starting on page 53, some analytical tools, that is memo references and portraits, reported the evidence from data collection, and were the foundation for findings. Memo references reported impressions and feelings from the interview. Both factual and enriched portraits made reference to the raw data, and therefore to some verbatim quotes from the transcription (Charmaz, 2006, p. 82); the evidence, expressed in

quotes, was further used at different steps to support the interpretation by the researcher (Pickard, 2007, p. 179)

Document Analysis

Document analysis was selected as a secondary source of data, and included documents relevant to both the University of Parma and UniPR Co-Lab Research Centre; the choice allowed to obtain contextual information about facts and strategies regarding e-learning and open learning and therefore contribute to the picture of the operational world in which teachers are acting. Some national documents were also analysed, to consider the possibilities given or not by the Government to set rules regarding technology enhanced learning.

Yin (2009, p. 101) states that "documentary research is likely to be relevant to every case study topic" and presents some specific strengths, being stable (easy to review repeatedly), unobtrusive (not created as a result of the case study), exact (about references and details) and potentially broad covering. As it has been confirmed by Tellis (1997) and Stake (1995) documents are in fact among the typical sources of evidence in case studies and might play a role in the triangulation of evidence. Nevertheless, it is important to evaluate carefully their accuracy (Tellis, 1997), and consider them together with other sources of evidence, in order not to be misled. In order to overcome the possible disadvantages deriving from the nature of such a source, a key informant was chosen among strategic managers, who is an expert in learning related administrative matters and student services; this person was able to confirm the validity of the choice of documents and validate some interpretations.

A review of institutional documents was conducted, looking for those related to the research, thus including the University of Parma's and UniPR Co-Lab's statute and regulations. A search was carried out for any existing statements of intent or documents regarding e-learning, distance learning, technology enhanced learning, telematics learning, open learning and MOOCs. Further analysis included policies, strategies and other institutional documents relevant to learning enhancement and e-learning at the University of Parma.

The documents were also analysed to provide an insight into institutional elements of readiness for e-learning and open learning, such as existing experiences, strategies and funding opportunities, thus providing a background for the interviews and providing a means to validate part of the findings. This was coherent with the research questions and with the particular aims of the study, that is, exploring educators' readiness to open up education in a pedagogical and technological perspective and their having the necessary competences and support. Reports made available on the University web site were also used as sources of information (regarding more recent events and institutional communications for which more official documents were not available at the time of the analysis[5]). The documents that were analysed are listed in the reference list.

[5] An example of this was the communication about the institution of UNINOVA inter-university centre, which was announced but is not yet defined by documents.

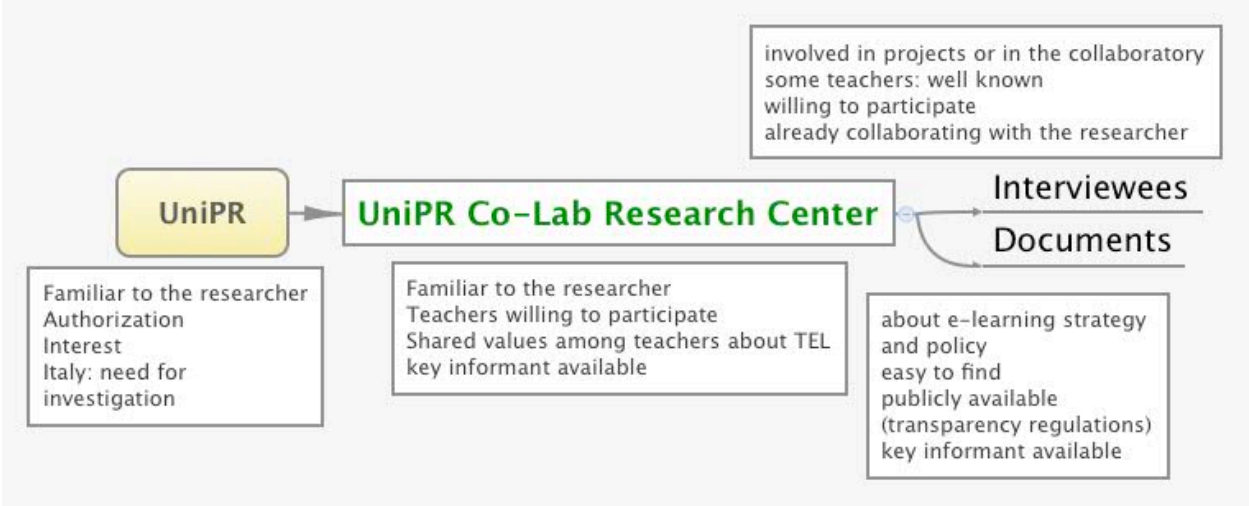


Fig. 2 Simplified schema: adopted criteria for the choice of the case and the sample.

Data Analysis

Data analysis was carried out in a continuous process of giving meaning to the collected data by "taking something apart", "giving meaning to the parts" (Stake, 1995, p. 71).

Strategy for qualitative data analysis: constant comparative analysis.

The "**constant comparative analysis**" strategy was chosen for the analysis of qualitative data in the present study, as it was considered appropriate to match the research questions; it is of the most cited strategies, among those, which are recognized for the analysis of qualitative data. As a matter of fact qualitative research is about the generation of theories directly emerging from the analysis of detailed and deep data, the collection of which aims at in-depth understanding, taking due care about complexity (Stake, 2010b, pp. 26–28); constant comparative analysis "involves taking one piece of data and comparing it with all others that may be similar or different in order to develop

conceptualizations of the possible relations between various pieces of data" (Pickard, 2007, p. 241).

In particular, Strauss' more structured approach was preferred to Glaser's one, in consideration of time constraints and of the relatively little experience of the researcher in qualitative research.

Coding, i.e. sorting and classifying raw data in "topics, themes and issues" in order to interpret them (Stake, 2010b, p. 151) through different steps and activities, was used in the analysis to handle big amounts of data in a systematic way and build on raw data, rather than testing it, in order to "identify, develop and relate the concepts" (Corbin & Strauss, 2007, p. 13).

A clarification is needed to avoid for misunderstandings that might derive from the use of the term "coding", as argued by Dey (2003, p. 60); being it here about qualitative research, it is clear for the researcher that coding is meant "to create or adapt concepts relevant to the data rather than to apply a set of pre-established rules" (op. cit., p. 60). Codes might therefore be described as "segments", "units of meaning". As it is usual for constant comparative analysis it flew along three main steps — each with specific purposes and features — corresponding to different types of coding activities: the analysis started from **open coding**, moving further and constantly through **axial coding** and flowing into **selective coding**, as it is further described and explained.

In the following sections analytical tools are also mentioned, which were used along the process. During the entire process, the use of a computer was crucial, as different software and apps were employed,

to facilitate the process and make it simpler and trustworthy. A temporary demo release for the Mac Operating System of the Qualitative Data Analysis Software MAXQDA11[6] was used in the open coding phase. The software was used for the following purposes:

1) testing its suitability to satisfy qualitative analysis needs;
2) organize quotes from transcripts more quickly and flexibly;
3) organize lists of codes (units of meaning), concepts and themes flexibly and build "codebooks" (Ryan & Bernard, 2003, p. 276);
4) record combination of codes/categories and quotes from transcripts.

Such a use of the software allowed to create a base of organized documents for the following steps of the analysis: the resulting files were used during the axial coding phase as a reference for memo writing and category creation. It was not used as the unique supporting tool for analysis, in the awareness that it was a demo version, but most of all that the use of software in qualitative analysis is much debated (Weitzman, 2003) and risks to move the attention of the researcher towards quantitative aspects. In general, the process of analysis made it possible to move from a mere descriptive consideration of the case to an analytical one, and to look at the emerging concepts and themes in a holistic and connected way, in spite of the limitations of the study.

Open Coding

[6] http://www.maxqda.com/

Immediately after each interview the transcript was written out; an initial coding and the identification of concepts by line-by-line reading and text marking was started already during the transcription of the interviews, and during the writing of the first portrait. Portraits were written at different stages with diverse features; the transcription was followed by a factual portrait — which tried to be as neutral as possible and report what had been said by the interviewees — and further by the elaboration into an enriched portrait, that included the interpretation and judgment level (see also the reporting section, on page 50).

Coding was informed by the research questions and by the study aims; concept maps and matrix also supported it — they were drawn starting from the key themes relating to the research questions and from the literature review. Initial insight and direction for **open coding** was also given by a drafted theoretical framework, which was drawn when also designing the tentative guide for the semi-structured interview. It was created as a tool for the study and consists in a schema, where people-related aspects of readiness for technology enhanced learning are shown — which emerged from the literature review about e-learning readiness — integrated with knowledge, feelings and skills (Bloom, 1956) (L. W. Anderson et al., 2000).

As a matter of fact, even if, with reference to the constructivist and social constructivist learning theories, teachers were considered as promoters of learning and facilitators, teachers are also affected by the support they get for teaching in an information- and technology rich world; for this reason the domains described in Bloom's taxonomy

were added to the picture to make it richer and complete. Both the technological and pedagogical perspective were further integrated in the schema, as they influence the domains.

The initial framework is shown in Fig. 3 and is available in the Appendices Section (Appendix no. 13) and further mentioned in the analysis of data.

Learners Human resources	Bloom		
	COGNITIVE	**AFFECTIVE**	**PSYCHOMOTRIC**
	Knowledge	**Feeling**	**Competences (skills) and tools**
TECHNOLOGY Considered as technological attitude and skills	Content readiness (technological and pedagogical level)	Attitude towards technology Attitude towards innovation Attitude towards self-development Sociological aspect (collaboration)	Technological skills
PEDAGOGY			

Fig. 3 Initial framework to refer to (list of concepts and directions) for analysis about readiness for open learning and MOOCs

It was decided not to begin with a predefined theoretical framework or set of concepts which might limit the findings, but rather as a **useful list of initial concepts and directions for possible interpretation,** and to add themes during the analysis (Ryan & Bernard, 2003, pp. 274–277). As a matter of fact, theoretical frameworks are common in quantitative research and their use is unclear and debated in qualitative research. In the awareness that "the researcher should remain open to new ideas and concepts and be willing to let go" if discovering that "certain "imported" concepts do not fit the data" (Corbin & Strauss, 2007, sec. Theoretical Frameworks) such a framework was in fact compared against actual collected data, modified and redesigned during the analysis. Open

coding was therefore used at the beginning to study data closely, to focus and reflect on them by asking questions, and consider meaning, identify concepts and, whenever possible, their properties and dimensions. Concepts were in fact the basis of analysis and the foundation of research (Corbin & Strauss, 2007, Chapter 3 – Prelude to Analysis). Some of the concepts were later integrated in the discovered categories, other ones were useful to get to a more in-depth understanding and to explore and describe more carefully the context in which interviewees act.

The process was carried out in the awareness that what distinguishes an analytic approach from a descriptive one is interaction with data, the thinking and feeling process carried out by analytic tools and techniques to make sense out of data (Corbin & Strauss, 2007, Chapter Strategies for Qualitative Data Analysis), made up of many different but integrated steps.

During the interaction with data, analytic tools where used, to “probe the data, stimulate conceptual thinking, increase sensitivity, provoke alternative interpretations of data, and generate the free flow of ideas” (Corbin & Strauss, 2007, Chapter Strategies for Qualitative Data Analysis). Extreme situations were imagined, diagrams made, metaphors sometimes applied (Wicker, 1985, p. 1094). In particular, among analytic strategies, asking questions and making comparisons were used as the most common and fundamental ones (Blumer, 1969); this was coherent with the research question being about exploring perceptions. Moreover, it was also appropriate in the frame of the choice made for the "constant comparative analysis". Sometimes,

thinking about the various meanings of a word or statement (Corbin & Strauss, 2007, Chapter Strategies for Qualitative Data Analysis) and looking at language was useful for the aims of the study, as also the exploration of the meaning of openness in the perception of teachers and when exploring perceptions about MOOCs. In some circumstances, considering the involvement of the researcher in the case, drawing upon personal experience was necessary to understand meanings, but it was necessary to stay on a conceptual level, and be wary any possible bias, in this case. It was also necessary to try and recognize assumptions and biases by respondents, which could intrude into the analysis. In this case questioning and exploring issues further was necessary. Looking at nonverbal aspects, expressed emotions and feelings was necessary (Gorden, 1980), not only because they are part of the context, but also because the study is about perceptions and includes the exploration of the affective dimension of teaching to explore the readiness concept.

Axial coding

The operation of mentally linking and attributing consequences crossed the whole process and was expressed by tools as maps, drawings, schemas, logs and memos (some examples are available in the Appendices section, page 289). Letting memos flow freely and naturally from the very beginning and writing them as analytical tools was not only appropriate but also fundamental to the advancement of the analysis. As a matter of fact, even if **axial coding** — "the act of relating concepts/categories to each other" — is usually described as a further step to open coding, that goes towards identifying conditions

and contexts "open coding and axial coding go hand in hand" (Corbin & Strauss, 2007, sec. Axial Coding).

Memo-writing was a way of advancing theory; through them it was possible to "distinguish between major and minor categories and delineate how they are related" (Charmaz, 2006, p. 85), in spite of the present study being not specifically about grounded theory.

Moreover, as suggested by Corbin & Strauss (2007, Chapter 6 – Memos and Diagrams), **memos** were adopted as a "specialized type of written records that contain the products of our analyses" and were used for

- data exploration (from transcriptions and portraits);
- identifying/developing concepts/themes/categories;
- making comparisons;
- asking questions;
- reflecting analytic thoughts.

Verbatim quotes from transcripts were used in memos; as confirmed by (Charmaz, 2006, p. 82) this "permits (…) to make precise comparisons right in the memo", which "enable you to define patterns".

Along the open and axial coding, the framework about readiness for open learning and MOOC was developed and resulted modified as is shown in Fig. 4 and as per the results of the analysis (page 159) and discussion (page 208).

Learners / Human resources	Bloom		
	COGNITIVE	**AFFECTIVE**	**PSYCHOMOTRIC**
	Knowledge (previously known material, terminology, facts, ways and means, theories) **Comprehension** (understanding) meaning **Application** → use in new and concrete situations **Analysis** **Synthesis**: creatively or divergently apply **Evaluation**: judging value based on personal values	Feelings Values Appreciation Enthusiasm Motivations Attitudes	Using technical instruments Other skills
	Knowledge	**Feeling**	**Competences (skills) / tools**
TECHNOLOGY (and innovation)	*Knowledge of possible technologies to use* *Knowledge of experiences / examples* *Knowledge of existing support (T)*	*Attitude towards use of … (positive/ negative)* *Attitude towards technology* *Feeling about existing support (T)*[2] *Feeling about technological competences* *Attitude towards innovation*	*Ability to use… (technological skills)*
PEDAGOGY	*Knowledge of existing strategy (T-P)* *Knowledge of existing support (P)* *Different levels of enrichment (learning quality)* *Teaching experience* *Knowledge / comprehension of the right approach / tool for the pedagogical approach* *Sociological aspect*[1]	*Attitude towards self-development* *Feeling/attitude towards strategy*[2] *Feeling about existing support*[2] *(P)* *Motivations as teacher* *Attitude towards teacher's role / teaching approach* *Feeling about "tension" research / teaching* *Feeling about pedagogical competences*	*Ability to use (pedagogical-level skills)*

[1] It is positioned between cognitive and affective domain, actually, because the propension might depend on knowledge and comprehension of some aspects, on evaluation, but also on specific motivations and attitudes

[2] We explored perceptions by teachers, so we do not consider the institutional aspect of support/strategy (which is verified by carrying out the document analysis) but rather the perception about external factors (strategy/ support)

Fig. 4 Readiness framework as extended during data analysis[7]

Selective Coding

Selective Coding, i.e. "the process of integrating and refining the theory" (Corbin & Strauss, 2007, p. 143) did not lead to the definition of a theory, also due to time constraints and to the sample characteristics; nevertheless, it led to the establishment of categories integrating the collected data and relating to the research questions.

This was found to be appropriate for the selected strategy, and considering that the aim was not to develop grounded theory.

This phase was the most challenging albeit interesting one, given the complexity and articulation of the research topic.

[7] The framework is also enclosed in the Appendices section (Appendix no. 14)

Categories were then presented and discussed in a narrative way in the Findings and Discussion sections. It further led to a re-elaboration of the theoretical framework about readiness for open learning and MOOCs as it is presented in the findings and discussion. Finally, it made it also possible to ask questions and arise issues and discover paths to explore for the future.

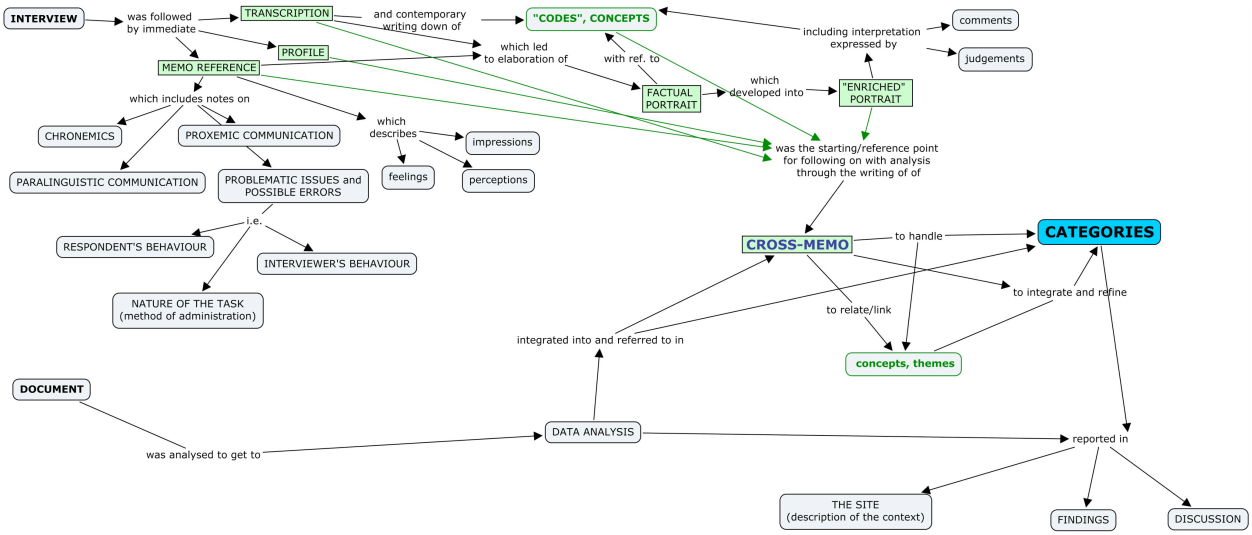


Fig. 5 Map showing the flow of the process of analysis

Constraints and limitations

Methodological and descriptive rigor in the research was necessary, considering that qualitative research was applied, that has been argued to be subjective and personalistic, as well as time consuming and more suitable to ask new questions rather than answer them (Stake, 2010b, p. 29). As a matter of fact subjectivity and reconstructing the academic world of teachers based on their specific experiences was considered a plus, because of the purpose of the research being about understanding teaching and learning activities (Stake, 2010b). In spite of allowing the research design to emerge, the researcher attempted to comply with rigor by establishing a plan and

to keep notes and a research diary. Such a rigor was also adopted to overcome a possible limitation that may arise from the choice of the case study method, which has been sometimes accused of lack of rigor (Yin, 2009, p. 14).

Choosing the interview technique might have had some influence on the quality of findings, due to the nature of the interview itself, which is in fact "framing real-life events in a two-dimensional space" (Denzin & Lincoln, 2003, p. 85) and depends on the researcher for the interpretation. The interpreting process is typical of qualitative research, but it cannot be forgotten that the effort of the researcher to be neutral and unbiased is not always successful.

A way of overcoming such a limitation was the elaboration of memo references after each interview, which included feelings and notes about the interview — as it has been explained in the section concerning the interview process. Memo references included notes on possible sources of non-sampling errors (Sudman & Bradburn, 1974) which might have limited the usefulness of collected data: respondent behaviour, nature of the task and the ability, skills and behaviour of the interviewer (Denzin & Lincoln, 2003, p. 69) (Bradburn, 1983, p. 291).

The elaboration of memo references, and keeping a researcher's log/diary with impressions and reflections were also carried out to foster reflective thinking and critical analysis throughout the process. It was done in the awareness that another source of limitation might have been the particular situation of the researcher being involved in the context of the case under study; in spite of making it easier to gain

trust and establish rapport (Pickard, 2007), it might have been a source of difficulties (Tellis, 1997).

Time was a constraint that influenced much of the study. The research had to be carried out and written from 21st January (the date of the first virtual thesis seminar) to 20th June, that is a total of twenty-two weeks. The fact that the researcher had to work 5 out of 7 days and for a total of minimum 40 hours a week until influenced some choices and the breadth and depth of study. Among choices there was the one to take a period off in the last phase, and to use holidays to that aim. Time limitations made it also necessary to take some decisions about priorities. The main priority was for methodological and descriptive rigor in the research, considering the research paradigm and the qualitative approach that had been chosen as the more appropriate ones to answer the research questions. A following priority concerned the analysis of data, and a constant attention to the findings to be directly related to the collected data.

A further limitation of the study is relevant to language and to the meaning attributed to the collected data. On the one hand, data collection was carried out in the researcher's mother tongue, thus allowing for a better understanding. On the other hand, the dissertation was to be written in English, so that some of the richer details and some concepts might not be expressed at the same level as they might have been in the original language. As regards meaning, as was pointed out by Packer (2011 p. 8), in the coding process "language is treated as a collection of words that are labels for concepts", and therefore the specific strategy of the coding process for

data analysis might have contributed to remove some of the meaning that was conveyed when collecting data from the interviews. Nevertheless, being aware of such aspects allowed to dedicate specific attention to both translation and coding.

Ethical considerations

The present research is qualitative, thus subjective, and it is about people in their constructed world, and therefore implies that ethical considerations are of major importance, as privacy is often at risk (Stake, 2010b, p. 29).

In spite of the decision of engaging in research within her own organization, the researcher informed and asked for permission to carry out her activity (Pickard, 2007, p. 73). Access to the research context was planned from the beginning of the process; a formal letter of request for authorization was sent in to the Rector and the Vice Rector to inform about the purpose of the research and ask for permission to carry it out at the University of Parma (see copy of the request for authorization in the Appendix section, Appendix no. 1); gaining access to the context of the UniPR Co-Lab was facilitated by the researcher being a component of the centre, and it was supported by the key informant as a member of the centre.

Gaining trust and cooperation was further necessary in the specific context of the case and it was necessary to consider the privacy information regulations in force in the Italian context (Codice in materia di protezione dei dati personali, Decreto Legislativo 196/2003

issued on 30th June 2003) and in the European context[8], as interviews were used for data collection. On the one hand, it might be stated that knowing about the research might influence the behaviour by those who are involved, but on the other hand they hold the right to know that their behaviour or beliefs are studied and the reasons why they are (Pickard, 2010, p. 144).

Those people who were asked to be interviewed received a written introductory and request e-mail, in which information were given about the research and its purposes (see an example of the written request as included in the Appendix section, Appendix no. 2). Interviewees were informed about the interview being confidential and about them not being identified by name in the study, except in cases where they specifically allowed their name to be divulged. Moreover, all interviewees were explicitly asked for permission to be recorded, and it was explained to them that the recording would be kept confidential and the interviews would be fully transcribed and used by the researcher to analyse data. All the conditions were explained during the interview's introductory conversation; the interviewees also read, understood and signed a consent form to confirm their decisions about confidentiality and anonymity. An example of the informed consent form is included in the Appendix Section (Appendix no. 3).

[8] A new regulation of data protection approved in January 2012 will substitute the Directive 95/46 / EC of the European Parliament and consequently replace the local regulations in all countries, included the Codice in materia di protezione dei dati personali, Decreto Legislativo 196/2003.

The possibility to publish the interviewee's profile was verified with them in a second time as a result of the member checking process, and it was given the possibility to each of them to choose whether to be cited or not: all interviewees accepted the publication of their profile and their nominal identification in analysis and study report; only one of them explicitly asked not to be nominally identified in the analysis and discussion. The above steps were made to avoid criticism and problems related to informed consent, right to privacy and protection from harm (Denzin & Lincoln, 2003, p. 89).

As it was reported in the memo references, which were written after each interview (see the Interviewing and the Reporting sections of the Interviewing subchapter, on page 47 and 50 respectively), this procedure seemed to result in a satisfactory situation of trust and comfort, in which interviewers felt at their ease and responded in a relaxed and comfortable way.

The veracity of the reports made by the researcher was considered another ethical issue (Denzin & Lincoln, 2003, p. 89) which also affects trustworthiness (further discussed in the paragraph "Trustworthiness of the Enquiry"), and member checking was applied to overcome it (Pickard, 2010, p. 72): see also both verifying section of the interview process (page 50) and credibility section (page 68).

Trustworthiness of the Enquiry

Pickard's (2007) trustworthiness model of judging value in research was adopted to establishing the value of the research and its findings, which is a debated issue (Smith, 1990); this is an adaptation of the

model by Lincoln and Guba (1985), and includes four concepts: credibility, transferability, dependability and confirmability.

Credibility

Being aware of the subjectivity, which is implicit in qualitative research and is impossible to remove completely, the researcher tried to stay alert and compensate for it in any possible way. In order for the study to be considered credible, the engagement with the research participants was prolonged, and triangulation was applied, to enrich the strengths of each source and type of data and at the same time compensate for their weaknesses. Not only technique triangulation was applied (using interviews and document analysis to collect data), but also source triangulation (strategic managers were listened to, to confirm the analysis and interpretation of documents). Member checks were applied, as explained in the "verifying" section of the interview process, on page 50.

Transferability

To allow for transferability, the most possibly detailed and rich picture of the case was given, as evidence that it has been studied accurately. The institution was described, considering in detail both the University of Parma and the UniPR Co-Lab Research Centre, and a picture was offered of the values that are shared by those teachers who relate in any possible way to UniPR Co-Lab, in the awareness that in qualitative case studies "the uniqueness of the case and context is important to the understanding" (Stake, 1995, p. 39).

Moreover, any existing or non-existing strategies and policies about e-learning were mentioned, and aspects related to learning enhancement were described, as they were considered relevant for the research question and the aims of the study. Such a picture should allow the reader to decide whether his/her context is similar enough and therefore suitable for findings to be applied (Pickard, 2007, p. 20).

Dependability

The research process was observed by an external "auditor", a critical friend who was informed about the study progress along the whole research process. Traces were kept of the audit in a collection of files summarizing the interactions, which are made available through searching by key words (tags). As a matter of fact **research journal** was kept by means of a software/app[9] which was available on different supports: computer, smartphone and tablet, and which therefore made it possible to define passcodes (see privacy issues in the ethical considerations), to sync the notes and access a synchronized version of the diary even in mobility. Adopting this method made it also possible to take due notice in a constant and regular way, by also attaching key words (tags) and notes in form of images or links. An example of a list of journals by tags is available in the Appendices section (Appendix no. 4).

In accordance with the Halpern audit trail notational system (Halpern, 1983), which was suggested by (Lincoln & Guba, 1985, pp. 309–310) to establish dependability, all relevant paper or digital data pertaining

[9] DAY**ONE**, version 1.9.4.

to the research — and belonging to the six categories raw data, data reduction and analysis products, data reconstruction and synthesis products, process notes, materials related to intentions and dispositions and instrument development information — were documented and stored in a systematic way on the computer using a folder and file cataloguing.

Confirmability

An effort was made to ensure that findings, accepted as subjective knowledge, could be traced back to the raw data, confirmability being fundamental in order to limit any researcher bias (Charmaz, 1995, p. 32). For this reason all the transcripts are available, if needed, in the original language, in the research files. They have not been included in the Appendix to ensure anonymity where necessary[10], but are available for any check. The factual portraits and those including judgements and comments are also available for each interviewee. The memos and portraits, which were written during the open, axial and selective coding phases, in different colours to underline citations or paraphrasing of what interviewees stated, are also available for any check[11].

[10] a short example of a part from a transcription (in Italian) with initial coding, observations and notes is included in the Appendices section, Appendix no. 9.
[11] Examples of memos and portraits are available in the Appendices section.

SUMMARY OF METHODOLOGY

The research question and aims of the research are exploratory and descriptive and therefore qualitative in nature, being about understanding teachers' perceptions about specific learning aspects; a constructionism epistemology has therefore been adopted, as well as a qualitative approach, primarily relying on human perception and understanding.

The researcher used herself as a research instrument to deal with both human interactions and knowledge.

The qualitative case study was chosen as the most appropriate method due to the fact that the context is complex and it exists therefore a need for the investigation to "catch the complexity of a single case" (Stake, 2010b, p. xi) and understand activities under specific circumstances. The researcher engaged in research in her working environment for both practical reasons and following her research interests. The case study is an instrumental one, relating to the need is to understand and gain an insight into perceptions about open learning and the phenomenon of MOOCs in a context of learning enhancement. It examines the particular case of some teachers at the University of Parma who have joined in the UniPR CO-Lab Research Center, which attracts shared values about information and communication technologies' role as a tool to enhance learning.

Since sampling is a process that depends on the purpose of the investigation, purposive sampling was chosen as the most suitable to identify information-rich sources within the case and to gain rich in-depth pictures. Key informants helped identify the members of the sample and the position of the researcher inside the environment facilitated the choice, so that a sample of convenience was built. Practical issues were considered, that is time, people's availability and willingness to participate. Seven teachers of the University of Parma were included in the sample from

different academic disciplines and subject-areas, who share UniPR Co-Lab's values, that is an awareness of the importance of technology as a tool to serve learning enhancement in the academic environment.

The primary sources of data in this study were interviews; the secondary sources resulted to be document study and analysis, together with the literature review, which informed the research in a continuous way. Face-to-face interviews were scheduled in the space of a month, allowing to obtain a rich picture of the world of the interviewees and explore individual perceptions; semi-structured interview were chosen, and a loose guide was designed as a pathway to follow, so as not to neglect to go deeper into certain aspects, which was improved thanks to the pilot interview at the beginning. The process included seven stages: thematizing, designing, interviewing, transcribing, analyzing, verifying and reporting.

Document analysis included documents available at the University of Parma and at the Research Centre (UniPR Co-Lab); it was carried out to obtain information to describe the context and contribute to the depiction of the operational world in which teachers are acting, and to provide an insight into institutional elements of readiness for e-learning and open learning.

Constraints and possible limitations were identified in aspects related to the nature of the research, e.g. subjectivity, to the method and the site with reference to the situation of the researcher, to the techniques chosen, e.g. non-sampling errors, and to language and time issues; solutions were sought to overcome and reduce them. Ethical aspects were carefully considered, as the privacy of interviewees, their right to be duly informed and to give their consent about data collection and publication.

The trustworthiness model was adopted, to establish the value of the research, including the concepts of credibility, transferability, dependability and confirmability.

Critical and selective review of the literature

Introduction

When the topic is complex, articulated, and covers and connects diverse areas, as it is the case of the present study, the literature review is a cross search through disciplines; delimiting the research problem (Gall, Gall, & Borg, 2006) and focusing by the inverted triangle model (Reid, Taylor, Turner, & Shahabudin, n.d.) was a complex task to perform, from discovering what was already known and bringing it together in relation to the research questions and aims (Pickard, 2007, p. 25).

First of all, the literature review moved in fact from the research questions, aims and objectives of the present study, being about the possibility of open education in terms of enhancing learning under the technological and pedagogical perspective and according to teachers' perceptions. Learning is considered in the perspective of the social constructivist paradigm, so the features that have to be considered for learning enhancement depend on such a view. Consequently, the role of the teacher changes from expert to guide and mentor. It is in this perspective that one can define how technology might enhance learning and a definition and explanation of the terms adopted is given. Instead of looking at technology and pedagogy as of two contrasting worlds, it is proposed to overcome such a dichotomy and evidence is given from the literature to support such an approach. Evidence is further given from the literature that educational openness might be looked at as an integrated process including the

use and integration of Open Educational Resources, the Open Educational Practices and MOOCs.

A concept map was created to represent the main concepts, as a tool used for the planning the study and to assist interpretation along the way (Stake, 2010a).

After the formulation of the problem, the literature review process involved further stages (Cooper, 1984), some of which are described in detail in the following parts: information seeking and retrieval, evaluation and critical analysis, synthesis, presentation.

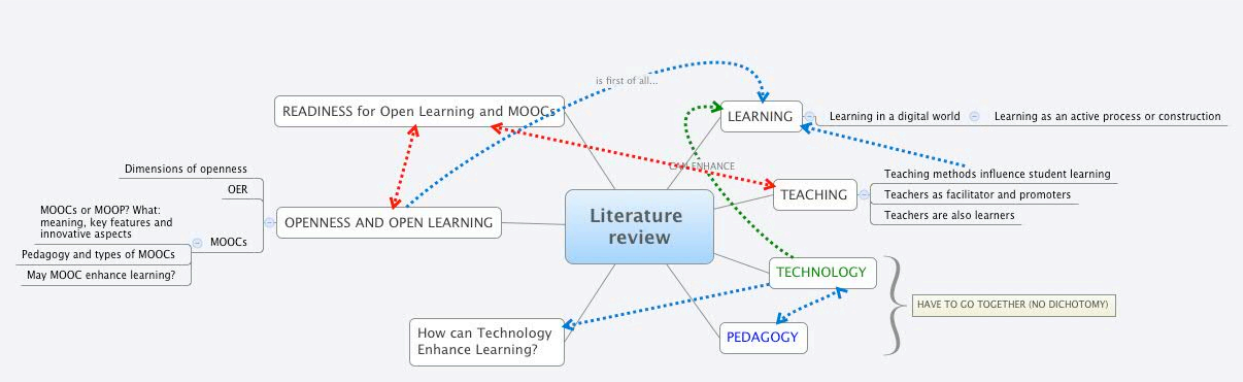


Fig. 6 Concept map - to represent the main concepts (Stake, 2010)

Aims of the Literature Review

The research questions that this study is attempting to answer are about the **role of open education in terms of enhancing learning**, **in the perception of teachers**, and **about them being ready and willing to open up education in a pedagogical and technological perspective to that aim**.

The study concentrates on a specific Italian Academic Environment, the one at the University of Parma. Literature searching started from international articles in English language, as the origins of the Open Education Movement and of MOOCs are in the **United States**, in the

United Kingdom and **Canada,** and because some important movements are international. Nevertheless, the implications of open education and MOOCs on learning enhancement are also explored by some researchers and academic and research organizations in **Italy;** therefore, some literature in the Italian language and literature in English language written by Italian researchers was also considered. Literature was therefore included after the selection mainly from the above-mentioned countries (USA, UK, Canada, Italy), and some literature from other European and extra-European countries when relevant.

Research is not so significant in terms of recommendations about the learning methodology in MOOCs, yet, and about the real role that MOOCs may play for learning enhancement. Nevertheless, given the proliferation of literature on Open Educational Resources in the last decade and the proliferation blogs about MOOCs in the last three years, this Literature Review is not meant to give a comprehensive review of the literature; it is a conceptual literature review, rather than systematic (Stake, 2010a, p. 109), as it is a way to focus on some of the issues and aspects which are related to the research questions, the aims and objectives.

The **aims of the literature review** were many.

Firstly, the literature review provided the **research setting and a reference for the researcher** during the whole process. For this reason it includes not only literature on the main key themes that were explored in the data collection, namely learning, e-learning / technology enhanced learning (and related terms), open learning and

MOOCs in the pedagogical and technological perspective, but also methodological literature (C. Hart, 2001, p. 3).

Secondly, it aims at giving an **overview of the landscape in which academic institutions are operating**: it is a world where the Internet and information and communication technologies in the last twenty-five years completely changed the setting. In particular, the literature review follows a path which goes from the definition of learning and the considered learning theory ground, to the role of teachers in such a learning paradigm, and follows on to get to and exploration of what open learning and learning in a MOOC might mean for learning enhancement under the pedagogical and technological perspectives.

In fact, it is the same pathway that was followed during data collection by interviews; as a matter of fact it was considered sensible to first explore perceptions about learning, teaching strategies and methods and then going deeper into specific issues related to technology enhanced learning, openness and learning in MOOCs.

The topic being broad, the publications focus on a selection of articles with the following objectives:

- to **explore the concept of learning** in relation to learning enhancement in the theoretical framework of constructivism and social constructivism;
- to **explore** the **concept of "Technology Enhanced Learning"** as an interpretation of e-learning;
- to explore **the concept of open learning as made explicit in OER, Open Educational Practices and the MOOCs phenomenon.**

Finally, the research question is about educators' perceptions on being (or not) ready and willing to open up education, so the literature review gives a definition of **readiness for online learning and readiness for change**, together with an overview of the **aspects to be considered when exploring the readiness of teachers for technology enhanced learning**, as it is the case for Open Educational Practices and MOOCs. In this case the analysis of the literature led to the development of a scheme (Fig. 8, page 159), which was used as a tool, i.e. a list of concepts for data collection, as it is further explained in the methodology. Where necessary, additional literature was also introduced to provide both **background information** and as broad a picture as possible. Even when not included in the critical review, further literature was considered, that is relevant to the discussion.

Methodology

First of all the aims of the literature review were defined, and the appropriate strategies for selection were selected; the process is further described in the following sections. In spite of the adoption of strategies to maximize results, this methodology is not without limitations and the researcher does not claim the study to be comprehensive, for the stated reasons and due to time limitations.

Search strategy

In order to cover the above-mentioned topics, the literature was retrieved following a specific search strategy and in a progressive way (C. Hart, 2001). First of all, it was considered that some of the key themes were defined and first used in specific contexts and by some

authors, and documents coming from events and initiatives were analysed, which also inform the following search for literature. “Open Educational Resources” is a term that was first used during a UNESCO meeting in 2002; for this reason the documents produced on that occasion were considered to start searching for references. The MIT Open Courseware initiative was one of the first to include open educational resources, and for this reason literature is available by MIT researchers. Open Educational Practices were defined as a result of the OPAL initiative 2009-2011 of the European Foundation for quality of Elearning (“OPAL | Open Educational Quality Initiative,” 2011). The documents resulting from it were also used as a starting point for the literature review on such a key theme.

George Siemens, Dave Cormier, Stephen Downes, George Wiley and Bonnie Stewart were recognized for being the first to organize a MOOC and being involved in the debate on MOOCs, both as regards the learning theory (connectivism and rhizomatic learning) and the discourse about pedagogical and technological aspects of MOOCs; it was fundamental considering their writings.

Considering that MOOCs are a relatively young phenomenon, blog articles were also considered, together with recorded lectures and keynotes, proceedings and articles by above authors; not considering them would not allow for depicting the phenomenon as thoroughly as possible, as it has mainly widely developed during the last two years.

Secondly, during her internship, the researcher created an online guide about MOOCs and Open Educational Resources for the University

of North Carolina at Greensboro, and the resources she found informed the following searches.

Thirdly, the researcher collaborated on other researches with the ITD (Istituto per le Tecnologie Didattiche) of the Centre for National Research (CNR) during the Master's thesis semester; for this reason she got in contact with some of the Italian researchers who are making research on some relevant topics and was given advice by them about appropriate articles and books.

Finally, the researcher had the occasion to participate in seminars and conferences where Open Learning and MOOCs were on the agenda, e.g. a seminar lectured by Grainne Conole, which was organized by ITD CNR, and from which literature was confirmed and added where necessary. In February 2014 the researcher also participated in the EMoocs Conference, which took place in Lausanne ("EMOOCs 2014 Conference | February 10-12, 2014 in Lausanne (Switzerland)," 2014), and the proceedings of such a conference where included as a source to search for relevant literature.

Searches were manly conducted on the following digital resources: Ebsco Publishing system (including Education Research Complete and Ebook Academic collection), SAGE Journals, ScienceDirect, Scopus, SpringerLink, Taylor&Francis Online, ACM Digital Library, Web of Science, Google Scholar.

On the one hand, specific articles and books were searched, because of indications coming from key informants and other researchers. On the other hand, lists of terms were used and combined by means of search

operators in all record fields and without a specific time limit, as the key themes are by their nature only related to a defined time span.

Considering the variety of terms used to define e-learning (namely online learning, technology enhanced learning and others), the following terms were used as synonyms in searches, together with e-learning: online learning, technology enhanced learning, TEL. For similar reasons open learning and open education were often used as synonyms and sometimes openness AND learning were used together.

Following are some examples of the terms and search expressions which were used, in addition to above mentioned strategies, to find relevant literature; the examples are not exhaustive, as the process was a continuous and adaptive one, and it was guided by emerging issues and aspects.

In order to find literature about readiness for e-learning and or readiness for open learning and MOOCs following are some of the terms and search expressions which were used.

- e-learning AND readiness
- e-learning AND readiness AND teacher* OR instructor*
- e-learning AND teacher* OR instructor* AND academic
- MOOC* AND readiness
- "Open learning" AND readiness
- "Open education" AND readiness

It was noticed that not much literature is present about readiness, in particular for open learning and MOOCs; for this reason, by similarity, the concept of readiness was considered in the literature when related to e-learning. It was necessary to further read through the abstracts

and then exclude the articles which were in particular relevant to student readiness because it was not the specific focus of the research, being only teachers considered in the study. In order to explore the concept of learning and learning quality in the theoretical framework of constructivism and social constructivism, following are some of the terms and search expressions, which were used to find literature:

- define learning AND contructivism OR "social constructivism"
- learning quality AND contructivism OR "social constructivism"
- teacher* OR instructor* OR professor AND role AND contructivism OR "social constructivism"
- define e-learning AND contructivism OR "social constructivism"
- E-learning quality AND contructivism OR "social constructivism"
- define "online learning" AND contructivism OR "social constructivism"
- "Online learning" quality AND contructivism OR "social constructivism"

To further explore the concept of (open) learning as made explicit in Open Educational Resources and practices and the MOOCs phenomenon and consider the technical and pedagogical perspectives, following are some of the terms and search expressions that were used to find literature: MOOC* AND pedagog*, MOOC* AND technolog*, MOOC* AND openness, MOOC* AND "open learning", MOOC* AND "open education", MOOC* AND "open educational resources", MOOC* AND "open educational practices", MOOC* AND "learning enhancement", MOOC* AND "enhancing learning".

Author names were used as search terms, together with keywords, to focus more and define the literature to concentrate on.

Searches were limited to the electronic resources available by the IDEM (IDEntity Management - Italian identity federation of universities and research institutes for authentication and authorization) system, and through connecting by the VPN (Virtual Private Network) service to Parma, Oslo and Tallinn University systems, and a limited number of databases was included in this methodology. The language was restricted to English and Italian.

Based on the abstracts and relevance to the subject of the research, several journal articles, conference proceedings and reports were identified, and references from these publications helped further to obtain additional literature. Finally, serendipity also played a part (C. Hart, 2001, p. 22), also thanks to contacts with researchers and authors during the course of the research.

Reference management

Both Mendeley and Zotero Reference Management Systems (RMS) were used together, taking advantage of the possibility to synchronize the two of them, to get the most of both and considering relevant strengths and weaknesses. As a matter of fact, Mendeley allows cataloguing publications by automatically collecting metadata through the browser plugin, but also to read, highlight and annotate literature. In fact, reading and taking some notes was not enough; highlighting in different colours, tagging by applying keywords and taking notes in an organized way — by also summarising — was necessary (Gall et al., 2006). Using RMSs on the tablet and taking advantage of the

annotation functionality was particularly useful to access and read in an ubiquitous way — in spite of some technical challenges encountered in having all the notes synchronized on the computer. Mendeley does not harvest metadata automatically from the browser in the most proper way, sometimes, and the Word Plugin made available by Zotero works in a more user friendly way. Zotero was therefore used to store references while browsing and to add citations and bibliography to the dissertation document.

Discussion

Learning in a digital world

The research questions of the present study are about learning enhancement by technology. It is therefore important to identify what is meant here by learning and learning enhancement, and the role of the teachers in the process.

Learning as an active process or construction

Learning is defined by the Oxford dictionary ("learning: definition of learning," n.d.) "the acquisition of knowledge or skills through study, experience, or being taught", but there is no single definition for learning, as it depends on the theories and philosophies underpinning it. Learning is not simply about remembering facts, and in this study it is meant as a complex and situated **process**, that is shaped and influenced by the context and the environment in which it takes place (Jonassen, 1994).

Constructivism is here considered as a suitable paradigm to adopt and use as a reference for learning enhancement. Instead of considering students as empty pots to be filled in by content, and as passive elements in the learning process, as it is in the behaviorism's epistemology, and differently from cognitivism, that puts "information-processing" at the core of the learning process, in the **constructivist** educational paradigm the focus is on students' **active construction of learning**. Firstly inspired by Piaget's theory of cognitive development and by evidence from his researches (DeVries, 2002), by the ideas of (Kelly, 1991) and (Bruner, 1987) that learning takes places through a complex process of making sense of experiences and reconstructing understanding on new information, the educational theory of **constructivism**, of which Dewey's "experiential learning" (Dewey, 1997) can also be considered a manifestation, asserts that **learning is a process of construction**, in which each single learner is **actively involved** in **interpreting** by going beyond the information received and in **building understanding and continuously testing and modifying his construction in the light of new experiences** (Schwandt, 1994, pp. 125–126), in a way that depends on context and on specific and diverse learning styles (Vezzosi & Dixon, n.d.) (Calvani, n.d.). (Myburgh & Tammaro, 2013) identify in **constant activity** and **collaborative learning through conversation** some of the main aspects – among others - which shape teaching and learning in a constructivist mode.

Social constructivism develops further on such theories and sees learning as a construction of meaning on two levels, individual and

social; it builds on prior knowledge in an interactive way and is enhanced by social interactions and exchanges (Bruner, 1987) and is fostered by authentic tasks; the setting of learning is the real world (Jonassen, 1994). In such a view, in which learning becomes a social experience, "relationships between individuals" and therefore the guidance of a teacher and/or collaboration among peers can foster learning and enhance it (Vygotsky, 1978) (Jonassen, 1994).

Learning through networks

If constructivism has been the leading paradigm in the years going across the last and present century, it has been argued in the last years that present complex and networked learning environments introduce levels of complexity that ask for a revisiting of learning theories which "were developed in a time when learning was not impacted through technology" (Siemens, 2004), considering that the individual cannot always control what surrounds him, because information is created continuously in a "messy" way (Vaill, 1996, p. 42) and learning is also about deciding which information is important to build on previous knowledge. This is actually reminding of uncertainty and confusion in the learning process to be decreased to get to deep learning as stated by Bruner (1987), but the context is the one in which the Internet and communication and information technologies completely changed the environment in which people learn and such a view suggests that learning also "occurs outside of people" (Siemens, 2004).

Downes (2006) proposes a "network pedagogy", based on the statement that network theory also applies to individual minds. In his

view, and as per the learning theory that has been named **connectivism**, "to learn is to immerse oneself in the network" and students learn by practice and reflection. "As knowledge continues to grow and evolve, access to what is needed is more important than what the learner currently possesses" (Siemens, 2004), and learning means creating networks of nodes. In such a situation the good teacher is the one who demonstrates and models, educators are "aggregators, assimilators, analysts and advisors" (Downes, 2002), that is sort of "curators" (Siemens, 2007).

In spite of some criticism being moved to it (Siemens, 2006), and in spite of doubts about it being either epistemology or a learning theory (Kop & Hill, 2008), and of authors holding it is rather a theory extensions (Kerr, n.d.), what seems significant is that some of the forms of learning, which have become popular in the last years, are based on such an approach; some of the authors who talk about networked learning, connectivism (Downes, 2002) (Siemens, 2004) (Downes, 2006) and "rhizomatic learning" (Cormier, 2011) are those who have been recognized as the first ones to have organized (and introduced) a "MOOC" in 2008.

The philosophy underpinning behaviours is important, but some authors and theories seem to overlap different philosophies; moreover, it is only in practice that theory can find a justification and a real explanation. This is why the present study tries to directly explore from teachers' perspective what they mean by teaching, which is their approach to students' learning and how they perceive their role, in a context where ICT have developed through time in a way that

they has been considered as potentially having a disruptive impact on learning (Sharples, 2002) (Gráinne Conole et al., 2008)(Gráinne Conole, 2013d).

Teaching methods influence student learning

Recent researches on learning environment, which are based on socio-constructivist approaches, consider students as playing an important role in creating "powerful" learning environments (Corte, Verschaffel, Entwistle, & Merriënboer, 2003). Nevertheless, research confirms that learning environments and the student's approach to learning are also affected by the approach shown by teachers (Entwistle & Peterson, 2004) (Lowyck, Elen, & Lehtinen, 2004). The study by Entwistle and Peterson (2004) developed into a conceptual framework in which the quality of learning is affected not only by students' characteristics, but also by what they call teaching-learning environment; their research shows that the nature of the teaching affects student's approach: "University teachers using approaches indicating a student-oriented approach to teaching and a focus on student learning (as opposed to a transmission approach) are more likely to have, in their classes, students who describe themselves as adopting a deep approach in their studying" (Entwistle & Peterson, 2004, pp. 421-422).

Teachers as facilitator and promoters

If "the aim of teaching is (…) to make student learning possible" (Ramsden, 1992, p. 5) and the student is at the centre of learning, **teaching** means **facilitating** and promoting. In the constructivist

theory of learning the focus in on the learning process, and **the teacher is a guide** (Kelly, 1991) who is “responsible for much more than the knowledge and skills to be taught” (Laurillard, 2012a, p. 39). Teaching practices – aiming to enhance learning -- are therefore about **motivating learners**, presenting **realistic problem**s **to solve**, f**ostering the recall of prior knowledge to build on it**, and **creating a social environment to enhance learning** (Phye, 1997). Moving from the work of other researchers, such as Sigel, Elkind, Kuhn, and (Brooks, 1999, p. 102) in an attempt to show that constructivism in not so difficult to put in practice for teachers, in their book propose a framework including descriptions of constructivist teaching behaviours to refer to, in which teachers are "mediators of students and environments", rather than "givers of information and managers of behaviour"; at the core of the discourse, when talking about "good learning" there seem to be **initiative, autonomy, engagement, dialogue, experience, re-elaboration, interaction**.

Starting from an analysis of the research by Entwistle & Peterson (2004), which shows that teaching methods may affect learning effectiveness, Laurillard (2012a, p. 37) illustrates:

“The most effective teaching methods seem to be those that:

- guide students towards independent learning;
- situate the application of knowledge in different contexts;
- stretch students beyond their preferred styles; and
- encourage reflection and self-regulation.”

Teachers are also learners

Learning and teaching are strongly interconnected and teaching is also about being able to learn from learners and from the context (Ramsden, 1992). Teachers are in fact at the same time teaching and learning, and their role is a complex one. In addition, when technologies are involved in the process, in a view to enhance learning, teachers are once again learners themselves, as they have to learn and make the best of technologies in the learning process.

Bloom's Taxonomy of Learning Domains — as introduced by Benjamin Bloom (1956) and modified and adapted in the following years (L. W. Anderson et al., 2000) identifies three domains of educational activities or learning: cognitive, affective and psychomotor (Bloom, 1956). The cognitive domain is about mental skills, and therefore about knowledge, comprehension, application, analysis, synthesis and evaluation; the affective domain (Krathwohl, 1964) involves feelings, emotions, attitudes, values while the third domain, psychomotor (E. J. Simpson, 1966), includes skills and the ability to use instruments, and is considered in the study as being about practical skills and use of technological tools. The meaning of the taxonomy is that a learner has to get to different kinds of results after learning, which attain to the different domains. Learning is therefore meant to acquire knowledge, skills and attitudes. Bloom's taxonomy's original aim was to classify the learning objectives set by educators for students and foster a view of learning where all the domains are involved; the relevance of Bloom's Taxonomy in the present study refers to teachers being both promoters of learning and at the same time being affected by the

support they get about using technology to enhance learning and this study is not going deeper into the categories of each domain.

How can Technology Enhance Learning?

"(…) Technologies shape what is learned by changing how it is learned" (Laurillard, 2012a, p. 4). If **learning** is a situated process, which also depends of the context, the Internet and ICT s have to be considered as part of the learning environment. The relationship between education and technology is not a new issue, and the role of technology is a debated one. Laurillard (2012a, p. 2) considers tools and technologies as "important drivers of education", in spite of education rarely driving their development.

While Jay Cross is considered the first to have talked about **e-learning** (Bonk, 2011) in terms of "learning on Internet Time, the convergence of learning and networks" (Cross, 2004, p. 104), in the last twenty years, following to the birth of the Internet and the opportunity given by digital technologies in the educational environments, there has been an emergence of words and terms (to define learning in a technologically developing environment) which more and more appear in the literature; this results often in an overlapping and inconsistency in terms (Gráinne Conole & Oliver, 2006).

The European eLearning Action Plan defines e-learning as "the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as a remote exchange and collaboration" (Commission of the European Communities, 2001). Gráinne Conole (2012) takes a more research-related approach, defining e-learning "as the development and

research of the application of technologies in education"; she therefore refers to a need for development and research to effectively apply technologies in education.

An article written by Moore, Dickson-Deane, & Galyen (2011) of the School of Information Science and Learning Technologies of the University of Missouri offers a literature review and the results of a study which was carried out to find out how the community of researchers define the learning environment when technology, internet and electronic tools are involved. A visual summary of their review concerning the definition of online learning might help looking at it in a systematic way: starting from the definitions given by different authors it can be noticed that learning online is ALSO about accessibility, but not ONLY, as it also implies connectivity, flexibility and the ability to promote varied interactions. And, most importantly, accessibility is not only about content but also learning experiences (via the use of some technologies) and educational opportunities.

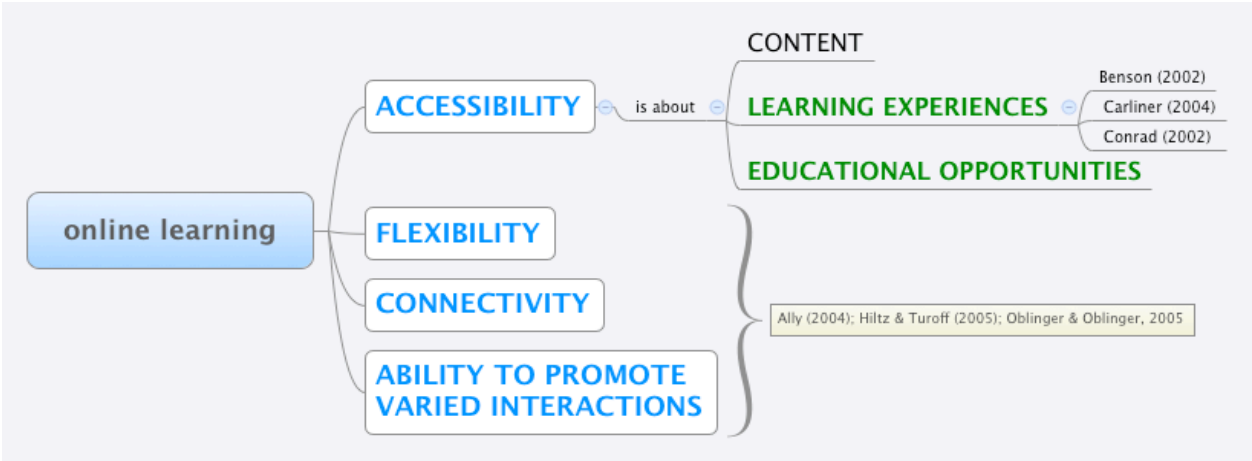


Fig. 7 Visual summary created starting from the literature review by Moore et al. (2011)

This seems to confirm the suggestion proposed by Butcher (2001) not to over-emphasize the concept of distance education and not to use distance education and e-learning terms interchangeably to avoid further confusion. It also appears to be in line with the statement contained in the document by (HEFCE, 2009, p. 8), i.e. that it is more appropriate to "focus on the broader opportunities offered through the use of technology, rather than concentrating on issues such as distance learning".

Oxford Dictionary Online defines **enhancement** as "an increase in quality, value or extent" and lists among synonyms "augmentation, amplification, enrichment" (“Definition of enhancement in English,” 2014). It is not therefore about mere distance education, but on learning enhancement by technology, so that different learning modes and styles might be satisfied. Even more when higher education is involved, it might be not only about distance learning, but rather about **blended learning** i.e. a combination and coexistence of traditional face-to-face teaching methods and activities and (online or not) technology enhanced ones (Littlejohn & Pegler, 2007a).

In this study learning is in fact at the core of the discourse, while technology is considered as one of the possible ways and tools to be adopted, in the continuous effort to enhance learning while designing and facilitating it. Technology is not enhancing learning per se, as it is agreed upon among teachers at the UniPR Co-Lab research centre (Valla, 2013); as it has been argued by Kirkwood & Price (2014), the point is rather how to better use technology SO THAT it may enhance learning. It is necessary for teachers to be “able to master the use of

digital technologies, to harness their power, and put them to the proper service of education" (Laurillard, 2012a, p. 2). Technology Enhanced Learning is therefore used and preferred to other terms in this study, as the "application of information and communication technologies to teaching and learning" (Kirkwood & Price, 2014, p. 6) and in particular, as it has been defined by the Higher Education Funding Council for England as "enhancing learning and teaching through the use of technology" (HEFCE, 2009, p. 2).

In such a perspective, what does it mean to **enhance learning** and therefore to increase quality when e-learning is concerned?

If it is true that Russell (1999), through a comparative research annotated bibliography, makes the point that education cannot maintain the promise to improve education, and that learning in classroom can be delivered the same quality, it is also true that his study refers back to 1999 and it considers sophisticated technology as a complete alternative to less sophisticated systems and classroom teaching. What seems rather important in his book and in his previous article (Russell, 1992) is his asserting that good teaching — with appropriately designed and operated technology — is at least as effective as traditional instruction, which is a reflection to be kept in mind when technology and learning are concerned. As a matter of fact, in her preface to Russell's book, Carol A. Twigg supported him in stating that attention has to be focused on learning and not on technology (op. cit pp. xvii-xviii).

Littlejohn & Pegler (2007b, p. 19) state that "e-learning makes it possible many things that would be unfeasible without the use of

technology (...). It lends itself to personalization, tailoring content and delivery to better suit the needs of individual students." However, the main principles underlying quality seem not to change when talking about learning that is (or not) enriched or enhanced by technology.

Conole suggests what follows as necessary feature for learning to be good: it "encourages reflection, enables dialogue, fosters collaboration, applies theory learnt to practice, creates a community of peers, enables creativity, motivates the learners" (Gráinne Conole et al., 2008, p. 3); she adds that there are many ways offered by technologies to realize it. As a matter of fact, some of the features mentioned by Conole for learning to be good are those who are also established by constructivist theories.

As it has been argued by Masoumi & Lindström (2012), the efforts to develop models and frameworks to assure quality in e-learning have resulted along time in the awareness that "the quality principles that underpin successful online teaching and learning are exactly the same as those that underpin successful face to face teaching", in spite of it being acknowledged that "there may be differences in places, in the resources and supports that are employed" (Oliver, 2003, pp. 87–88).

If the essence is not different, then those principles, which have been described as the ones to be adopted to enhance learning in the constructivist perspective, are to be also applied to all those instances of learning, which are enhanced by technology, therefore also including open learning and manifestations of it, like MOOCs.

Learning enhancement is therefore about **empowering students**, about **sharing and experiencing together**, **interacting in collaborative learning** (Vygotsky, 1978) (Jonassen, 1994). It is further about **fostering student's re-elaboration of concepts** for critical thinking and to encourage initiative and autonomy (Brooks, 1999). The teacher has an important role in the empowerment of the technological environments **by situating and integrating technology in learning** (Calvani, 2000).

Technology and Pedagogy

Instead of looking at technology and pedagogy as of two contrasting worlds with predefined characteristics and instead of assigning implicit characteristics to technological environments, some authors, i.e. Perkins (1991) and Varani (2002), agree that it is advisable to think of **technologies** as of **means to operate a change**, ways to influence pedagogy and to rethink the learning process (Maragliano, 1998) (Maragliano, n.d.), and **that pedagogy and technology should interact to find the right combination for learning enhancement** (Mansfield, 2000). The importance of avoiding any dichotomy between pedagogy and technology is also underlined by Laurillard (2009, p. 6) in an article where she considers **collaborative technologies** as **a way to deliver an "enhanced learning experience**" states:

"How do we ensure that pedagogy exploits the technology, and not vice versa? A strong theoretical statement about the nature of formal learning, and the requirements this imposes on learning design, enables teachers to make sure they are making the best possible use of the new capabilities on offer. Without this, technology is at risk of being used

merely to enhance conventional learning designs, rather than generate designs that are much more effective and innovative."

Openness and Open Learning

The historical reconstruction of openness by Peter & Deimann (2013) shows that openness is not a new term in education, as it dates back in Late Middle Ages; Peter & Deimann (2013, pp. 11-12) argue it is not only about technology, because openness involves cultural and economical aspects and crosses boundaries. Such an historical approach underlines that aspects of openness are multi-faceted and diverse. Open Education was introduced during the 70es of the 20th century by pioneer institutions such as the Open University in the United Kingdom, as reminded by Raffaghelli & Ghislandi (2013). In spite of this, it had been argued by Lane (2009) that the 21st century is the period when information and communication technology define a "new openness" which is often pushed bottom-up and sees the emergence of trends and phenomenon that show the different facets of openness.

Dimensions of openness

Openness is in fact one of those terms -- so frequent in education -- that try and escape definition; considering different aspects or dimensions of openness seems to be a way, shared by some authors -- (Clark, 2013c) (Weller, 2014) -- to avoid a single definition. According to Weller (2014) open education is "a set of coalescing principles" including open access, freedom to reuse, free cost, easy use, digital networked content, social community based approaches, ethical

arguments, discourses on models of efficiency. Similarly, Donald Clark lists seven dimensions of openness in a MOOC (open access, open structure, open educational resources, open collaboration, open accreditation, open source code, open data) and considers Open Educational Resources as one of the dimensions of Openness, clearly stating that "the Open Educational Resources movement provided the ground from which MOOCs could sprout" (Clark, 2013c). While Clark himself sees openness as a possible way to "score" MOOCs, he argues that complete openness is not always a virtue, that openness should first of all be considered as "open in a moral sense" and that flexibility for different models should be allowed for MOOCs.

Anderson (2013) identifies six types of openness that are made possible by MOOCs: expansion of education beyond geographical barriers, freedom of speech, removal of restrictions on the learning content, enrolment without prerequisite, the freedom to determine the learning pace, the provision of a course free of charge.

Starting from the dimensions mentioned by Clark (2013c) and Anderson (2013) for MOOCs, a framework might be designed to define the level of openness of education and to decide time by time which is the best level for the educational context and domain. Basing of such a schema, it might be interesting to explore if teachers are aware of possible dimensions of learning, and if they perceive such distinctions as useful to enhance learning.

Proceeding from the awareness that considering different dimensions might be a way to overcome the difficulties of defining such a broad term as openness, this study tried to investigate what open education

means to educators in terms of enhancing learning by exploring their perceptions about possible dimensions and meaning of openness and open learning.

Educational openness as an integrated process

In agreement with Raffaghelli & Ghislandi (2013), as the international state of the art seem to show, the process involving educational openness includes the use and integration of Open Educational Resources (U.-D. Ehlers, 2013), the Open Educational Practices and MOOCs. As it has been mentioned, openness has in fact been along time an umbrella concept for many movements and phenomenon, among which the Open Educational Resources first (Blackall, 2009)(Friesen, 2009), and later the phenomenon of MOOCs (Massive Open Online Courses), as they first appeared in 2008 (Cormier, 2008) and became widely known since 2012 ("The Year of the MOOC," 2012) .

Open Educational Resources

The term Open Educational Resources has been adopted since 2002, when it was coined during the 2002 Unesco Forum on the Impact of Open Courseware for Higher Education in Developing Countries (Blackall, 2009)(Friesen, 2009) and since then different definitions of Open Educational Resources have been given. The main ones, and the most cited, are those by The William and Flora Hewlett Foundation, by the Organization for Economic Co-operation and Development (OECD) and the UNESCO:

"*OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property*

license that permits their free use and re-purposing by others" ("Open Educational Resources defined," n.d.).

"(…) *teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions"* (*Giving Knowledge for free - The emergence of Open Educational Resources*, 2007).

"(…) *digitised materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research. OER includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open licenses* ("Open educational resources defined by UNESCO," n.d.)."

Putting therefore together the most accredited definitions for Open Educational Resources, by Unesco, OECD and by The William and Flora Hewlett Foundation, **OER** are defined in the present study as **teaching, learning and research digital materials, in any digital format and medium, that reside in the public domain or are released under an open intellectual property license, permitting free and no-cost access, use, adaptation and re-purposing by others with no or limited restrictions**.

Peculiar are most of all the different levels and possibilities of reusing and repurposing, even re-purposing for commercial uses is not

necessarily granted, as this depends on the specific type of license (Atkins, Seely Brown, & Hammond, 2007). Wiley's 4Rs framework defines in fact the fundamental dimensions of Open Content in Reuse, Revise, Remix, and Redistribute (WIley, 2009).

While agreeing with the inclusive statement that "Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge" ("Open Educational Resources defined," n.d.), the focus here is on courses, course modules and materials, textbooks, videos and materials in other formats.

By considering different views and definitions of the concept of "open", Downes (2007, p. 32) argues that "the concept of 'open' entails (…) at a minimum, no cost to the consumer or user of the resource."; Wenk (2010) connects openness in OER to freedom to use, to study and to apply knowledge acquired from it, to make and redistribute copies, to make changes and improvements. This seems to confirm the 4Rs framework and the view by Wiley (2006) and Wiley et al (2014), that the only difference between OER and other educational resources is the license.

Digital Libraries for (open) Learning

In order to use (open) resources in an effective way to enhance learning, they have first to be found; educational resources might be found randomly online on the Internet or collected through portals or digital libraries. The definition of a digital library has been long debated since the end of the 1990s, when research really started taking off in the field, and it was not possible to agree on a unique nor

consistent definition, with definitions being diverse and focusing on turn on different aspects (Borgman, 1999) (Witten, Bainbridge, & Nichols, 2003) (Candela et al., 2007)(Lesk, 2012) (Chowdhury & Foo, 2012). The working definition offered by the (Digital Library Federation, 1998) is a holistic and comprehensive one, which offers a wide view on the complexity of digital libraries: "Digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities". Nevertheless, to the extent of this study (being about learning) the definition of a digital library by (Tammaro, 2008) may be considered more suitable, i.e. a **"virtual space" or cyberspace which access is based on the interaction with digital resources and communities of experts to enhance the traditional learning**. Being a digital library different from concepts that only consider the technological aspect, as databases and repositories, and being it about learning, it is therefore meant in the study as a learning space where Open Educational Practices can be fostered. To this extent, platforms and Learning Management Systems are included, that create an environment where learning can take place online, platforms where MOOCs are organized, but also integrations with Virtual Learning Environments (Virkus et al., 2009) — individually built by users according to their specific needs.

Open Educational Resources to enhance learning

This study refers in particular to Open Educational Resources in relation to learning enhancement and therefore to aspects of OER that might enhance learning. Lists of “potential” benefits of OER for institutions, teachers and students have been made available since 2000 (Butcher, 2001); some of them were mentioned by reports by international organizations , some others as a result of researches and initiatives (“Stakeholders and benefits,” 2013). A brief report was published about benefits and challenges of OER after a questionnaire being sent by the OECD's Centre for Educational Research and Innovation to OECD member countries in 2011; the high rate of response was considered as an indicator of the importance attributed to Open Educational Resources, and among these there was Italy. The findings from the questionnaire showed that the most relevant advantages seem to be that OER offer flexible learning opportunities and play a role in increasing efficiency and quality of learning resources (D’Antoni, 2012). Nevertheless, it was not explained in the study what was specifically meant by efficiency and quality.

Many of the potential benefits identified for educators in lists made following to European initiatives (“Stakeholders and benefits,” 2013) are related to recognition and diffusion, even if the incentives for teachers to share learning resources are not often well known, as argued in the study by Hylén (2006). Some of the identified potential benefits for learners — access to knowledge in a wider context than a course, freedom of access in time and space and enhanced opportunities for learning, seem more related to learning

enhancement, in particular when empowered and free access to learning are concerned.

In spite of the interest for OER on both the international and national scene, and the identification of potential benefits for educators and learners by researchers and organizations, Hodgkinson-Williams (2010) underline that there seems to be "relatively few comprehensive evaluation studies" reporting of **benefits "being 'realised' in practice**" and little evidence of exploration of the use, creation and re-use Open Educational **Resources to enhance learning in practice**; this is particularly true for Higher Education, and even more when concentrating on the Italian scene. This lack or research and evidence is confirmed by (Ranieri, 2012, p. 9), when she reports of the AMELIS project, an initiative of involvement of teachers in a research on OER in schools. The study by (Tammaro et al., 2013) importantly includes learning in the considered approaches, together with technology and organization, when investigating the situation about OER in the Italian Universities; nevertheless, the initial results report of 50% of respondents only generally admitting that “OER might enhance students’ learning” (op. cit., p. 14) without further deepening.

Open Educational Practices to enhance learning

Rather than only concentrating on the content aspect, and therefore to Open Educational Resources, it has been argued by (Camilleri, Ehlers, & Conole, 2011) that in or**der to enhance learning the focus should be "on a change of educational cultures more than on mere resource availability"**, and on a transformation in educational practices (Schaffert & Geser, 2008). As it has been defined in the

Open Educational Quality Initiative (OPAL) mission[12], "**OEP are practices which support the production, use and reuse of high quality open educational resources (OER)** through institutional policies, which promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path. OEP address the whole OER governance community: policy makers, managers and administrators of organizations, educational professionals and learners." ("OPAL Mission," n.d.)("Definition of Open Educational Practices," n.d.). Such a definition also resulted in a formula describing Open Educational Practices as **OEP = OER Usage + Quality + Innovation.** As argued by U. D. Ehlers & Conole (2010, p. 4) "a core element of **the concept of OEP is that it does not separate the resource from its usage**, but takes into account the interplay between stakeholders, organisational elements and resources."

The literature and initiatives involving OEP concentrated on the "connection between opening educational practices and quality of education" (U. D. Ehlers & Conole, 2010, p. 5).

Quality is a not objective characteristic of learning resources, and the need is for considering it in a context. This is the reason why, instead of concentrating on a mere definition of quality of learning resources, this study refers to the possible learning enhancement that teachers perceive they might introduce by teaching in a connected and digital world in the frame of connectivist and social connectivist, i.e. in terms of facilitating and motivating learners.

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[12] a quality initiative that was launched in 2010-2011, resulting from a partnership between international organizations to foster the use of open educational resources (OER)

The need to face open education by not only concentrating on content, on access and availability of resources but rather on "helping individuals and organizations to develop open educational practices" was declared by the Open Educational Quality initiative as follows:

"Open educational resources, and **open education** more generally, are considered to have **huge potential to increase participation and educational opportunities at large and to promote widening participation** and lifelong learning. At the same time, **the past decade has shown that openness in itself is not enough to unfold this potential**. It is important to shift the focus more to the actual open practice of using, reusing, or creating open educational opportunities: open educational practice" ("OPAL | Open Educational Quality Initiative," 2011). As a matter of fact, the focus shift suggested by (Camilleri et al., 2011) from open content and access to Open Educational Practice, i.e. the open practice that makes it possible to reuse and also create Open Educational Opportunities, is a further step towards learning enhancement by openness (Raffaghelli & Ghislandi, 2013).

The **process** that is necessary to undergo in order to transform learning by openness in an educational context — and shift from OER to OEP — goes through **different steps**: it involves for **educators positioning their own personal experienc**e in terms of level of OEP maturity, creating a **vision and strategy for openness and OEP** and finally **implementing and promoting OEP** (Richter & Ehlers, 2012). The framework proposed by (Richter & Ehlers, 2012) is a further confirmation that it is needed exploring the perception of teachers,

who are among those who might transform education and enhance learning by developing openness in their contexts.

MOOCs

MOOCs or MOOP? meaning, key features and innovative aspects

MOOC is the acronym for Massive Open Online Course. It seems generally accepted (Haber, 2013) (Yuan, Powell, & Cetis, 2013) (Nkuyubwatsi, 2013) (Daniel, 2012) that the term was fist introduced in 2008 by Dave Cormier (Cormier, 2008) to describe the course organized by George Siemens and Stephen Downes on "Connectivism and Connective Knowledge" (CCK08). **The acronym seems to be currently widely recognized** ("MOOCs are in high demand, especially for web design, according to new EC study," 2014) and popular; the four dimensions of it have been explored by Anderson (2013), in an attempt "to show how each contributes to the complexity of this education phenomena" (op. Cit. p. 1);

The words "online" and "course" seem the less subject to debate and discussion, as the idea of online courses and online education is not new and some consider open online courses as "a special type of OER" (Fini & Fini, 2009, p. 3). Information and Communication Technologies and the Internet make being online possible, and the term course suggests the idea of a program, a defined schedule for the MOOC.

Siemens (2012) admits that the idea to open up a course is not new, and that Downes and himself wanted "to do for teaching and learning what MIT had done for content with their OCW initiative". Moreover, their course, "Connectivism and Connective Knowledge" (CCK08 had

had its precursor in David Wiley's experience of his "Open Education" course[13] and Alec Couros' open course "ECI831 - Social Media and Open Education[14]" as Downes himself recognized (Downes, 2012).

What seems **innovative about MOOCs**, if compared to previous online learning experiences, is their **scale** (Mc Auley, Stewart, Siemens, & Cormier, 2010) and their being **open for enrolment for free** and at the same time **independently from** factors like **background, previous knowledge, age, and other similar factors**. Anderson (2013) argues that massiveness is more related to scalability than to huge numbers of enrolling students. He further explores the openness of MOOCs, as already explained in the previous section dedicated to openness and relevant dimensions. Another aspect is their **"live" approach**, i.e. their being delivered **in real time**, allowing for student participation in a **huge class** (Ghislandi & Raffaghelli, 2013).

If we define **innovative** as it is defined in the Collins English Dictionary, as "using or showing new methods, ideas" or as in the Oxford dictionary, as "featuring new methods; advanced and original", up to which extent are MOOCs innovative? It has been suggested that MOOCs **are disruptive innovations** for higher education, meaning by disruptive technology a **deep change in all what was previously known and understood**, that must be faced in a radically different way, as proposed by some business literature, and in particular by (Bower & Christensen, 1995), who distinguish sustaining from disruptive innovations (C. M. Christensen, Horn, Caldera, & Soares,

[13] https://sites.google.com/site/themoocguide/cck08---mooc-basics
[14] https://sites.google.com/site/themoocguide/social-media-and-open-education

2011). Christensen et al. (2011) reflect in fact that disruptive technologies can change the whole learning landscape.

MOOCs being a disruptive innovation or not has become a debated matter. While claiming that their analysis "shows that MOOCs contain key characteristics of disruptive innovation, i.e., a combination of new business models with an enabling technology", Yuan et al. (2013, p. 13) warn against possible superficial conclusions one might draw by using without caution "disruptive innovation to explain the phenomenon of MOOCs in Higher Education" (op. cit., p. 14), because education is a very complex system, very different from other market systems. **Siemens elaborates that MOOCs are already going to have a strong impact on education**, as "MOOCs are the internet happening to education and it will take a long time for higher education to digest what that means" (Siemens, 2013). Nevertheless, **Siemens himself maintains that MOOCs are not a universal solution**, and they "are not (yet) an answer to any particular problem" (Siemens, 2012). Ghislandi & Raffaghelli (2013, p. 53) state that "the impressive expansion of MOOCs" looks a real revolution. In spite of this, when describing the Stanford experience made in 2011 with MOOC and the CS221 (Introduction to Artificial Intelligence) course by Sebastian Thrun and Stephen Norvig, they affirm that the learning environment "didn't offer anything new if compared to what had already been experimented in online learning": a homepage connected to an online learning platform, and a set of video lectures, assignments discussion boards and online quizzes (Ghislandi & Raffaghelli, 2013, p. 52). Professor Dominique Boullier, in a guest entry (The MOOCs fad and

bubble: please tell us another story!) published by Olds (2012) provocatively states that massive online courses "are exactly the same courses as the ones our parents used to attend. (yes, indeed, more slides but what else?)". He goes on further claiming that "MOOCs are a technical and business affair without any serious vision of the educational stakes."

Thinking of MOOCs as courses and limiting the definition to the single words which compose the acronym seems to some authors quite reductive. (Clark, 2013c) calls for a need to flip our mind and "see MOOCs not as courses but free content", but this would seem not in line with some views which — as it has been previously described — consider open practices as better ways , if compared to open content, to face the open education discourse (“OPAL | Open Educational Quality Initiative,” 2011).

(Haber, 2013) underlines that MOOC is one of those vague and undefined terms that do not give any unambiguous and non-contradictory view of a concept. Far from only being courses, Haber considers MOOCs as being fundamentally a way to experiment and do purposeful research in the educational field. This view is also shared by Siemens (2012): "They are an open and on-going experiment. They are an attempt to play with models of teaching and learning that are in synch with the spirit of the Internet. As with any research project, it is unlikely that they will be adopted wholesale in traditional universities. Most likely, bits and pieces will be adopted into different teaching models."

As suggested by Clark (2013b), P — for pedagogy — might provocatively be used in the acronym to substitute C — for courses — with the aim to remind all those talking about MOOCs that **it is not enough to talk about technology, as the point is whether the pedagogical innovation brought about by MOOCs is a real innovation and whether it might be a real opportunity or a challenge for higher education.** It is in this perspective that MOO**P**, instead of MOOC, is used: MOOCs are considered in the study, together with open learning, as the starting point of a reflection that considers them a possible way to answer to learning needs in an increasingly complex, information-rich, technologically enhanced and interconnected world and puts pedagogy at the centre of the discourse.

Pedagogy and types of MOOCs

There is **usually a classification of MOOCs in two main categories**, which correspond to the d**ifferent pedagogical interpretations** of MOOCs by the first organizers of the course on "Connectivism and Connective Knowledge" (CCK08) and by the "Stanford branch" **: cMoocs (connectivist Moocs) and xMoocs (content-based MOOCs).** As of such a classification, CMoocs are based on collaborative learning among participants, xMoocs usually include video presentations, quizzes and testing and seem to transfer online some features of the standard classroom. According to Yuan et al. (2013, p. 7) such a distinction mirrors the "learning process versus learning content debate" that educationalists have had for many decades and failed to resolve" and the different approaches to education by behaviorists and

constructivists or connectivism supporters. As it has been claimed by Anderson (2013, p. 4), "different MOOCs (as in any other form of educational delivery or organization) employ different pedagogies"; in a pre-print, and in her blog, Gráinne Conole, (2014) argues that the **cMOOC and xMOOC classification "is too simplistic"** and suggests an **alternative perspectiv**e by her **12-dimensional MOOC classification**, in which diverse dimensions are listed to classify MOOCs (Gráinne Conole, 2013d). Moving from a proposal of four dimensions by (Downes, 2010) (autonomy, diversity, openness, and interactivity) Conole suggests some further ones, and gets to list the following twelve dimensions:

1. the degree of openness,
2. the scale of participation (massification),
3. the amount of use of multimedia,
4. the amount of communication,
5. the extent to which collaboration is included,
6. the type of learner pathway (from learner centred to teacher-centred and highly structured),
7. the level of quality assurance,
8. the extent to which reflection is encouraged,
9. the level of assessment,
10. how informal or formal the MOOC is,
11. autonomy,
12. diversity.

She states that "this classification framework gives a far better indication of the nature of each MOOC than the simple classification as

xMOOCs and cMOOCs" (op. Cit.). A further **alternative taxonomy**, carried out **by learning functionality** and therefore **starting from a pedagogic perspective**, which is also mentioned by Conole, is the one proposed by Donald Clark: transferMOOCs (deriving from a transposition of traditional courses into MOOCs), madeMOOCs (more innovative as regards the approach to use of videos and assignments, more relying on peer-work, peer-assessment, and interactive experiences) synchMOOCs (delivered in specific periods, with a start and an end date), asynchMOOCs (may be taken anytime, no start and end date are given), adaptiveMOOCs (it is about MOOCs where learning experiences are personalized and "depend on dynamic assessment and data gathering on the course" -- this is quite an innovative, interesting and --(attuale) research theme), groupMOOCs (based on collaborative groups of students which are dynamically created and recreated during the course, with the purpose "to increase student retention"), connectivistMOOCS (relying "on the connections across a network rather than predefined content"), miniMOOCSs (short courses) (Clark, 2013a). Such categories seem not to be exclusive, and each MOOC may present features from different ones.

There is not only an attempt to classify mOOCs and create a taxonomy of them; there seems also to be an on-going process of modification in the meaning of MOOCs, as it is expressed by their specific features. George Siemens reflects in his blog on the present generation of MOOCs which, differently from the first ones — “integrating social networking, accessible online resources, and (…) facilitated by leading practitioners in the field of study” (Mc Auley et al., 2010, p. 10)—

seem to him presently a blurry concept, a degraded version of true openness concepts, reduced to access (Siemens, 2013).

May MOOC enhance learning?

Considering that it appears so challenging and interesting for researchers to define and classify MOOCs, does the question make sense, if MOOC may enhance learning? It seems that the approach by Clark (2013a) and the taxonomy by Conole, (2014), that have been described in the previous section, may be the key for the problem, being about an **effort to classify MOOCs starting from the learning perspective**. This might suggest that features as **attention to problem solving, personalization, interactive experiences, innovative assessment approaches,** — e.g. peer work and assessment — **collaboration, sharing knowledge across a network** may be **indicators of quality and learning enhancement**. A careful consideration of such features seems to suggest once again, as already discussed when talking about "Technology Enhanced Learning", that **the principles to evaluate the degree and type of enhancement do not change depending on ICT**, as they mainly depend on the learning theory and paradigm that are considered as a reference point.

READINESS for Open Learning and MOOCs

This study concerns first of all **learning**, and is about the perceptions of teachers as promoters and facilitators of learning; it therefore also regards the **possible role of technology in enhancing learning in an academic environment, where information and communication technologies have changed the conditions in which educators and**

learners act. Given such premises, the research explores Open Educational Resources and the phenomenon of MOOCs as possible ways to enhance learning by means of technologies. **Technology and openness introduce a necessary change for institutions, teachers and learners**; for this reason, **two levels of readiness are to be considered:** change readiness and technology enhanced learning readiness.

Change readiness is here considered as a necessary condition to support or refuse a change, and as a level of possible involvement of the members of an organizations in change, basing on their attitude towards the implications of such a change. It is recognized by Bryant et al. (2014) that implementing open pedagogies within institutions often encounters resistance to change. Holt & Vardaman (2013, p. 9) define the initial readiness (for change) as "the degree to which the organization and those involved are individually and collectively primed, motivated and capable of executing the change". They state that "readiness for change is comprised of both individual difference and structural factors" (op. Cit., p. 10) and includes individual factors and beliefs regarding the change: feelings and beliefs concerning appropriateness, support, efficacy, valence (Holt et al., 2007) (Armenakis et al., 1993, pp. 681–2).

Technology enhanced learning readiness has been faced in much literature in terms of readiness for e-learning. Chapnick (2000) listed the following factors as affecting e-learning readiness: psychological, sociological, environmental ones, together with other elements, i.e. Human resources, financial readiness, technological skills and

attitude, equipment and content readiness. Human resources (people) were also considered important by (Haney & Haney, 2002). Aydın & Tasci (2005) confirmed it, and discussed three constructs for each of the factors they listed (technology, innovation, people, and self-development), such as resources, skills and attitudes. Guglielmino & Guglielmino (2003) distinguished among technical readiness and readiness for self-directed learning, and identified the aspects to be considered to explore e-learning readiness in knowledge, attitudes, skills and habits. There is not much evidence of specific studies investigating readiness for open learning and MOOCs. Rajabi & Virkus (2013) interestingly propose the results of a qualitative research on academic readiness to establish Massive Open Online Course, thus confirming the need for such an investigation.

Summary of the Discussion of the Literature Review

The literature review shows that in spite of technology for allowing innovations that might sometimes be disruptive, the essence of learning has not been deeply changed by technological developments; the approaches to teaching depend on beliefs about learning theories, attitudes toward learning and affective aspects, i.e. on people, who are key. Learning is a complex and situated process, that is shaped and influenced by the context and the environment in which it takes place and in the constructivist theory it is about active construction of knowledge, that does not happen without involvement and interpretation, and is shaped by collaborative learning through conversation. The role of the teacher, in such a view, changes from expert to guide and mentor. But even theories can only find a justification and explanation in the practice, and it has been confirmed that teaching methods influence student learning, together with

the role that teachers play when teaching. In the depicted constructivist landscape teaching practices that can enhance learning seem those that can push motivation and adopt problem solving approaches, building on students prior knowledge and creating a social environment to enhance learning. In spite of ICT for allowing innovations that might sometimes be disruptive, the main point is therefore about technology being or not able to be used in a way to enhance the above-mentioned aspects. Different authors admit that Technologies can add to all this, and can enhance learning if they are not looked at separately from pedagogy, i.e. from learning is in its essence, and only if they are looked as "amplifiers"

Openness has further widened the already broad landscape of learning and has been fostered by digital technologies and the Internet, so that OER have been considered as possibilities to enhance learning and MOOCs as a new way of looking at learning in an open perspective.

OER introduce a very comprehensive and multi-faceted approach to openness, discussions and debates about openness and its dimensions show Evidence is given from the literature that educational openness might be looked at as an integrated process including the use and integration of Open Educational Resources, the Open Educational Practices and MOOCs.

Nevertheless, the literature shows that the practice has not been so diffused for OER and open practices. MOOCs seem to be recognized as a potentially disruptive phenomenon, but the question seems to be about their being presently really innovative or not under the pedagogical point of view. Much excitement and initiatives on the go about MOOCs, but it is not clear from evidence if there are real learning enhancement made possible by them in an academic environment.

In order for technologies to be used in an effective way and for open learning to be applied in the practice to enhance learning teachers seem to need to believe in the possibility for technology to do it; to believe in

openness in terms of learning enhancer; to acquire competences under both the pedagogical and technological point of view.

If the teacher believes in technology to potentially enhance learning, if he thinks that open learning is a further enhancement, than it is to be verified if he thinks that investing in OEP and MOOCs is worth for him to enhance learning, and if he has the competences. To acquire competences the teacher should therefore also wear the clothes of the learner, so that not only the cognitive aspects would be involved, but also feelings and skills.

All this might be expressed systematically in terms of readiness for open learning and MOOCs as perceived by teachers, who are those who can apply strategies to enhance their students' learning; not much evidence is available that specifically faces the issue, which confirms a need for research in that direction.

The University Context

University of Parma

The University of Parma is a middle-sized State Italian University that was founded in the 12th century. A number of 32.050 students is enrolled in undergraduate and post-graduate courses; 35% of students are coming from the area of Parma, 23% from other areas in the same region, more than 40% from other regions, with an improving number of foreign students. The total number of Faculty members, excluding visiting scholars (674) and temporary research contracts (329) is 879, while the number of Administrative and Technical staff is 899, for a total of 1778 stable employees ("Relazione del Rettore Loris Borghi," 2013). Faculty members belong to 18 different Departments covering diverse domains: Department of Classics, Modern Languages, Education, Philosophy, Department of Arts and literature, history and social studies, Department of Clinical and Experimental Medicine, Department of Biomedical, Biotechnological and Translational Sciences, Department of Surgery, Department of Neuroscience), Department of Civil, Environmental, Land Management Engineering and Architecture - DICATeA, Department of Industrial Engineering, Department of Information Engineering), Department of Mathematics and Computer Science, Department of Physics and Earth Sciences "Macedonio Melloni", Department of Chemistry, Department of Pharmacy, Department of Life Sciences, Department of Food Science, Department of Law, Department of Economics, Department of Veterinary Science ("Università degli Studi di Parma," n.d.).

The organization includes

- the Rector, who represents the University;
- the Pro-Rector Vicarious;
- the Academic Senate board, that defines the development of teaching, research activities and student services;
- the Board of Directors, that deliberate on general administration and financial affairs and property management;
- the General Director, who is in charge of managing student services, university assets and administrative and technical staff.

The Central Administration body is organized in 5 management areas and 27 sections, each area having a strategic manager, each section having a head. One area is completely dedicated to learning and services for students.

As regards the offer of learning opportunities and courses for students, the University holds 35 first degree courses, 6 one-cycle degree courses, 38 second degree courses, as well as many Postgraduate schools, Postgraduate Teacher Training courses, several Masters' Degrees and Research Doctorates (PhD) (“General description of the institution,” n.d.).

The fact that two-thirds of the University's registered students come from outside of Parma and the Parma Province is an important aspect to consider when online learning and the use of ICT to enhance learning are concerned.

At the moment when the research was carried out the University of Parma had just been re-organized under different points of view,

following to national regulations that had to be respected; Departments substituted in fact Faculties, which do not exist anymore, as Departments hold both responsibility for Didactics and Research. Moreover, a new Rector and strategic management team was appointed since November 2013, so that the University of Parma has been living a period of potential changes.

Organisation and technology enhanced learning

As it is evident from the document ("Struttura Organizzativa - ruoli, funzioni e ambiti di competenza," 2013) which lists the management areas and the 27 substructures (sections), and their assigned attributions, one area is completely dedicated to learning and services for students, while the organizational structure in charge for providing technological infrastructure for the whole University of Parma is the Informatics and Telecommunication Section (Settore Informatico e Telecomunicazioni di Ateneo - SITA), which belongs to the area that is dedicated to "Buildings and Infrastructures". At the core of the activities carried out by technicians there are systems, applications, and the network infrastructure (Valla, 2013).

A sub-section which is named "support to education and e-learning", apparently mainly maintains the Learning Management Platform LEA (a Moodle based one), the one for the personnel learning, and the videoconferencing software; it looks therefore mainly involved in providing an infrastructure and making platforms available on a constant basis without troubles.

Other University Centres are providing services and doing research related to learning and online learning. Centres at the University of

Parma have to be of two different and alternative types: service centres and research centres.

CEDI, Centro Didattico di Ingegneria, is a service and user oriented centre which aims to satisfy the specific needs of the professors of Engineering. It received the certification for "design and management of education supporting services" in 2000.

CERD, Centro Universitario di Servizi per la Ricerca e la Didattica is a centre that operates by potentially offering services to all students and teachers: nevertheless services are offered in particular to those (students and teachers) belonging to the Department of Economics.

UniPR Co-lab is a **research centre**, which was initially created at the University of Parma between the members of the Department of Information Engineering and the Department of Classics, Modern Languages, Education, Philosophy (A.L.E.F.). Research is carried out, by and among the centre members, to create competences for Technology Enhanced Learning and develop multi-cultural and interdisciplinary collaborative networks.

Strategy for e-learning

Among the first steps that were moved by him, the new Rector has confirmed the attention to innovation in education by appointing a Pro-rector for Education who designated a new Delegate for E-learning. The University of Parma adopted what was referred to at that time as "distance education" and "telematic learning" by following the Progetto Nettuno from its very inception in 1992. It was about recording video lecture in a studio and making the recordings

available on the Internet for students. his project was abandoned by the University of Parma in 2009.

A document containing the e-learning strategy for academic years 2013-2014 — including the will to empower education and learning through e-learning "to promote blended learning and flexible learning, to improve the quality of the academic education and meet different learning styles and students' needs" — had been signed by the previous Rector as fostered by the previous Delegate of the Rector for e-learning, who was also an expert in digital libraries and aware to open learning potentialities to improve learning quality, and was at that time the Director of UniPR Co-Lab. Nevertheless, the analysis of such a document shows there is no date on it, and strategy had probably not been extensively communicated to the University teaching nor administrative members, if most of present strategic managers are not aware of such a strategy and do not recognize it as a strategic document. As it is evident from some literature on business studies, a strategy has to be duly stored and it has to be communicated within an organization to be effective and for people to act in a consistent way with its directions: communication plays an important role in turning strategy into action (D. G. Simpson, 1998) (Speculand, 2006).

University researchers and professors, who are - when involved in their teacher's role - an interface between student development and organizational strategies which support their activities, have to be duly informed about institutional strategies in order to comply with them. Nevertheless, words mean not so much for organizational change

if progress in not bred by decisive action by people (Atkinson, Howells, Reilly, & Ross, 2012).

In the "University regulations about learning by Università di Parma" there is no specific rule concerning either e-learning nor technology enhanced learning or similar aspects, and no incentive is foreseen for using technology in the view of learning enhancement (“Regolamento didattico di Ateneo,” 2013). The Head of the Learning Area confirmed such an interpretation of documents. In other academic contexts there is evidence of strategic documents containing rules on incentives to be given to teachers who enhance learning by technology i.e. the regulations by the University of Padova about incentives for learning activities dating back to 2000 (“Regolamento per gli incentivi alla didattica,” 2000). Being specific regulations absent, professors do not have any obligation in the choice of their strategy where the use of technology when learning is involved. Specific rules might be appointed at the level of the Degree Course, because the local academic Regulations allow for it. Nevertheless, the search did not reveal any published documents being available, that specify neither specific guideline nor regulation to be followed when teaching.

The "Performance planning document - 2014-2016", which was elaborated by the new strategic team at the University of Parma, sets among intervention lines the enhancement of learning services for students, together with students' support (“Piano della performance di Ateneo triennio 2014/2016,” 2014). "E-learning" was put at the core of the planning for the coming three years in the frame of the triennial programming document that was presented to the Ministry of the

University and Research (MIUR) to ask for additional funding for the implementation of additional services ("Programmazione dell'Università degli Studi di Parma - Triennio 2013-2015," 2014).

At the moment when the first interviews were carried out, the planning document had not yet been officially internally nor externally communicated, as it was published on 18th April 2014 ; moreover, the key informants chosen among strategic managers confirmed that there is a will and actions are being put in place to design, implement and communicate a strategy which involves Technology Enhanced Learning and Open Learning in a perspective to enhance learning.

The official web site at the University of Parma published some news on 28th March 2014 about UNINOVA, a joint centre among three different Universities (Università di Ferrara, Università di Modena e Reggio Emilia and Università di Parma) of the same region (Emilia Romagna) being created, with the aim "to promote the use of advanced technologies and innovative systems to support learning organization" and to promote "integrated and multi-media learning methodologies"("Presentato il Centro interateneo UNINOVA," 2014).

As it is confirmed by documents being recent and updated, the situation regarding e-learning at the University of Parma has been in continuous evolution in the recent times; for this reason, giving a detailed and at the same time up-to-date portrait of the situation was at the same time challenging, demanding and interesting.

UniPR Co-Lab

UniPR Co-lab research centre started informally in 2011 from an idea of a **collaboratory** , as defined by (Wulf, 1989) (Bos et al., 2007), that is an organizational entity where members can interact independently from geographical boundaries and distance, interact and access information on common research areas through digital libraries.

UniPR Co-Lab members develop research activities on the integration of digital technologies for learning and digital publishing to improve learning quality and promote interdisciplinary cooperation to the following aims:

- create competences for online learning;
- develop methodologies and technology-supported learning contexts, by adhering to local and international projects, and acting in a collaborative environment;
- create a research system, through multichannel and multimedia platforms, and an organizational infrastructure consisting of researchers, tools, knowledge and processes, geared towards fostering digital publishing and the dissemination of the results of research ("Statuto del Centro di Ricerca UniPR Co-Lab," 2013) (Valla, 2013).

UniPR Co-Lab is now an open environment in which professors and experts may be accepted and participate in projects and initiatives from different domains.

The two Departments starting the UniPR Co-Lab were the Department of Information Engineering and the Department of Classics, Modern

Languages, Education, Philosophy (A.L.E.F.), but other professors have been accepted among members and others are joining, upon request and approval by the Centre Council.

Currently, among participants (a total of 30 teaching personnel units) are:

- 10 professors (including the Director) and 10 researchers of the Department of Classics, Modern Languages, Education, Philosophy (*Dipartimento di Antichistica, Lingue, Educazione, Filosofia - A.L.E.F.*);
- 2 professors (including the Director) and 3 researchers of the Department of Information Engineering (*Dipartimento di Ingegneria dell'Informazione*);
- 1 researcher of the Department of Arts and literature, history and social studies (*Dipartimento di Lettere, Arti, Storia e Società*).

Four contract professors have been accepted, who refer to the above Departments, one of which is the scientific coordinator. A new Director was appointed for the Centre on 16th April 2014, after quite a long period without any Director, due to the retirement of the previous one. As regards non-teaching personnel, there is currently only one unit of personnel[15] available, who is in charge of diverse activities: technical coordination in blended courses, online learning management and tutoring in post-graduate courses, technology enhanced learning instructional design and planning of technology

[15] the unit of personnel is the person who is carrying out the present study

enhanced learning activities in collaboration with teachers, research in digital library and e-learning related topics, Learning Management System maintenance, maintenance of the Linux server that is used for testing and installation of open source applications to test, support to UniPR Co-Lab teachers for videoconferencing and using learning software, digital reporting of activities, creation and publishing of digital publications, technical support and tutoring to students during researches on innovative learning activities. Hardware and software are available for this person from the previous position, and no other additional resources were made available after the institution of the Centre. Moreover, no specific economical resources are currently available for the Research Centre. Such a lack of resources is probably one of the reasons why most of researches and learning design activities tend to use openly available applications and open source software and are carried out without any investments, even if sensitivity to openness is one of the values shared among some of the members, as it is shown by some of the activities carried out (Tammaro & Valla, 2012).

This considered, collaboration with some units of the technical personnel of the CEDI section and of the Department of Information Engineering, and the use of their equipment on some occasions seemed to be of major importance. As for 20th May 2014 no administrative personnel had been appointed, and such a situation was a challenge when administrative and economical matters were involved.

The main value shared by members (and those who collaborate with the Centre on specific projects) is **probably being alert enough to innovation and aware of the importance of Technology Enhanced Learning in the academic pedagogical landscape, in a perspective to enhance learning.** As it appears in some literature, the first generation of e-learning and technology-driven education presented some aspects which led to a failure in learning enhancement (Bonaiuti, 2006); among these, a sometimes excessive attention to mere technological aspects. The Collaboratory was born spontaneously in the firm belief that "academic institutions often present a hierarchical structure that may create difficulties and delays when innovation and learning are concerned" and that "the present times require an interdisciplinary and collaborative approach to act in a dynamic environment despite the limited availability of resources" (Valla, 2013, p. 339). Nevertheless, the need for recognizing the value of such an experience led, to the formalization in a Research centre in September 2013; such an institutionalisation remains valid over three years, and includes a need for following specific administrative rules, as declared in the "Statute" and "Regulations" and may have in a sense re-established some rigidities in the functioning mechanisms (op. cit.), in spite of no additional economical neither human resources being appointed.

Since the spontaneous birth of the collaboratory, diverse activities where organized, which were documented in some activity reports (Tammaro & Valla, 2012) and papers (Tammaro, Valla, Monaco,

Longhi, & Valero, 2011) (Valla & Monaco, 2012) (Tammaro, Valla, & Longhi, 2012) (Valla, 2013). Among the activities were

- the involvement of both teachers and students in the use of videoconferencing software for diverse purposes to learn how to use it through practice and realistic activities;
- the organization of multi-disciplinary and joint seminars and conferences among different Departments and with external institutions: such events were recorded and documented, so that they could be disseminated as videos and digital publications.

The available personnel unit gave continuous training support to teachers who wanted to experiment innovative activities to enhance learning through the use of technologies inside and outside the physical classroom, i.e. Social reading and social bookmarking activities for language learning. The research and experiences reinforced the idea that Technology Enhanced Learning includes repositories of digital learning resources but might also go further, led to the acquisition by the involved teachers of competences and skills regarding the correct choice of technological tools suitable for specific contexts and needs and to the use of social and e-collaboration environments, such as video and image sharing platforms (YouTube, Vimeo, Flickr, Moodle), online scheduling tools (Doodle, Google Calendar), social bookmarking tools (De.li.ci.ous, Diigo), social reading and writing environments (Wikis, Highlighter, Bookliners).

The scientific coordinator introduced in April 2014 some activities that UniPR Co-Lab might be involved in the future, in the frame of the

European project EMMA as part of the network to test some MOOCs by sharing the Work package of such a project but, as of 27th May 2014, there were no specific decisions taken nor official experiences by UniPR Co-Lab Centre about open learning and MOOCs.

UniPR Co-Lab is being involved in the University planning for e-learning for the following years, following to the authorization of a project (ENGpower) that aims at enhancing English learning for students by using technology ("Programmazione dell'Università degli Studi di Parma - Triennio 2013-2015," 2014). The project directly involves one teaching member and the technical unit of personnel at the project management and coordination level. Moreover, two members of the UniPR Co-Lab have been appointed and authorized to participate in a research project, together with the Learning Technology Institute at the Council of National Researches (CNR), which is about e-learning and digital libraries. The design of learning activities for language learning in a technology enhanced way is being studied and researched by language teachers, together with the technical support and instructional design unit. Finally, experiences and researches in digital publishing are on-going, to support learning experiences.

The interviewees

The seven interviewees were chosen among those teachers[16], who teach by sharing values in the UniPR Co-Lab about **the importance of technology enhanced learning in the academic pedagogical landscape to enhance learning.** The academic discipline and the specific subject matter were not considered making a difference in the selection, while on the contrary it was considered a possible interesting way to have more diverse and broad views.

Interviewee's profiles

Interviewees' profiles were first written by the researcher basing on the collected data and on document analysis and further revised by the interviewee's in the process of member checking. The profiles give an idea about the academic domain, the teaching experience, any diversity of locations and degree courses in which teachers are teaching and have operated.

Andrea Lasagni (AL) is teacher of "Istituzioni di Economia Politica" (Principles of Political Economy) at the Department of Economics. He is 44 years old and is Italian. He graduated in Economics at the University of Parma in 1996 and got a Master of Arts in International Economics at the University of Sussex (Brighton, UK) in 1999. He got a PhD in Political Economy at the Università di Pavia in 2006 and is a researcher and teacher at the University of Parma since 2005

[16] In an academic environment the term professor or lecturer is usually adopted; in this study the term teacher was preferred, because the constructivist paradigm is considered, and to imply the idea that it was about professors interviewed in and about their teachers' role.

He was involved in 2012 in the planning of a portal for e-learning to be used by teachers of the Department of Economics.

He is involved in E-learning at the University of Parma since November 2013 as Delegate of the Rector for E-Learning.

Gillian Mansfield (GM) is lecturer [17] in English Language and Linguistics (both first cycle and second cycle Degree) at the Department of Classics, Modern Languages, Education, Philosophy (A.L.E.F.) She is English but has been living in Italy for many years. She graduated in French and Italian Language at the University of Reading in the United Kingdom, graduated in Foreign Languages and Literature at the University of Parma and obtained a Master of Arts in Applied Linguistics at the University of Birmingham in the UK. She has been a lecturer at the University of Parma since 2000, but taught English Language from 1974 as foreign language assistant at the Institute of Foreign Languages, Faculty of Letters at the University of Parma, before becoming Technical Director of the University Language Centre from 1991 to 2000 and then President from 2000 to 2007.

She has been involved in the design and coordination of an online project for language learning at the University of Parma (2001-2003) and was Delegate of the Rector for Foreign Languages learning for 3 years. She was the Vice Director of the former Department of Foreign Languages and Literature for 2 years.

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[17] In the whole thesis "teacher" has been preferred to the terms "lecturer" and "professor" to identify interviewees for the reasons that have been previously explained. Nevertheless, the interviewee, who revised it, preferred to put it like this.

She was actively involved in the coordination of national and international projects for language learning and is at present - since 2012 - the President of the European Confederation of Languages Centres in Higher Education (CercleS).

Maria Cristina Ossiprandi (MCO) is teacher of "Veterinary microbiology and immunology " (first cycle Degree) and " Infectious disease in livestock" (second cycle Degree) at the Department of Veterinary Medicine. She is 52 years old and is Italian. She graduated in Veterinary medicine at the University of Parma in 1989 and is a veterinary surgeon. She is a teacher at the University of Parma since 1995 and is teacher in some Postgraduate Schools in Veterinary Medicine and Director of a Postgraduate School since 2009. She has been Delegate of the Faculty for guidance and placement activities, member of the Tutoring committee and member of the learning committee for the Faculty. She is currently Vice Rector for Learning (Didactics) at the University of Parma since November 2013 and strategic referee for the E-Learning 2013-2015 program at the University of Parma since April 2014.

María Joaquina Valero Gisbert (MV) is a Spanish teacher in Spanish and Language Translation (Lingua e Traduzione Spagnola) at the Department of Classics, Modern Languages, Education, Philosophy (Dipartimento di Antichistica, Lingue, Educazione, Filosofia - A.L.E.F.) She graduated in Spanish Language and got a PhD in Linguistics at the University of Valencia. She has been a teacher since 1990, she taught at Università Statale di Milano and is now a Researcher at the University of Parma . She taught both in first cycle and second cycle

University courses during the last years. At present she teaches to first-year students (first cycle degree). She is also at present in charge of a professional course delivered to teachers who teach Spanish in schools. She coordinates an International Master's Degree in "Translation and audio-visual media" in Parma, which is a completely online Master's offering a joint degree from the University of Parma and from UAB in Barcelona. She was one of the first teachers to join UniPR CO-Lab research Centre from its inception, due to her specific interest in research related to online learning. The researcher started to cooperate with her many years ago, when UniPR Co-Lab did not exist, yet, as the technical coordinators in her Master's. A collaboration is currently active for the design and production and delivery of online activities for students.

Luca Veltri (LV) graduated in Telecommunication Engineering at the University "La Sapienza" in Roma in 1994 where he also got the PhD in Information Engineering in 1999. He has been a Researcher at CoRiTeL - Consorzio di Ricerca nelle Telecomunicazione from 1999 to 2002 and is now a Researcher at the University of Parma since 2002, where he teaches classes on Telecommunication Networks and Network Security at the University of Parma in first-level and second-level degree courses, at the Department of Information Engineering.

He has been carrying out and coordinating research about peer-to-peer networks, multimedia communication and network security for many national and international research projects in the field of networks and multimedia communication. He is the author of many publications in international journals, and has been lecturing in

conferences and workshops worldwide. He is also co-author in some internet-draft by the Internet Engineering Task Force (IETF). He is at present the Director of UniPR Co-lab Centre.

Francesca Zanella (FaZ) graduated in Literature and Philosophy at the University of Ca'Foscari of Venice and is an academic researcher at the at the Department of Arts and literature, history and social studies where she has been teaching since 2001-2002 academic year.
She has taught History of Architecture and Design (first-level Degree at the Department of Arts and Humanities) and History of Contemporary Architecture (second-level Degree in History of Art) and currently teaches Histories and theories of exhibitions and settings (Storia e teorie delle esposizioni e degli allestimenti).
She is presently Pro-Rector at the University of Parma and is in charge for the coordination of the internationalization activities.

Francesco Zanichelli (FoZ) is an Aggregate Professor of "Operating systems" (first cycle Degree) at the Department of Information Engineering. He graduated in Electronic Engineering at the University of Bologna and obtained a research grant at IBM Italia to cooperate, together with the University of Bologna, on industrial robotics themes. In 1993 he spent a period at the University of Florida to go deeper into mobile robotics themes. In 1994 he got the PhD in Information Technologies at the University of Parma. The research activity, initially focused on intelligent robotics and later centred around distributed and multimedia architectures and systems, has been carried out in the framework of several regional, national and international research programs such as those funded by Emilia-

Romagna region, the national Research, NATO and the European Commission. He has been teaching since 1995 and has taught other courses in the past, e.g. "Multimedia Systems". Francesco Zanichelli was one of the founders - in 2002 - of the spin-off ETHERIA, to develop multimedia digital video-control for vehicles in motion (CameraCar systems).

Data Analysis

Based on the data analysis methodology that has been chosen, a set of categories emerged related to the research questions, and the study aims and objectives. Each category is first presented and further discussed in the following section.

Analysis

A-C1 Open approach rather than Open Content for learning enhancement

This category refers in particular to the research question "what does open education mean to educators in terms of enhancing learning?"

Diverse meanings of terms and diverse motivations for the usage of open approaches and OER have emerged from the interviews and it was not possible to identify a unique common and unambiguous understanding; nevertheless, the data revealed some common aspects. The answers about the idea of openness were diverse and many matters were raised, which show a differentiated thus broad approach to openness. Remarkable was the absence or small application of open education to the teaching experience by interviewees: none of the interviewees mentioned any purposeful open educational practice, and only an occasional use of OER was described.

OER and OEP: understanding and meaning

The interviewees reported having already "heard" about **Open Educational Resources**. Two of them reported having gone deeper in the matter since some months (IT02, IT03)[18]. Nevertheless, their attitude looked somewhat and sometimes uncertain. Their first reaction to the term suggested that it sounded rather ambiguous and was not known to them. In spite of the same definition of OER being given to them, data show that the following conversation was not necessarily driven nor guided by such a definition. Apart from different interpretations of "open", as it is further presented, some of the ambiguities about the definition led to diverse interpretation of Open Educational Resources. One interviewee interprets as OER also those resources that might be taken from the real world and applied for educational purposes by a process of contextualization. As a matter of fact, GM seemed to attribute a different meaning to re-purposing from the one that seems implicit in their definition; her view of repurposing consists in reusing learning materials to learn, which were not created for learning purposes and is meant as a way to give students real and authentic resources to learning with, authenticity being one of the aspects mentioned in social constructivism as enhancing learning.

Another interviewee presented an interpretation of OER, which seems more similar to the learning object model, something that is expressly created for education, rather than a resource for learning. She

[18] Codes are used for interviewees, IT stands for Interviewed Teacher, the number has been randomly assigned. In some cases, when considered appropriate, the initials are used — as shown in the interviewees' profile section on page 130 - to make teachers recognizable.

declared, “I never used any materials designed in such a way. I employed open digital material that I found in different deposits as electronic resources, but no materials designed ad hoc, from the beginning…” (IT06).

Meaning of “Open” in Open Educational Resources

Apart from access, the meanings assigned by most interviewees to the word “open” in the OER acronym seems mainly associated to the “freedom” that is allowed by access to contents.

Open as (free) access and use (license)

The view that being open means being freely accessible — without having to pay — seemed quite common among teachers. Moreover, one interviewee underlined the importance of the “immediacy of access to information” (IT04) for learning. Coherently with this, all learning materials released by LV are freely available and accessible without any authentication on his web site. The other teachers make their resources available inside the platform, where the authentication is necessary for students. It is worth noting that open access is sometimes associated to access to the platforms, and MV seems to associate open educational resources to the access to video recordings of lectures inside a learning platform.

Remarkably, some add a further level of access restriction, by putting a password to enrol into the specific area where materials are available in learning platforms. The reasons for restricting access seem mainly related to copyright issues for materials that are not created by teachers themselves.

The analysis shows therefore a view of OER as a lack of restriction to access, but sometimes associated to the authenticated access to learning platforms. This is justified by a realistic view of education, in the opinion of one interviewee: “I use open databases and electronic resources, I search in online archives and use digital journals…” (…) “the benefits of the opportunity to access to knowledge and cultural heritage are obvious… any kind of restriction to access limits knowledge, but this ideal world does not exist…” “(…) I am absolutely aware of the theme, when I can use material that is completely free and open I am more than happy, but in some cases it is not possible, and I can’t help using material that are actually not freely accessible” (IT06).

Most of interviewees are aware of copyright issues, and the need for protection against a non-correct use of the protected materials by students is one of the reasons they list for making the materials available only upon authentication inside the learning platforms.

Nevertheless, the collected data seem to indicate that teachers do not know specifically and deeply about copyright and open licenses; the lack of knowledge might be the reason for the apparent distrust towards them, together with their lack of experience in making OER available. The analysis highlights in fact diverse doubts and concerns.

MV expressed doubts about the sustainability of open content and about any possible business model to support it, but declared that **acquiring more knowledge about copyright and open license would perhaps allow her to understand such an approach, and it is a condition to get over her present distrust and possibly adopt it**.

FaZ referred to the **challenge**, related to OERs, **of materials being modified and transformed and becoming something completely different**, with a risk of having the author name associated to products that are completely different from the original one and compares such a situation to the one of the "anonymous collective novels". IT05 mentions the **additional huge time** that would be **necessary to check that all the materials that teachers produce/produced might be released with open licences**.

LV, on the other hand, **releases all his materials freely and openly on his web site**, even if he declares "I never cared about license, actually (…) I only put my name and surname (…) so I might be surely interested because it might be a way to frame in a more correct way materials that I put online giving for granted that everyone can use them and do what they want".

OER, OEP and learning enhancement

This section, besides referring to the research question "what does open education mean to educators in terms of enhancing learning?", also specifically refers to the following aim: to establish the role and possibilities of OER (…) in relation to learning enhancement. It also refers to the specific objective being about exploring teacher's perception about the pedagogical implications of OERs.

Some proposals came from data collection, about possible ways to enhance learning by using or reusing OER and adopting OEP. A few of them refer to reported experiences; most of them are about desirable strategies and suggestions for the future. What seems fundamental, in some teachers' opinion, is the need to avoid using open educational resources to only foster self-learning by independent students, as such a practice would not enhance learning. As a matter of fact, IT06 believes that students need persons to confront with, to make the best of their learning, to have a filter for the resources and for the information overload.

OER use to explain abstract and simplify complex concepts

One interviewee pointed out that in case a concept is complex simplifications are sometimes useful to explain it, and using multimedia materials as animations or videos is a way to solve such a problem. Nevertheless, creating those materials might be expensive; using available OERs might enhance learning of those complex concepts without costs. As an example, MCO reports her use of online videos to explain intangible, abstract or evanescent concepts, as the genetic recombination mechanisms.

OER use to make basic content available

FaZ suggests that existing OER might be used or new OER created to supply basic knowledge, the minimum contents that the student has to acquire, the "bone structure" of courses to build upon.

OER use and creation as help for preparing the thesis?

AL stated that usually students individually contact the teachers about the preparation of the thesis; to avoid this, a sort of Digital Library, or KIT of OER about certain aspects and topics, might be useful for them.

OER reuse to enhance active learning by students and foster creativity

MV thinks that OER might foster creative re-use of resources by students: "students could create starting from something you make available as starting point". In her opinion the reuse of OER might allows for students being active rather than passive while learning, and to take part in their learning process. An application of such an approach might be the creation of enriched textbooks and learning materials starting from teachers' slides/materials. As a matter of fact, during the conversation with LV, the question about possible re-uses of OER to create something different, was considered by him as an interesting possible solution that can be applied to meet some of the students' need and it raised a reflection by him. He reported the experience of a student asking him for the possibility to create study materials from notes and slides, so such an approach might be a way of self-creating an "enriched" textbook for students. Releasing the learning materials in an open format may facilitate such an activity.

Indirect Learning enhancement through teachers' self-development by OER

AL relates a possible change in teaching and to possible learning enhancement through teachers' self-development. A teacher can look for good examples and teaching models, and therefore learn online from colleagues (as an alternative to participating in lectures and conferences) and this impacts on learning enhancement by students thanks to an improved preparation of teachers. Moreover, the teacher can confront methods, examples, textbooks.

Digital libraries of OER (and OEP) as "always open rooms" for enrichment beyond the exams and the limitations imposed by curricula

AL proposed a view of OER, as an open box, a toolkit of technology enhanced competences for students to review or go deeper in subject matters beyond the time and the schedule of the exam: it would include seminars and other possibilities that are not possible during the course. Used in such a way, OER might be tools to leave rooms open for students who want to go back to their course and topics and revise them, a way to recover "knowledge" from the past to stay informed and prepared. This is also connected to the idea of OER to solve specific problems and face challenges, as the preparation of students to go on with studies is a problem that AL refers to and that seems quite serious for him.

IT02 referred to the sometimes "dry knowledge you can get from the lectures", seeming to implicitly give a judgement of the curricula and considering them as limited by normative-legal-organizational

aspects, and suggested that OER might be a way to enrich the course by additional material for those who want to go deeper and beyond. This is also a similar approach to the one proposed by IT04, who suggested open textbooks to explore certain aspects and topics more deeply, and looks at OER as complements — rather than substitutes — of what has to be done directly by the teachers. This reconnects to the more general idea of openness as a way to overcome curriculum and schedule limitations.

MOOCs: understanding and meaning

All of the interviewees have heard about **MOOC** in meetings, in newspapers, by colleagues; nevertheless, the contact with MOOCs has been mostly on a superficial level, without going much deep, and none of them ever enrolled in a MOOC (in spite of many of them considering it as potentially interesting for a teacher "to experiment and know before doing it"); most of them do not feel knowledgeable and certain enough to make comments or give judgements.

The **need for a clarification of terms and of the definition** was common to different interviewees and to different terms, and seemed to be strong when talking about openness and MOOCs. GM stated that there is a need for clarification in terms when it is about MOOCs for language learning, because she has noticed that some "call MOOC things that are not MOOCs". However, the meaning of some aspects seems to be common for MOOCs: their being "open to many" (AL), "open to everybody", their being free, their being on a large scale.

IT05 associates the idea of MOOCs with MIT courseware, and claimed it gives the idea of "being open to everybody and making knowledge

openly available". Most of the interviewee agreed on an idea of MOOCs as courses free to attend; some pointed out that if a recognition of attendance or a certification of results is needed, then payment is necessary. Some of them declared this seems to be an interesting aspect to consider in the decision to recognize the participation of students to MOOCs organized by other institutions: certifications might make a difference. There was uncertainty in the respondents about MOOCs being really innovative or rather just an alternative way of putting knowledge at student's disposal; this might be due to their knowledge of the phenomenon depending mainly from the first impressions received by some MOOCs being about slides and audio presentations, and assessment being mainly carried out through quizzes.

Some teachers report having previously **manifested curiosity** in MOOCs — both as users and as potentially organizers of MOOCs. LV reported that his students attended some MOOCs by Stanford University and looked satisfied by them; furthermore, MOOCs were already considered by the Department of Information Engineering at UniPR as possible ways to accept external credits for PhD students; it is reported not be an official decision nor regulation, but it is being discussed.

Knowledge about MOOC technology and platforms

Not much seemed to be known about MOOCs and specific technologies and only a few teachers could mention two specific platforms, Udacity and Coursera; MIT was mentioned by a couple of them.

The absence of data about technological aspects of MOOCs has probably reasons and implications; respondents already mentioned some of them. GM stated that the technological part of it should not be a worry for the teacher if the teacher works in a team with technology experts who can support and give advice. Engineers claimed that technological aspects are probably not an issue when their Department is concerned.

MOOCs: learning enhancers or challenges?

This section, besides referring to the research question "what does open education mean to educators in terms of enhancing learning?", also specifically refers to the following aim: to establish the role and possibilities of (…) the MOOC phenomenon in relation to learning enhancement. It also refers to the specific objective being about exploring teacher's perception about the pedagogical implications of adopting MOOCs in their courses.

The responses revealed diverse aspects to be considered if MOOCs are involved in a perspective of learning enhancement, and challenges and opportunities were identified. Most of the interviewee stressed the importance of MOOCs to be considered as a way to complement and integrate the traditional curriculum, rather than alternatives. "When contents are valuable and were created by really prepared people, then they can be really useful as a tool to complete students' preparation even in traditional courses" (IT04). Nevertheless, there was agreement on the fact that a proper mode should be identified to do it in an effective way. Integrating MOOCs in the traditional learning, even if as complements is something to be planned correctly,

and should not “represent a brick over the others” (…) but rather something that “widens the range of possibilities” (LV)

The reason for integration being the only sensible use of MOOCs to enhance learning was expressed by one interviewee because of a perceived need by students to participate in face-to-face activities and personally attend courses.

MOOCs as learning enhancers

If MOOCs have to be a pedagogical opportunity, in the opinion of GM, it is necessary to adopt the right strategies to get the best out of them, and involving students is necessary. IT02 thinks that the possibility to decide the teachers from whom they want to learn and change the teacher and course in case the student is not satisfied is an opportunity for students, together with the possibility to look at diverse ways of teaching subject matters and facing topics in a different way.

In spite of teachers mostly not being aware of the possibility of peer assessment in MOOCs, and this possibility being introduced by the interviewer during the conversation, such an approach was considered interesting; for the academic environment it would introduce a “complete change in perspectives” (MCO).

Interaction and participation as learning enhancing strategies in MOOCs

The data reveal that MOOCs are sometimes envisaged a solution to go towards a more interactive and participative learning model, and therefore a way to enhance learning by interaction and participation.

Whilst reporting previous experiences with e-learning that were not completely satisfactory, FaZ associates MOOCs to more participatory approaches to e-learning and believes that the interaction opportunities and the possibility to create communities in this case would make a difference in learning: "(…)… participatory, not passive as the e-learning I know… this can in fact change things".

The answers revealed that not every teacher, after all, has a view of MOOCs as being necessarily interactive and participatory. IT07, for example, imagines them as lectures or recorded lectures and asks whether interaction has to be foreseen.

GM, who adopts a collaborative approach in her courses, asks herself if "participation" is "possible on a large scale". Participation is for her a synonym for collaborative learning and she calls for the necessity – in order to talk about learning enhancement - to distinguish between participation or access to many people. Teachers who feel no need for collaborative learning and do not foster it in their courses seem not to see any gleam nor need for collaboration in open approaches, either. This might be sometimes related to there considering students as not particularly active nor interactive even in face-to-face experiences (IT04).

It might be the case here – as it seems to emerge from the collected data - that when participation and interaction are considered at the same time strategic thus challenging, the idea of having a new model to test, looks as a possible solution. In spite of perceiving the difficulty in standard models to involve students, IT06 would be eager to adopt collaborative approaches and seems to look at MOOCs at a

possible way to do it. MOOCs might also be starting points for the creation of communities and groups around specific interests, as proposed by IT02.

Statistics to enhance learning?

Some teachers consider the possibility of tracing the learning process and monitoring students' behaviours as a way to know students and their behaviour and consequently enhance learning.

One interviewee thinks that MOOC might probably give the opportunity to do it in a deeper way and associates this opportunity to features made available inside MOOC's technological platforms (IT04).

One of the teachers reported of efforts with the learning platform as being mainly addressed to trace, check and measure the learner's access and use of materials. One of the investigated aspects was the span in time that passed between materials being made available and their consultation by students; tracing the time and day when certain actions were carried out was considered useful. AL considers such an approach as useful and he explains that he used such an investigation as a support for the evaluation of students; moreover, it allowed for discovering that obtaining participation and participation by students is challenging in spite of directions and stimuli.

A statistic-based approach is also suggested by MCO when she suggests the use of a tool in the classroom that allows to have an immediate feedback about the understanding of concepts by participants. In that case, though, statistics seem to be standing beside other information and might be a support for understanding the retention and attention rate by students.

MOOC to satisfy specific students' learning needs: PhD Students

LV reported his students looking satisfied after participating in Stanford University MOOCs and explained that MOOCs are considered as an opportunity for PhD students at the Department of Information Engineering to learn topics that are interesting for them but that are not taught in the PhD delivering institution, and to gain learning credits for their PhD. Having the opportunity to choose courses that are relevant to the PhD would be a good opportunity, because the student can "learn according to his specific topic of interest and choose the best available learning solutions worldwide" (LV). In spite of being interesting, he declared that such an opportunity is to be considered together with possible limitations existing to rule such a practice and handle certifications.

MOOCs as a way to "learn from the best teachers in the world"

LV thinks that MOOC may be great opportunities for students to have subject matters explained by gurus. This is not meant as a way for the teacher to give up his work, but rather to get the most added value and optimize resources. "If the relativity law were explained by Einstein rather by another professor, than probably the student would be more interested and the explanation could be better…" "there are professors who discovered something and are great researchers but are not able to explain it…". "There might be added value" both "under the psychological" and the educational "point of view".

Challenges and worries about learning in MOOCs

Some worries and opinions were expressed about pedagogy and learning enhancement in MOOCs. IT05 considers a MOOC as potentially not working if it is reduced to individual learning (self-learning), while only the empowerment of learning by collaboration and task based learning might be an enhancement; this reconnects to what had been declared concerning OER. IT04 declared that study and research on MOOCs would be necessary to better know them, because not only the presentation but also the teaching approach might need to be changed. He seemed to have some doubts, though, as he remembered having noticed that the presentation was more or less the same in some MOOCs as in traditional online courses. There are also teachers, as IT07, who are not worried at all about pedagogy in MOOCs, but they declare that this depends on their "imagining MOOCs as lectures" and for this reason, "if organizing a MOOC means recording a course and make it available freely or by a specific schedule (…) then the number of students is not an important aspect to be considered". On the other hand, "If interaction has to be present, then the number of students becomes important" for discussion boards' activities, to search information, for the quality of answers (to students).

Background, language, knowledge level heterogeneity

Some concerns are expressed about openness meaning heterogeneity in the background, language and knowledge level. MV thinks that one of the main conditions for teaching effectiveness is knowing the students you have in front if you, before designing learning activities; moreover she believes it is difficult to obtain positive results when

such an heterogeneity is present, as the one that seems implicit in the MOOC model, because it may result in learning differences and difficulties by students. A possible solution proposed by MV is dividing students in groups, to foster homogeneity.

Similarly, one of the worrying aspects seems to be about prerequisites (IT04): even when they are not formal, there are paths a students should follow to learn better and some topics are basics to others. IT07 argues that some specific topics might be suitable to be learnt in a MOOC, as there are competences that can be acquired completely inside a single course (e.g. specific programming competences), even if, without any doubts, in some cases a sort of sequence is useful to maximize the learning experience. In IT07's opinion a single course might be suitable to be approached in a MOOC, while there would be more difficulties if a complete Degree course were considered for such an option.

Another concern is about the language used for learning in MOOCs (MV), as the decision about the language for teaching / learning impacts on the results and on learning effectiveness. Moreover, having a background is also connected to the specific sectorial language that is sometimes used inside the course, which might depend on the specific topic. Delivering a course might be different if addresses are engineering, law or architecture students but a generic course might be designed in a way to be understood by all of them, if necessary (IT07). What seems important is the need, even in MOOCs, to try and address different learning styles and multiple intelligences (GM).

Broad ideas of openness

As regards possible dimensions for openness (as they are mentioned in the literature review, page 73), it seems that – when talking about open content - the interviewees do not distinguish between different dimensions, if not specifically asked, and that they mainly perceive the open access dimension. Nevertheless, the interviewees express concepts that seem to convey a broader idea of openness than mere access and therefore seem to go towards an "open approach" rather than to "open content". They do this by directly talking about openness, or indirectly when they referred to openness in the OER and MOOC context.

Openness as a philosophical concept of learning as seamless learning, opportunity for everybody to learn freely

GM refers to open university, for example, to an idea of education "where barriers and boundaries have been destroyed", where there are no more "tight rooms", and refers to an idea of "seamless learning". Open education in her understanding means "giving the opportunity to everybody to learn". Nevertheless "open education is wonderful but only useful if the strategies are also given to make the best of it". She therefore underlines a need not only for resources and tools but also for strategies. Moreover, she stresses that it is necessary "to learn how to learn and to learn how to use resources and tools to learn". Mention to a need for making learning materials open to those who do not have the money to learn was made once, by one teacher (IT04), with reference to free textbooks for students, but seems not to be a major aspect in general. Nevertheless, the focus of the interviews was

on learning enhancement, so this might be the reason why philosophical aspects

Open as freedom to choose what to learn and whom to learn from

This idea of a possibility to choose the content that you want to learn — allowed by diversity and availability of a great range of opportunities — may also be connected to a perceived rigidity in course curricula and schedules, with openness implying being allowed to choose what you want to learn. Two teachers (IT02, IT03) claimed the importance of freedom to choose the teacher who can teach you something (and the possibility to change, in case you are not satisfied).

Openness towards the external world to create realistic learning situations?

MCO seems to associate openness to the idea **of getting closer to the real world**, to give the opportunity to students to simulate the mechanisms they will meet in the real world, to simulate environments and create realistic situations. She would like to be able to create different environments that are connected to each other in a systematic view, and to consider openness also in terms of opening courses to other teachers and experts, too.

In MCO's opinion this kind of openness would also imply a different approach by the student, a cross rather than horizontal approach, that would contribute to creating a flexible professional who could enter the working world in a better way.

MOOCs, in particular, are envisaged by MCO as possible windows on the real (working) world, a way of simulating real situations. “The present process of following a lecture implies (for the student the need for) establishing a relationship with the teacher, Here there is a further step, you relate to the topic, to the teacher but also to a lot of other students (…); it therefore becomes a more qualifying approach that also goes towards a view of placement (…) because in the real work one has to establish relationships…” with other professionals.

Open Education to add opportunities, face problems and challenges

Joint- cross-university degree courses

Organising Joint- cross-university degree courses, as MOOCs, might be a good perspective, even for international courses, as it would allow for sharing experiences and living this experience to many people. “It would be a tool to go over geographical and management limitations.” (MCO), which also include logistics, as finding physical spaces and classrooms are sometimes challenging aspects when organizing a course.

Openness to overcome curriculum/syllabus/schedule limitations

The idea of openness is expressed as possible flexibility in terms of curriculum and schedule. As a matter of fact, IT02 and IT03 refer to openness as a way overcome the limitation of the schedule as it is now besides adding appendixes to the standard curriculum, and IT02 is already using the learning platform and technology, in a sense, to make available a path that can be followed apart from the standard course period and schedule. Furthermore, there is a need for AL to

avoid any institutional “cages” and allow for sharing reflections, discussions and spaces about topics that are neither necessarily institutional nor curricular ones (IT02). AL suggests that there are some specific interests and topics that cannot find any room in curricula and might be explored by creating groups of interest and communities around them. Communities might be created around sets of OER, inside or starting from MOOCs. This second aspect is rather an expressed need/desire than a current situation.

Openness to Students who do not participate to face-to-face activities

MOOCs might be useful for those students, who do not regularly attend courses’ face-to-face activities, to overcome specific challenges and to review or go deeper into a topic that is not clear, by accessing to online materials.

Working students and lifelong learning

Having the opportunity for learning to be supported and enhanced by technologies might be a way to overcome students’ problems related to the time available for learning and to mobility.

This allows, in GM opinion, to activate the mechanism of lifelong learning, the opportunity to learn along the whole life so MOOCs might be considered in a “lifelong learning” perspective (IT04). MCO looks at MOOCs as possible tools to “cure” and find solutions for some challenges, e.g. working students who were in her opinion really “penalized” rather than helped and encouraged “during the previous years”.

Non-residential students

Students who do not come from Parma are a category of students with specific needs, and the efficiency of the networking and organization infrastructure is sometimes more relevant to them. Giving them the opportunity to partly study online through technologies might be a way to satisfy some of their needs.

A-C2 Readiness gap to open up education in a pedagogical and technological perspective.

This category refers in particular to the research questions "are educators ready and willing to open up education in a pedagogical and technological perspective? Do they have the necessary competences?" Moreover, It specifically refers to the objectives regarding the exploration of teachers' perception in relation to both the pedagogical and technological implications and the competence and support needed for adopting OER and OEP and MOOCs in their courses.

As it is explained in the methodology chapter (page 35), the drafted theoretical framework was used as a initial guide.

Learners Human resources	Bloom		
	COGNITIVE	**AFFECTIVE**	**PSYCHOMOTRIC**
	Knowledge	**Feeling**	**Competences (skills) and tools**
TECHNOLOGY Considered as technological attitude and skills	Content readiness (technological and pedagogical level)	Attitude towards technology Attitude towards innovation	Technological skills
PEDAGOGY		Attitude towards self-development Sociological aspect (collaboration)	

Fig. 8 Initial framework for teachers' readiness to guide data collection[19]

[19] The framework is also enclosed in the Appendices section (Appendix no. 13) , in order to be more readable than it is in. Fig. 8 on page 161.

Some of the generally reported knowledge or competence gaps that affect readiness for open education were in many cases inferred by conversations being about technology-enhanced learning. This was necessary, considering that no specific experiences where reported neither about OER and OEP nor about MOOCs. When the interviewees made specific reference to OER and MOOCs, then it is also highlighted in the analysis.

Pedagogical knowledge, competences, skills

The idea conveyed by interviewees is that during their teaching experiences, both in Parma and in other Italian contexts, there has never been any specific focus by the institution on their pedagogical preparation, and that the result is a lack of it. Such an opinion seems quite a shared one. As stated by IT02, it seems to him that nothing in the academic environment he experienced was built on a need by teachers to know how to face the pedagogical aspect. IT02 declares that a teacher is literally “catapulted into the classroom” after and “because of passing the discipline exams at a superior level”; when you have to teach no technique is taught to teachers” so that they know “how to explain their discipline”. IT02 perceives a need for going a bit further in playing the teacher’s role by facing the pedagogical aspect in a more serious way. Furthermore, IT06 argues that if no real pedagogical changes were carried out in spite of information and communication technologies being available, it was also because of this unpreparedness under the pedagogical point of view. In spite of feeling to be among technologically competent and informed people, IT06 perceives the gap in knowledge about

pedagogical aspects. IT06 stated in fact: “to use technology to enhance learning, the application of suitable methodologies would be necessary”. IT03 added to this by stating a need for an educational path, for training about pedagogy to be made available for teachers. In the opinion of some respondents (e.g. IT02 and IT03), some internal resources might be employed to offer pedagogical competences to teachers. IT03 declared that facing the problem and solving it might allow teachers “to take the right back to feel teachers under all aspects” (“*a tuttotondo*”), rather than only feeling as “carriers for scientific information”.

Are specific pedagogical competences necessary for MOOCs?

Some of the teachers stated a need for revisiting the approach to teaching (IT03) but seemed not perceive any specific additional pedagogical knowledge and competences as needed to organize and tech in MOOCs if compared to technology enhanced learning.

IT04, in particular, referred to MOOC as not being always pedagogically innovative because of their being about presentations and quizzes.

Attitude towards technology

Only referring to what teachers’ think and believe about their competences and skills risked not to give an in-depth description of the situation. For this reason, the attitude towards technology was explored and analysed. There seems to be in general quite a positive attitude towards technology in terms of curiosity for ways to enhance learning. Nevertheless, it is to notice that even among engineers,

neither “technocrats” nor “technology-scared” teachers seem to have been interviewed. Not technology just for technology’s sake, then, but attention to learning quality and effectiveness.

In particular, the main aspects, which emerged, are described in the following sections.

Critical approach to technology

The interviewees seem to have in common a critical approach to technology, meaning by this that their approach is not naïve, and they critically consider both positive aspects and potentialities without forgetting challenges; moreover, they tend to relate the use of technology to real learning needs (see below Focus on usage rather than on specific tools). “The risk in using technology, tools without knowing them properly is that they become destructive in terms of excess; technology should not make us lose the core of things, technology is there to simplify, to better approach knowledge, but should not take the place of the context” (IT03).

GM reminded that the discussion about relationship between technologies and education is not new, as each era has been characterized by different technologies; she refers to her article “BALL, PALL, LALL OR CALL? OR WHICH TECHNOLOGY FOR WHICH PEDAGOGY … AND FOR WHICH PURPOSE?” (Mansfield, 2000) and recalled the example of the first language learning labs, which were created basing on Skinner’s behaviourism: they were mechanical drills, based upon a response to be given to a stimulus, there was a hint and the student had to put the correct sentence or reverse it or repeat it. The utility of different approach and technologies is not

implicit in them, but depends on the students' attitudes and learning styles.

Being it about a constant change in the availability of technologies was confirmed by FaZ, when she stated that until some years ago, when the first photographic libraries started to be created, having a photographic collection available was considered stratospheric and synonym of great power. Now each teacher having a computer (even more if connected to the internet) switches the computer on and searches the image in a minute.

This considered, some teachers, in spite of recognizing that students live at present in a world where technology is everywhere, suggested a need for teachers to help students use the right technology for the specific purpose and to do it in the right way, and in particular:

- to show to students "how they can take advantage of the use of technological tools" (MV) and "how to use technologies in the correct way" (GM) in an educational context, to learn, "to give them the right strategies" (GM);
- to make students understand whether they are really aware of the possibilities they are given by technology (MV);
- to suggest an educational use of those devices that they use daily for other reasons (e.g. smartphones and the opportunity to download dictionaries on them) (GM);
- to suggest interesting resources for learning.

Focus on usage rather than on specific tools

Teachers only named some specific tools; sometimes, when mentioning tools, they recalled the category of tool or the functionalities and

scope, e.g. wikis, but not always the name. An example of such an approach is in MCO mentioning a tool she would like to adopt.

She concentrated on the purposes that such a tool would help attain in a perspective of learning enhancement, and described them in a detailed way, without even mentioning the tool's name. What seemed important to her was what the tool might do, the use and the functionality, the questions that tools might give an answer to.

In spite of reporting their usage for collaborative learning, and describing the situations, IT01 did not mention any specific tools while mostly mentioned categories of tools. There were some occasional exceptions, which in general seemed not to change the interpretation of the focus by teachers being on usage rather on specific tools.

Previous experiences with technology enhanced learning and open education

Data analysis reveals that some or their previous experiences with technology-enhanced learning (or open learning) might influence the perception of interviewees towards future opportunities.

The results indicate that completely distance learning experience were for most of them not satisfactory.

IT07 reported an experience of e-learning organized by an "online university" as being mainly about preparing content to be uploaded on an online platform without having any interaction with students. Even if interactions with students and teachers should be put in place by tutors, this did not happen and the only interaction with students was

during a Questions and Answers and Exercise session the day before the evaluation.

MV is the only one to report a positive experience, i.e. a completely online Master's degree, offered by the University of Parma, where different kinds of methods and resources were offered inside the platform. Not so positive looks the example by the University of Parma of an e-learning course organized for the personnel to be trained on safety and security matters is depicted as "a good example of what should not be done in order not to make people bored by e-learning" and underlines that "e-learning is not watching people who are reading the text on slides" (IT04).

IT06's first experience of a different methodology from the one she is used to and of e-learning is about delivering a Master in collaboration with another organization, in which IT06 was involved in creating contents. IT06 reported a non-satisfactory management of the experience, and the approach to the creation of content for online learning seems to be superficial. Tutors supported the course, but — as in the case of IT07 — the management of the communication between them was not carried out satisfactorily. Other teachers had experience with managing their courses by Moodle platforms at the University of Parma with different levels of satisfaction, as it is reported in other sections.

As regards OER and relevant practices, as above stated, only a few teachers reported significant experiences, which were generally positive. IT04 explained having experience in using an open and free textbook released with Creative Commons licence and declared open

textbooks are good solutions when there are not so many alternatives available, to give students the opportunity to go deeper into certain topics without having to spend money on books. Even if he did not mention OER and declares not care about licences, LV actually releases his learning materials in an open way, by making them freely accessible.

When asked to report about any known experience by others at the University about TEL, OER, OEP and MOOCs the impression was that engineers and language teachers were the most informed about experiences being available around them, e.g. about testing learning tools that might be used to enhance learning and make some examples, as Nettuno Project, OpenEya lecture recording system.

A reason for this might be the sharing and confronting approach teachers seem to have in the Eng. Department, or it might also depend — for some of them—on their direct involvement with UniPR Co-lab. A couple of teachers stated that in their opinion some of the positive experiences are not known because there is a great deal of subjectivity and individuality and a lack of communication. IT04 called for projects to test learning innovative projects, as it was in the past with some projects that were given up.

Attitude towards tradition

The attitude towards technology in the educational field seems to be also connected to the attitude towards tradition. One of the aspects that were underlined by the teachers was the huge access allowed to digital objects that is made possible by technology and by the

Internet: “students needed to go to the library to look for tools as corpora, before, now they go online” (MV).

Nevertheless, some traditional tools and devices are there, that are useful to use even if technology is available. An example is the black- or whiteboard, that allows for explaining concepts in a dynamic and flexible way, depending on the academic subject that is taught. Some teachers still need a paper support to work on and they think their students still do, at the same time. And, most of all, the majority of teachers still believe in the importance of the direct and personal relationship, and in the impossibility for technology to replace other forms of learning and teaching, and this seems one of the reasons why they always mention technology enhanced learning in terms of a blended solution, a complement to face-to-face learning.

On the other hand, some teachers believe that some colleagues and some domains are too much bound to the past and to the tradition, to a knowledge transmission model that is not enhancing student learning, with many of them culturally refusing the use of technology for learning.

Gap in technological competences and skills

Data analysis showed some gaps to be bridged concerning technological competences and skills, even if the responses revealed differentiated aspects and it was not possible to identify a shared understanding.

The technological gap was in turn depicted

- as a need to understand possible application of tools to enhance learning;

- as a need for support during “the first steps” to solve the initial doubts and difficulties (IT01);
- as a need to further improve and develop their use of technologies to obtain better results;
- as a need to adapt and rearrange their attitude towards technology (IT03).

The interviewees generally agreed on the difficulty to judge whether a technological tool might be useful or not without understanding its possible application to learning and the available opportunities. IT06 added that some tools are only used occasionally as a “support” and perhaps they are not completely understood by teachers for what their possibilities are. GM described how she bridges the gap by explaining that **when she** wants to face technology enhanced learning under the pedagogical aspect, and realises that she lacks the technological know-how, she contacts the technician “to see if it is possible… or may be the technician tells me that it is possible to do certain thing (…)… This conversational method allows her in the end to “gain new skills by using technologies”.

Not all the teachers shared the same perceptions about a technological gap. Engineers, for example, are aware that, given their specific domain, they have a completely different approach and preparation about technologies, they are quite self-efficient and in case they face any needs for technology to be used they can find an easy way to do or learn to do it. Nevertheless, they are aware that not all domains have the same characteristics as theirs, and that a need to support teachers may exist, for those whose domain is not connected to technology.

Data also reveal a gap between a personal use of technology and a use for educational purposes. "Average teachers have difficulties to use technology for teaching because they feel inadequate (…) Nevertheless, the first thing they do when they arrive at the University is turning their computer on…" (IT03)

Most of the interviewees feel and look quite well acquainted with technology on a personal level, but some declared they would like to better apply technology for educational purposes and in some cases the practices they described confirmed such a need.

Are specific technological competences necessary for MOOCs?

Most of the teachers seem in general to believe that MOOCs might need further technological competences to be added to those that are necessary for TEL and OER but show and declare they have not enough knowledge of MOOCs to give a comment about this.

Looking up at the answers, teachers recognize that most of MOOCs include videos together with written digital contents. It is perhaps for this reason that IT04 thinks that communication and interaction have to be considered at a higher level, if compared to the one that is necessary to teach in the classroom. IT04 declares that further technological skills are necessary, and that a simple transfer of contents and of lecture recordings would not be sufficient.

Pedagogy and technology go together.

GM specifically states that **"pedagogy and technology must go on together"** and that technology has to be motivated and it makes sense to adopt it if it can be seen as an **empowerment**. It is necessary to

think about "**which technology" is suitable "for which pedagogy"** (Mansfield, 2000) and if a certain pedagogical strategy can be improved by using certain technologies or not. IT05 focuses on students, and sees technology as possibly influencing the way students learning in a positive way if students are made do know how to use technology effectively to that aim. GM strikes the fact that technologies being available is not something new, and that the point is finding the right technology to use for the type of pedagogy that is better to learn a specific topic.

There must be also a balance, in IO5's opinion, in the support that is given: support is needed on both technology and pedagogy, to effectively use technology with the purpose of enhancing learning.

The necessity for pedagogy not to be considered in a dichotomy with technology was a cross topic in data collection, as this opinion was also shared by IT01 and IT03.

A-C3 Teacher's strategy and perceived role in relation to learning enhancement

This category refers in particular to the research questions "are educators ready and willing to open up education in a pedagogical and technological perspective? Do they have the necessary competences?"

Perceived teacher's role

The teacher's role perceived by the interviewees emerged both from the teaching strategies and methods they **described** and from specific feelings they **externalized** with some **feeling of uncertainty**

sometimes arising, that seems due – as per their own statements **- to the changes introduced by many factors: not only technology, but also organization-related aspects.**

Teacher's role: motivator and facilitator, fostering creativity

Some of the interviewees feel their teacher's role is **being a motivator a facilitator and creativity fosterer**, and such aspects were underlined by teachers who seem to prefer a learner-centred approach to learning. Both IT01 and IT05 stated that it is important to **build on student's prior knowledge**, together with inspiring awareness in students about what they already know, which can be also done by using technological tools as e-portfolios. MV described a role of the teacher as "interface" and mediation" between students and technology for better learning: the teacher has "to show to students how they can take advantage of the use of these tools", "to foster activities where they put things in practice". Those teachers who have such an approach seem not to believe in teaching as a mere transmission of knowledge and believe in strategies that can support the role they play. Some strategies and approaches were described by them and are further analysed.

Personalization

Personalization seems to be at the core of a student-centred approach; MV stated that in order to "facilitate their learning" she needs to know her students and in fact one of the main worries she mentions for an approach through MOOC models is about huge numbers of students not allowing to know students. GM mentioned the necessity to personalise

experiences for students. Personalization might also include an aspect that has been covered and mentioned by most of the teachers, that is to say the adoption of different teaching approaches in similar courses that are offered at different Degree courses' levels.

A different approach to first- and second-level Degree courses

Teachers mentioned a difference in their approach to First level degree courses and to Second Level ones, which seems not to be related to specific domains or subjects but a generalized approach. Teacher mentioned among reasons for their different approach:

- the different number of students (smaller number) enrolled in advanced courses (IT06, IT04, IT07);
- the different approach by students, being more selected, passionate, interested and eager to go deeper into matters in Second Level degree courses (Laurea magistrale) (IT04, IT07).

Affective learning

Motivating students includes making it possible for students "to have fun while learning" (MV), "to make the most of their work by the teachers and by their peers" (MV) as it happens when collaboration is fostered among students and when what students have done is visible, shared in the classroom (GM) and is considered and appreciated. It includes "fostering curiosity" (GM) while learning by relating learning to the student's context. She does it by referring to the codes and languages that are present in the real world, and to the use of real media resources, as recorded songs and multimedia. GM talks about such an approach – when it is enhanced by technology - in terms of empowerment (for both students and teachers), and mentions

"affective language learning". The results of such an approach, in spite of not being measurable, are made explicit by teachers enriching the course by their proposals and resources, that may be used in the following courses and constitute a set of resources. GM thinks that the use of technology makes it easier to have a learner centred learning approach, rather than a teacher centred learning one, but is convinced that if the teacher plays the facilitator and motivator role, there is no risk for the teacher to be useless when technology is used

Authenticity of tools and context for learning

The perception of the role of teachers as a facilitator and guide seems to imply an attention to the **authenticity** of tools for learning and to the **context** to learning and therefore to the situations, in a serendipitous process. This includes considering learning as a way to find solutions to real problems and looking for **ideas from the real world** and **hints by students** to enhance learning.

Traditional lecturer role

Some other teachers seem more related to a traditional trasmissive role of the teachers, as a **lecturer**, but this is mostly the case when the theoretical part is concerned.

IT07 reflects that this is what less experienced students (in first level degree courses) seem to expect. Nevertheless, in spite of describing a lecturing approach with first level degree students, IT07 reflects on possible more effective strategies than lecturing "to use teaching time in a more efficient way". Even when the main role perceived is the lecturer and "knowledge imparting" one (Laurillard, 2012a, p. 11),

though, there are differences in the approach by teachers being more directive or receptive.

Mixed teaching approach/strategy

There seem to be sometimes ambiguous signals with teachers showing directive approaches and looking not so flexible, and on the other hand a need to understand students and to be a guide for them, to be able to foster participation and active approaches. Tension seems conveyed by some declarations, between a rigid and directive way of interpreting the teacher's role (including directions, orders and control) and a need for involving students. More often a sort of **"mixed approach/strategy"** is depicted, with teachers adopting different strategies depending on how they interpret the students' approach or needs, or in case of organizational challenges that limit them (infrastructure, time issues, schedule and organization of courses).

Activities to enhance learning

Those teachers who depict themselves as motivators and facilitators stress students' **activities** more than teachers' lectures (even if they organize preparatory theoretical sessions). Nevertheless, as above mentioned, it is true for all the interviewed teachers that, in addition to giving traditional lectures, they try and stimulate students by other types of activities on certain occasions that go beyond "face to face passive lectures" (IT06); this implies an attention to the authenticity of the learning context, as above described. Organizing activities in not always easy as it is time demanding: "it is difficult to put together

in the available time both the concepts that are to be covered and the practical sessions" (IT07) and activities, e.g. projects, seem not suitable for the attitude and learning style of all students (IT07).

Moreover, it seems that the present course organization and schedule make it more difficult to have an activity driven approach to teaching.

In the majority of cases, teachers seem to be convinced that students' approach to learning is quite passive and that involving students is quite challenging (IT02). This is in their opinion a cultural issue, not depending on students being prepared or not (IT02), on their attitude towards any additional activities that go beyond the classroom, e.g. researches or seminars by experts (IT02, IT06), and on students looking sometimes to be just interested in an exam-oriented preparation.

An example of activities that are organized by teachers are project-work approaches, seminars with external experts, practical laboratories, individual research approaches.

Fostering critical thinking and adopting a problem solving approach seems important to some of the teachers, to make it possible for students "restructure what they learnt and be able to face the real world" (MCO). Such an approach enables them, once they are in the real world " to use each and every single fragment of their learning process to get to an answer" (MCO). This implies a view of learning that, apart from an evaluation of the knowledge and practical skills, involves an evaluation of the cultural and logical approach adopted by students. MCO believes that technology might help enhance such an

approach by enabling for simulations and role plays, even in absence of a real situation due to organizational and financial problems.

Project-works go into the direction of problem solving approaches to learning, are usually practical and are common when engineers are involved; students have to develop something or carry out a practical activity and sometimes to report and present about their projects to their peers. There seem not to be specific preferences for group projects, and students can decide according to their needs and attitudes (receptive approach). Projects are used when the number of students is not too big to be too demanding for the teacher to follow and give feedback on all the projects (LV), with a number of 80-100 enrolled students as a limit for allowing projects to be an applicable method, and a number of 35 students being optimal to apply it.

In practical laboratories students have the opportunity to deal with specific technological tools; computers are available for students to carry out laboratories. The activities are carried out individually, in pairs or in groups, and the choice is left to students.

MV and GM organize online laboratories for some of their language learning activities and give the opportunity to students to test specific technological tools for learning, that they will probably have to use for working and practice what they are learning by also sharing with their peers.

Uncertainty introduced by organization-related aspects that impact on learning/teaching

Time imposed by curricula and schedules may be limiting, when the teacher has to decide whether to introduce projects, laboratories and

other activities in his course (IT07), and this is made worse when students are involved, who live or come from outside Parma. In MCO's field, on the other hand, national regulations introduced the possibility to dedicate more time to practical activities, which allows to have authentic approaches to learning by practice and is a way to bypass learning technologies and carry out practical activities in specific locations. Nevertheless, the national regulations about curricula and local ones about schedules make it difficult to organize the course at its best, and in this case simulations allowed by technologies might replace some paths and experiences. IT06 complains about course calendars being too concentrated and compact so that a course has to be carried out in a period of 45 days, during which the students have many other courses to attend. This makes it difficult to get to know students, and to have an impact on their learning, even when applying a method, and even more difficult to have an impact on less receptive and capable students. It seems to IT06 that sometimes the objective is more about gaining credits than learning.

Teaching strategy and approaches to technology enhanced learning

Blended learning, blended e-learning, blended TEL

A common understanding seems to be that technology enhanced learning (and e-learning) are not synonyms for distance learning or for completely online learning. Opinions were different about e-learning being or not about a repository of learning materials. MV thinks that "It is not enough to put there a platform available for

teachers to upload documents", even if in some structures the repository was considered as the first necessary step.

Only GM explicitly mentioned "blended learning", still most of them consider technology and online learning as being a complement to enhance learning. This might also be connected with the experiences they had with completely online learning; as a matter of fact, as it has been mentioned in the analysis when dealing with the attitude towards technology (see on page 164), except for one case of a positive experience, the others mention negative or not so satisfactory nor totally convincing experiences with completely online learning.

IT04 mentioned the number of students as an aspect to be considered for a decision for completely online solutions, stating "e-learning might be really useful when the number of students is such that the direct relationship with students in the classroom is missing". In spite of sounding not completely coherent to the opinion of students being not interactive in face-to-face sessions, his statement is to be probably carefully considered when dealing with "massive online courses".

Approach to digital learning materials

There are different approaches to the preparation of digital learning materials: as guidelines "and not as summary of the textbook" (IT02), as outlines for studying (IT05, IT07), as video pills that record the dynamicity of a process, to stimulate the possibility of reproduction of the process by students (IT02). One interviewee envisioned the possibility to use audio recordings of his lectures or even videos. IT06 reported about "allergy" towards slides, and willingness to abandon a

mere sequentially approach, even if there are doubts about students reaction to such an approach; it would make a difference in the structure of the material they use for learning and it would be interesting to research whether there is a difference in learning effectiveness in case less sequential and linear approaches are abandoned in favour of more interpretive ones. The data analysis suggests attention to be given to innovation in pedagogy and research about learning technologies.

Approach to the use of the digital / online learning platform

There seem to be also different approaches to the use of the learning management platform, when it is used, and the functionalities that are made available inside it. The platform that is used by most of them is a Moodle based one, even if

- the technicalities seem not important to them
- not all of them specifically mention the kind of technical platform.
- not all of them use the same platform that is made institutionally available.

Different approaches, directive Vs receptive, apply also in this practice and interviewees report diverse uses of the platform:

- as a point of reference for the information and material to be delivered to students (IT04), and a guide to give students a path and directions for studying (IT02)
- as a unidirectional communication tool (IT04, IT02) to collect students' assignments (IT04, IT02). The use of quizzes for the evaluation seems to be perceived as a debated issue by

interviewees, as they are sometimes looked at suspiciously as superficial and limitative approaches to assess learning by interviewees and their colleagues (IT04). It seems to be more appreciated the use of the assignment tool for student's self assessment, which is sometimes used to give the students the opportunity for an alternative way of pre-evaluating their performance, with online assignments being evaluated as part of the exam (IT02).

- to make students interact about topics and contents before and after face-to-face lectures (IT05)

IT06 reports using the platform in a limited way, while an evolution in the usage would desirable both by taking advantage of any functionality that might be useful, but also by involving students. As a matter of fact IT06 reports having not managed to trigger any relationship with students on the platform, whilst noticing that students seemed to prefer other forms of communication, as social networks, e.g. Facebook. Only one teacher does not use any available platforms, and makes learning materials available through the web page.

Approach to the use of technology in the classroom

One interviewee introduced the distinction among different levels of digital literacy made by (Dudeney, Hockly, & Pegrum, 2013) in relation to the approach to technology during classroom activities; in such a view, data seem to show both situations of "low tech" approach, which is about "a classroom where the teacher has an internet-enabled computer connected to a data projector, while students do not have

access to internet-enabled computers or mobile devices" and "high-tech" approach, involving a classroom where the teacher has an internet-enabled computer connected to a projector, and students have access to enough internet-enabled computers or mobile devices to allow them to work in small groups, pairs or (…) individually" (Dudeney, Hockly, & Pegrum, 2013, pp. 48-49).

All the teachers reported their using of slides and projector in the classroom, sometimes together with further supports, depending on their availability in the classroom and to their usefulness: tablet input devices, blackboard, students' smartphones. Some of them admitted they sometimes have to adapt to the technological infrastructure that is available in the classroom. The data seem not to reveal a great differences in the general approach to teaching when technology is part of the subject, if we consider the lecturing approach, more advanced approaches are described for Second level courses, where specific practical sessions are dedicated to innovative technologies and sometimes a richer set of technological tools is employed.

OER, MOOC as learning enhancers: a shift in teachers' role by flipping the classroom?

As it was stated by many teachers, and already mentioned, there are many challenges and limitation to the possibility of organizing activities beyond the classroom time. Nevertheless, GM cites the "flipped classroom model", explaining her practical interpretation of such a model in a personalized way, that is her approach to discuss with the students in the classroom the activities that they have previously carried out online.

Also LV, even without specifically mentioning the model, describes an approach he witnessed already in 1997 as a Student at Stanford University, during his PhD experience: there wasn't any textbook but only a collection of scientific articles that students had to read on their own, as per the teacher's instructions. Once in classroom the teacher clarified some aspects, answered to questions, and in some days he carried out tests. He did not explain the same concepts that were contained in the written material. Students had to study before, the activity by students preceded the face-to-face session, and in the face-to-face situation the topic was completed and studied in depth. The described approach was in his opinion a way to maximize the usefulness of having an expert available, that can add value if compared to what can be read in a book or article. He therefore described a way to "maximize the educational impact of contact time" (Butcher, 2001, p. 29) with the teacher, that in a sense corresponds to the flipped classroom model, that he was sometimes tempted to adopt for teaching, e.g. using articles or recorded lectures, even he didn't do in the practice. Such an approach would be coherent with what stated by (Butcher, 2001) about a need to foster meaningful engagement between educators and students. In such a situation the teacher's time may be therefore exploited in another way; LV stressed that it would not be a way for the teacher to spare time and for his activity to be lighter, but rather to allow students to have the best possible value from the teacher. The risk he verified was for those students who did not read/study before the meeting not to take the due advantage of the face-to-face session with the teacher.

He mentions a need for students to be at an advanced level in order for such an approach to be effective: “you can do like that when you are going into specific details in a subject, not when you introduce it” and the possibility to therefore adopt it for second level degree courses. In such cases “the time of the teacher might be employed in a more effective way” than “repeating concepts that students might already know and in part might follow from recordings or books”

Likewise, the “edgy” approach towards slides and sequential materials expressed by FaZ, and her proposal to more creative approaches supported by technologies may be interpreted as a sort of need for removing a rigid sequential in course’s schedule to go towards more innovative approaches.

A-C4 perceived CHALLENGES and OPPORTUNITIES at UniPR for Open Approaches

The existence of institutional challenges and opportunities was not directly investigated in this study, as it was not relevant to the research questions, aims and objectives of the study. Nevertheless, those aspects are analysed and discussed, which emerged from the data collection as perceived institutional challenges and opportunities to the readiness of teachers towards opening up education in a technological and pedagogical perspective. Given the premises, the category therefore indirectly refers to the research questions "are educators ready and willing to open up education in a pedagogical and technological perspective? Do they have the necessary competences?"

Strategies

Interviewees do not know of any strategies concerning e-learning, technology enhanced learning, open education (and Open Educational Resources) nor MOOCs and did not distinguish much e-learning and Technology Enhanced Learning from the open learning and MOOC aspect, in terms of necessity for different strategies: OER and MOOC seems to be perceived as different aspects of the same theme: technology enhanced learning.

The only teacher mentioning a strategy is GM; she refers to a document that at the time of the interview was being prepared and that became an official document in the University strategy: the ("Programmazione dell'Università degli Studi di Parma - Triennio 2013-2015," 2014) . She mentioned it because she was involved in the planning and designing and stated that this was the first time that she

was aware that a strategy about e-learning and TEL was mentioned at the University.

Necessity for a strategy

Most of the interviewees seem to agree on the necessity for a strategy: connecting the learning/research tension to the University mission, IT05 stated that in case importance is given to learning, then emphasis should be given to learning strategies. Nevertheless, there are nuances in how a strategy is considered and perceived by teachers to be effective and different levels of necessity of a strategy seem to apply. On the one hand there is a need for the institution to be proactive, and attentive to the external and internal environment. On the other hand there seems to be a need by teachers for being involved without being forced to do things in a specific way.

IT04 believes that strategies should be seen as proposal instead of orders or mandatory procedures and they might be discussed together with teachers before their adoption. In a similar way, IT05 wonders if it should be a bottom-up or a top-down approach… IT05 thinks that teachers play a role and a bottom-up approach is useful, but then the strategy is necessary on the decisional level to define priorities and how to use funding.

There is also a need emerging for a clarification of concepts before designing strategies: IT05 calls for a need in making it clear what is meant by e-learning, and having all the teachers understand what it implies. She underlines that a different strategic approach might be necessary in different fields, as “some subject matters – mainly in the Humanities – are really bound to the tradition”. The clarification has

also to be complemented with an investigation of needs in the context.. In IT06's opinion, considering that a strategy involves costs, an evaluation of needs under both the qualitative and quantitative points of view, before deciding about any opportunity of strategy: "(…) understand which is the need, under the quantitative point of view, and which need it is".

As regards Open Educational Resources, IT03 thinks that the University of Parma is "obsolete" in this field, and that in the past it hid behind the absence of funding to state that some things could not be done. Nevertheless she is optimistic about the future, as she believes that there are competences available that might make it possible to offer services and support. She admits that political determination is surely necessary to do that. In the awareness that a strategy about MOOC is not available, either, but that some research is on-going (without the passage to the operational level), some of the teachers state that they believe it would be necessary for the University of Parma to seriously and deeply consider and evaluate solutions as MOOCs.

Reasons for a strategy not being in place

When asked if they can think of a reason why no strategy exists about technology-enhanced learning and open learning by the University of Parma, the interviewee have different opinions.

Need for funding and incentives?

What seems a common opinion is that if there is an interest by the institution, than it is not possible to just "hope" for things to be done.

In practice, it would be a good solution to invest on those that are considered priorities. “Up to now, not so many efforts and investments have been dedicated to e-learning.” (IT04).

IT01 adds: “Often it happens that we wake up only when the Ministry states this is important, we wake up if somebody else states that something is important… while the interest should arise from inside BEFORE (…) and you answer ok yes I do because there is an incentive… so you see? If there is an incentive you move… you have to do the same with your employees, then… you give an incentive and they will surely do something!”

Engineers are aware that the University of Parma was involved in Project Nettuno since its very inception; nevertheless LV mentions it as an experience that was probably not developed to face the present situation: “so we are a bit behind… (…)…probably because it implies costs in terms of preparation that somebody has to sustain…(…) you can invest on it and put it on your shoulders if you are a saint [ironical smile] or because somebody gives you some funding… but nobody gives you any funding…”

Among incentives, an increase in funding for research is mentioned, or a reduction in the time teachers have to spend on “bureaucratic” activities; it is not explained precisely which incentives would work more than others, and IT01 states that each person knows what motivates him/her and each one “might answer individually”.

Individual and subjective approach is stronger than the community one?

There seems to be a common opinion that the lack for strategies might depend on the individual and subjective approach being stronger than the community one at the University of Parma. IT02 states that it might depend on teachers taking advantage of a gap in strategies to do the bare minimum without being involved in further efforts: “I can imagine that not having an extended and organized strategy in all the Departments depends from a logic that is… where there was the opportunity to do the bare minimum the teachers decided to do that…” IT03’s opinion seems to be similar, in terms of underlining that “a strategy is probably only there when there is a need”, and confirms that in IT03’s area “technology is considered, managed and used in relation to the bents had by individual teachers”. (IT04) maintains “at the University each and every one thinks of his own area”.

Organizational issues: is there a lack for a unitary spur? A waste of efforts?

A teacher underlines that the lack of a faculty collecting different Departments and the fact that following to the reorganization there are only Departments does not help, when behaviours and activities depend on the availability and sensitivity of single teachers. “One thinks: why should I do that?” (IT04). It has happened in the past that some aspects have been allocated to students or external consultants/companies; the result has been that once certain relationships were over, also the services were over, and this was not efficient (IT04).

Existing tension between research and learning (teaching)

From the interviews a theme has sometimes emerged, as a crucial point when talking about efforts to be done to enhance learning in possible ways, including technology and openness: the research vs. education conflict/tension. It seems that such a correlation and connection is perceived as being important in the discourse and affects technology enhanced learning through a direct impact on available funding and time.

IT03's perception is for a tension in funding between research and learning. If such a problem exists, that the University has to decide which is the main approach to adopt: IT05 thinks that it is necessary for teachers to be informed about the vision of the University in terms of what is perceived as a tension between research and education, and how this is lived and considered at a strategic level. If learning is considered as important as research inside the institution, then more emphasis should be given to learning than the emphasis that is currently given: "it is to be verified the institutional policy of the university" and "how the University is considered: institution for research or learning?" IT05 states: "if knowledge and learning are important, then more emphasis on how to learn would be useful." IT03 confirmed that research partly conditions teaching and the approach of the institution towards it. When talking about TIME as an important resource to be considered when taking decisions, IT01 mentioned the decision to be sometimes taken between doing something for teaching and something related to the research one is involved in. IT02 declared teachers usually become teachers because they are an expert in their subject matter; this is also stated by

(Gráinne Conole, 2013a, p. ix),, who argues that usually teachers are experts or researchers in their discipline. IT07 reports practical difficulties, when the role of the teacher and researcher overlap as such a situation impacts on the choice of teaching methods.

Support

As it happened when asked about strategies, interviewees did not distinguish much among support being available for different aspects of technology-enhanced learning as open learning and MOOCs. They sometimes asked for a clarification of the term support; if not clarified, some of them included tools and platforms and their maintenance and some included the infrastructure.

When the idea of support corresponded with **technological tools and platforms** teachers mentioned the "support to education and e-learning" section of the Informatics and Telecommunication Section (Settore Informatico e Telecomunicazioni di Ateneo - SITA), and those who mentioned it underlined that “such a support is not enough” (IT01) to enhance learning by technology.

As regards **maintenance (of technological tools and platforms)** as a support, teachers described a need for an enhanced maintenance – meaning by this on a 24/7 basis, if the institution wants to regularly and effectively use technologies to enhance learning.

By including the **technological infrastructure available in classrooms** in the idea of support IT05 mentioned the video projector and the computer as the most commonly available devices. She underlined a lack for interactive boards and argued that often only blackboards and chalk are available; sometimes classroom disposition

does not even allow for using monitor and blackboard together (IT07). GM supposes that each subject matter might have specific needs as regards the classroom technology (e.g. audio recorder/player for language learning).

Even if technology allows for mobility and ubiquity, the availability of the internet connection is among challenges, because students arriving from outside Parma and living in rented flats might not be easily connected to the internet at all times, so consequently the availability of space for students in computer laboratories and libraries and the opening times being “particularly unfavourable” are conditions that might make it difficult for students to take advantage of some technologies; not all students have a tablet or a smartphone available and therefore teachers consider it would be discriminating the use of such devices to try and interact with students and enhance participation.

More often, teachers identified support with a **service to give technological assistance to teachers for learning**, and did not identify it with technology but rather with services and human resources who have the necessary competences: “When you ask yourself what can I do, you have to ask the question to somebody…” (IT01). The different opinions and diverse meanings attributed to “support” seem also to depend on a different opinion of e-learning being or not about a repository of learning materials. IT01 stated “it is not enough to put there a platform available for teachers to upload documents. This is what the photocopy services did some time ago; you went there with your bunch of articles and leave it there to be

photocopies. This is not what e-learning is about. It is surely useful as it makes it easier for students to access documents, but not much more…" (…) Something else has to be created". At the Departments of Economics, where the repository was the first step towards technology-enhanced learning, local support was given to the teachers that consisted in guidelines about the contents and information to be made available. In that Department guidelines and best practices were in a sense coded to make materials available but there was no further development of any kind of support from this, and AL thinks there is a "huge need for this".

Engineers, but also language teachers, also mentioned CEDI as a service centre, a structure that they consulted when they needed support and assistance on multimedia. In the Veterinary Department a situation is described, where IT personnel are available for support on hardware, data input and technical aspects related to administrative software. It seems that people with technical competences are dedicated to different types of support that to teaching.

Some of those who mentioned the existence of support as a service given to teachers did it mentioning the support to research that is made available in the UniPR Co-Lab Research centre, and included instructional design and pedagogical assistance to it.

But in spite of support being available by Co-Lab, some further support is needed, in their opinion: "Co-Lab tries to meet the teachers' needs but teachers themselves do not know actually which are the potentialities, the opportunities of e-learning".

Those who are already involved in activities inside UniPR Co-Lab seem to consider a collaboration between teachers and technicians as necessary to enhance learning: GM stated: "I am expert in teaching a language and not in technology, I need somebody who is expert about technology to know what it is possible and what is not possible…" If the common statement is that not much support is available, the perception is that there would be a great need for it. The feeling by IT06 is that sometimes the approach by those who are in charge of the technical support is expressed into a statement: "here you are the computer, use it". There is therefore a lack for a continuative and real support network. IT06 and IT01 are however also aware that teachers' time and availability might be a challenge in creating such a network.

MCO thinks that Co-Lab has been perhaps undervalued by many and perhaps their activities are not well-known enough among teachers, so there might be a need for an incentive of such an approach, that is now available for research purposes, but might be also considered for learning services.

As regards specific support for Open Education and MOOC, not so many specific data were collected, probably due to the fact that was also stated by some interviewees, that it is difficult to imagine needs about aspects, which are not perfectly known. A need was expressed about having people who give good advice when open learning is involved (MCO), and possible supporting services for teachers about open education might include hints and advice about what is openly available online that can be related to a specific subject matter, e.g. documents, examples, web sites and similar resources (AL).

Organization and schedule of the courses do not favour learning enhancement – Time issues

General organizational issues and issues related to the scheduling courses have been mentioned among challenges to be faced concerning **time** as a scarce resource. Teachers often reported not having the necessary time to go deeper inside some aspects and to apply certain methods. An example are activities to enhance learning, that require additional time for the teacher to follow activities and give the necessary feedback to students, much more than the time a traditional learning activity requires. The time necessary to design and produce educational resources for teachers is subject to a great variability, as it depends on their pedagogical and technological knowledge and skills and on the level of multi-mediality and complexity that are necessary. If knowledge and skills have to be improved, time is also necessary for teachers to learn and to stay up-to-date.

The lack of time to invest in additional activities is also connected with what has been presented about a tension existing between research-related and teaching activities. Time is also perceived as a scarce resource for students to be involved in learning: student's available time and course schedules are also to be considered when designing learning activities. It has also to be considered that exam require a lot of time to be prepare, which is not only about learning, it is also about training to pass the exam and it also involves psychological aspects (LV).

Discussion

D-C1 Open approach rather than Open Content for learning enhancement

This category refers in particular to the research question "what does open education mean to educators in terms of enhancing learning?"

As it has been presented in the analysis, trying to answer to the research question led to define subcategories, i.e. the understanding and meaning of OER, OEP and MOOCs and their possibilities in terms of learning enhancement, as parts of what has been interpreted as an **open approach rather than a priority for open content**.

OER and OEP: understanding and meaning

Data collection shows a difficulty in having a common understanding of the term, as it was described in the analysis. This seems coherent with some literature stating that the concept of "open educational resources" is "both broad and vague" (Giving Knowledge for free - The emergence of Open Educational Resources, 2007, p. 31) and therefore highly inclusive. Such a difficulty is somehow in any case enriching the discourse, as it is the case for repurposing being meant as a way to enhance learning by authenticity and contextualisation and connecting to the real world.

As regards the knowledge of experiences about OER, some teachers use Open Educational Resources but no one creates any, and their knowledge of existing experiences looks limited. None of the interviewees mentioned, among known experiences of OER, the one by

UniPR Co-Lab, while actually most of the materials issued by UniPR Co-Lab have been released with open licences and are usable for learning, so that they are technically Open Educational Resources. One of the reasons for not mentioning such materials might be that most of the times they were not directly produced by the teachers themselves or the licences and conditions of use were not directly applied by them and also that not all the published materials are academic materials related to academic subjects.

Meaning of "Open" in Open Educational Resources

Open as (free) access and use (license)

The idea emerging, that free and costless access is a fundamental aspect of OER, is coherent with what stated by Downes (2007), as it is the concern about sustainability. Actually, It seems that some of the teachers do not differentiate between open access to everybody and access for students following to authentication. When MV associates OER to the access to recorded lectures, she probably does not consider that academic students might have recorded lectures available, which are not necessarily freely accessible for everybody but are instead made available inside a closed environment.

In spite of probably not knowing enough about **open licences** to correctly use and adopt them, teachers associate OER to this aspect, which is recognised to be the major one. As stated by Wiley et al (2014), a review of the definitions of Open Educational Resources shows they have something in common, that is that open educational resources are "educational materials which use a Creative Commons

license or which exist in the public domain and are free of copyright restrictions".

Nevertheless, being aware of the existence of open licenses as an alternative to the copyright is a necessary condition but, as it might be deduced from the declarations by interviewees, awareness is however not sufficient to correctly and confidently use, create and adopt open resources. Being not sure about "dangers" and opportunities and being worried about the authenticity of works are aspects of such a need for further understanding and practicing. Knowing more about flexible licences that are available and simple to use, e.g. Creative Commons[20] might drive out doubts about excessive time needed to apply them and foster the adoption of licenses by those who already release materials freely. Stating that resources are free for usage just for their being accessible is a signal of a gap in knowledge; as a matter of fact, any material which is available, even if freely accessible online and if not differently declared, is subject to the copyright: in reality it could not be used without limitations and it is therefore not actually open.

OER, OEP and learning enhancement

The main ideas of use by students of Open Educational Resources imply that **teachers are there to intermediate and guide**, rather than fostering self-learning by students, and show that teachers believe in their role and do not think that self-learning would be an enhancement. Instead, teachers might guide students towards the use

[20] www.creativecommons.org

of OER in different stages of learning, and help them take part in their learning process by enhancing active learning and foster creativity through OER. OER might be suitable at the basic stage, **to learn basic things** to be gone deeper in the classroom, or **support the explanation of abstract and complex concepts**. Furthermore, the **development of teacher's preparation**, which is also supported by the availability of open resources, also indirectly impacts on learning enhancement. Using OER as bone structures, as suggested by data analysis, might be a starting point to redesign and enhance learning by technology through a modification of teachers' approaches, as it is further discussed in the conclusions.

The thesis period is another period when students might find in available OER a support for their process, rather than wandering around to look for information individually.

The use of OER by students is further connected to a possibility, for those students who want, to **go beyond the curriculum** and to go beyond the university, **to prepare for the real world**, and explore specific interests, and to have a way to look back to studies in case this might be useful.

Such an idea of learning enhancement by OER

- on the one hand confirms **a broad approach to openness**, to overcome limitations and face specific challenges;
- on the other hand stands on the awareness that, in spite of changing through time, **the teacher's role is still there to be important,** and **OER are tools** that might be effectively used as

an **enrichment** and complement to other tools in a **blended view of learning**.

Nevertheless, if OERs are perceived as useful by teachers for learning enhancement — as it is recognized by interviewees — but practice does not show their wide adoption, then the aspects that hinders from adopting them regularly or creating them in the practice are to be discovered, as it is further discussed in other categories.

MOOCs: understanding and meaning

The common **need for a clarification of terms and of the definition** that emerged from the data collection seems somehow not to be in line with recent findings of a study by the European Commission, stating that MOOCs are widely known; at least, it strikes the point that a distinction has to be made probably in different nations and for different contexts. The findings of the mentioned study suggest that "MOOCs are a widely recognized learning opportunity" ("MOOCs are in high demand, especially for web design, according to new EC study," 2014), but such results might be affected by the fact that the survey was about web-related survey and it was carried out with respondents who, for the nature of their activities, were already aware of the phenomenon[21].

Data analysis shows that some aspects were commonly known to interviewee; this might suggest that, in spite of the concept of MOOC being broad and in spite of different types and interpretations of the

[21] The survey sample included in fact not only learners, but also MOOC providers, entrepreneurs, leaders of innovation support programmes, corporate managers and IT professionals.

MOOCs being available, the acronym guides the definition, probably more than what is done by the OER acronym. Moreover, it seems that the "term" massive makes the difference and is understood less ambiguously, and that the Open in MOOC is mainly associated to free to enrol and open to access.

The lack of specific reference to technology and the statements about technology being probably not an issue when MOOC are concerned might have different reasons and implications. Teachers might not be informed enough about it, and did not mention because it was something they could not explain; as an alternative, technology might simply not be their focus, or does not worry teachers when MOOCs are concerned.

MOOCs: learning enhancers or educational challenges?

The perception of MOOCs in terms of learning enhancers seems to confirm what has already been discussed for OER, i.e. that, far from being a replacement for traditionally delivered courses, they are an opportunity to integrate the academic curricula and a way to enhance learning by knocking down geographical and logistic barriers.

MOOCs as learning enhancers

Is **MOOC** a **synonym for participation**? It has to be acknowledged that many aspects, which have been described by interviewees as opportunities, seem to be mainly related to **participatory approaches** to technology-enhanced learning. Nevertheless, such a view of MOOCs might reflect a superficial knowledge of the types of MOOCs that are currently available. As a matter of fact, as it is evident from the

literature (Downes, 2010) (Clark, 2013a) (Siemens, 2013), MOOCs are not necessarily of an interactive and participative type.

Moreover, if participation and interaction are considered challenges, adopting a new model might not be enough to foster a collaborative approach to learning in students. Laurillard (2012a) confirms that technology might not be suitable to enhance collaboration if the collaborative approach is not part of the design framework. In addition, looking up at the answers, some reasons are mentioned for students not being active (attitude-related, generational and cultural issues) that might need to be approached more carefully together with teaching strategies, and the meaning attributed by teachers to participation might require further investigation.

MOOC would possibly be suitable environments to enhance participation and interaction, as they make tools and environments available for that; nevertheless, it is probably the case that the collaborative approach must be believed in and faced first of all by facing some questions about learning and teaching.

Another relevant finding from the analysis is the possibility, perceived by some teachers, to **enhance learning in MOOCs by statistics on students' "behaviours".** The point is quite complex to discuss; what is measured by tracking and statistics might be access, rather than student's active learning or participation nor interest, even more if the material that is available online can be downloaded and used asynchronously. Moreover, statistics and quantitative approaches might not be the best indicators of good learning, if not approached in a careful way. But research on "learning analytics" is a recent and

quite popular field; the first International Conference on Learning Analytics and Knowledge was organized in 2011 ("1st International Conference on Learning Analytics and Knowledge 2011 | Connecting the technical, pedagogical, and social dimensions of learning analytics," n.d.) and the first open access Journal on Learning Analytics was launched in 2014 (Gasevic, Mirriahi, Long, & Dawson, 2014). Learning analytics is "the use of intelligent data, learner-produced data, and analysis models to discover information and social connections, and to predict and advise on learning" (Siemens, 2010), that is data that can be used to make a prediction and act by personalization and adaptation and therefore enhancing learning. Considering the importance that was attributed by some interviewees to the collection of data to enhance learning by understanding student's behaviours, it might be an issue to be further investigated.

The possibility to officially **adopt MOOCs offered by other institutions to satisfy the specific learning needs by post-graduate students** and acknowledge what was proposed in the analysis, that they might be solutions "to learn from the best teachers in the world", implies the necessity to face aspects related to evaluation and certification, that it might be interesting to further investigate if the University recognized that this might be an efficient way to provide additional learning solutions for students.

As it has been presented, some opportunities are envisaged in MOOCs for learning enhancement; nevertheless it is argued by some teachers, that the process is not easy nor automatic, as **a change is needed to be able to take such opportunities**. It is a relevant finding from data,

as change readiness is one of the two levels of readiness that underlie the present study.

Challenges and worries about learning in MOOCs

As described, the main challenges and concerns seem to be strictly related to pedagogical aspects, even if the teacher's level of knowledge of MOOCs and lack of direct experience seem currently not to allow more in-depth judgements.

Some worries seem to depend on uncertainty about what MOOCs are, rather than on the knowledge of the existence of different kinds of MOOCs. Nevertheless, even if teachers do not distinguish between different kinds of MOOCs, their experience and sensitivity emerge about some of them noticing that not all the MOOCs look necessarily pedagogically innovative. This is coherent with the need, as stated by some authors, to classify MOOCs by considering different aspects rather than reducing the distinction to cMooc and xMoocs (Downes, 2010) (Clark, 2013a)(Gráinne Conole, 2013d) (Conole, 2014).

As it appears in the analysis, the **major concerns** bring back to the **necessity** – evident in constructive approaches - of **building on prior knowledge**. If Openness in MOOC is about being completely without entry barriers, this might be one of the causes of the high dropout rates that are reported for MOOCs and which have been a debated issue in blogs, conferences and in the literature about MOOCs (Siemens & Long, 2011) (Liu et al., 2013)(Morris, 2013)(Peter & Deimann, 2013)(Yuan et al., 2013)(Cress & Delgado Kloos, 2014); nevertheless, it is significant to notice that no specific reference, except for one case — when it was mentioned by the interviewer— was

made by teachers to dropout rates in MOOCs. This might suggest that teachers tend to have a deeper approach to pedagogical concerns about MOOCs.

Open approach rather than open content

Single interviewees did not explicitly mention different dimensions of openness; nevertheless, the wide idea of openness expressed by the whole of teachers' answers, as it is presented in the analysis, and being about seamless learning, without barriers and boundaries, even if not organic and comprehensive, seems to be in line with some authors (Weller, 2014) stating a need for a broad idea of openness.

Findings reveal that breadth is expressed in terms of freedom to choose both the subject and the teacher, in a view that focuses on diversity and flexibility. Moreover, a view towards openness towards the external world is emphasised as possible useful for students to prepare for the real world and lifelong learning. (Gráinne Conole, 2013c) considers openness "from a broad perspective, covering each major phase of the academic life cycle, namely, design, delivery, evaluation and research". Still, she identifies being "open in as broad a sense as possible" as adopting more open practices, while the data collected in the research show that in spite of a potentially broad idea of openness is present, which should favour open approaches, no practice is currently witnessed. This seems to confirm what stated by Conole et al. (2012), Ranieri (2012) and (Gráinne Conole, 2013a), i.e. that open education, in spite of movements being present, projects being implemented and declarations being made about benefits and

opportunities, has not so often translated into common practices by teachers.

Open Education to add opportunities, face problems and challenges

Apart from not being considered as an alternative to traditional teaching and learning but rather an complement and integration, as already mentioned, both Open Educational Resources and MOOCs seem to be considered a possible way to take the opportunity to collaborate on national and international levels, and as an answer to specific problems and challenges, as geographical and logistic limitations, organization and flexibility difficulties, needs by working and non residential students.

Significantly, though, none of the possibilities that are mentioned is related to real practice or experience; it is all about desirable strategies and proposals.

As above stated, if Open Educational Resources and MOOCs are perceived as potentially useful by teachers for learning enhancement, as it was declared by interviewees, the aspects that hinder from adopting them are to be discovered — as it is discussed in other categories — and investigating ways to foster their adoption might be advisable.

TO SUM UP (D-C1)

- Perception of OER as a vague and inclusive term, and no common understanding on it – more clarity on MOOC acronym, but still a need for a clarification of terms and of the definition.
- "Open in OER": perceived as free access, free resources to use and re-use.

- Attention towards open licenses: need for knowledge and understanding, but not necessarily stressed as a priority, as the learning platform seems to allow solving or at least getting round the obstacle.
- Irregular and non-constant use of OER is reported and not regular OEP; no experiences are available about re-use or creation of OER.
- Learning enhancement by OER envisaged as a way to support students, overcome limitations or face specific challenges; OER as tools for teachers and students for learning enrichment, in a (teacher facilitated) blended view of (open) learning.
- Lack of specific references to technology; technology looking not to be a major issue when MOOCs are concerned.
- MOOCs as OER, envisaged in terms of an integration to traditionally delivered courses, a way to integrate the academic curricula as well as a way to solve specific problems and find a solution for certain difficulties.
- Main opportunities offered by MOOCs: participatory and interactive approaches, knowledge of the learning "audience" through learning analytics.
- Need for a change in the approach by teachers and the institution to take the opportunities offered by MOOCs.
- Challenges and concerns about MOOCs: complete openness without barriers might hinder building on prior knowledge.
- No reference made to different dimensions of openness at an individual level but broad idea of openness in general, that, however, seems not to directly translate into practice except for a somehow irregular use of OER.

- Open Education envisaged as a set of solutions to face challenges and solve problems.
- Suggestions and ideas, expressions of needs and desiderata, only little practice and experience.

D-C2 Readiness gap to open up education in a pedagogical and technological perspective.

This category refers to the research questions "are educators ready and willing to open up education in a pedagogical and technological perspective? Do they have the necessary competences?". Moreover, It refers to the objectives regarding the exploration of teachers' perception in relation to both the pedagogical and technological implications and the competence and support needed for adopting OER and OEP and MOOCs in their courses.

Data collection and analysis led to a complete redrawing of the initial readiness framework, as it is explained in the Methodology chapter, section Data Analysis, on page 239. Referring to the framework allowed to show an evidence from data that there are some gaps that might be bridged, as regards the cognitive and affective aspects, under both the technological and the pedagogical point of view, even if with an emphasis on the second one.

Learners / Human resources	Bloom		
	COGNITIVE	**AFFECTIVE**	**PSYCHOMOTRIC**
	Knowledge (previously known material, terminology, facts, ways and means, theories) **Comprehension** (understanding) meaning **Application** → use in new and concrete situations **Analysis** **Synthesis**: creatively or divergently apply **Evaluation**: judging value based on personal values	Feelings Values Appreciation Enthusiasm Motivations Attitudes	Using technical instruments Other skills
	Knowledge	**Feeling**	**Competences (skills) / tools**
TECHNOLOGY (and innovation)	*Knowledge of possible technologies to use* *Knowledge of experiences / examples* *Knowledge of existing support (T)*	*Attitude towards use of … (positive/ negative)* *Attitude towards technology* *Feeling about existing support (T)*[2] *Feeling about technological competences* *Attitude towards innovation*	*Ability to use… (technological skills)*
PEDAGOGY	*Knowledge of existing strategy (T-P)* *Knowledge of existing support (P)* *Different levels of enrichment (learning quality)* *Teaching experience* *Knowledge / comprehension of the right approach / tool for the pedagogical approach* *Sociological aspect*[1]	*Attitude towards self-development* *Feeling/attitude towards strategy*[2] *Feeling about existing support*[2] *(P)* *Motivations as teacher* *Attitude towards teacher's role / teaching approach* *Feeling about "tension" research / teaching* *Feeling about pedagogical competences*	*Ability to use (pedagogical-level skills)*

[1] It is positioned between cognitive and affective domain, actually, because the bent might depend on knowledge and comprehension of some aspects, on evaluation, but also on specific motivations and attitudes
[2] We explored perceptions by teachers, so we do not consider the institutional aspect of support/strategy (which is verified by carrying out the document analysis) but rather the perception about external factors (strategy/ support)

Fig. 9 Teacher's readiness for open learning and MOOC - extended framework[22]

Most of the aspects are covered in this category about readiness, mainly those about the pedagogical and technological perspectives; nevertheless, as it emerged from data collection and analysis, readiness is a complex and multi-faceted question; analysing and discussing it referring to only one category would be an oversimplification. Some aspects are therefore mentioned in the category about opportunities and challenges being perceived by teachers to opening up education (p. 226). Moreover, teaching

[22] The framework is also enclosed in the Appendices section (Appendix no. 14) , in order to be more readable.

experience and the attitude towards the teacher's role are better discussed in the category about teacher's strategies and perceived role starting on page 218.

Gap in pedagogical knowledge and competences

Apart from what was directly stated by teachers, about their perception of their pedagogical knowledge and competences, the interpretation of some described attitudes and strategies also suggested a need for improving their pedagogical competences, in order to be able to involve and motivate students both in face-to-face approaches and in technology enhanced environments.

In the framework such aspects have been identified as "teaching experience", "knowledge and comprehension of the right approach and tools for the pedagogical approach" (cognitive domain) and "motivation as teacher", "attitude towards teachers' role / teaching approach", "feeling about pedagogical competences" (affective domain), "ability to use pedagogical skills" (psychometric domain).

Data collection seems to recall the declaration of some authors about a situation in Italy (Ranieri, 2012) that is probably not so different in other countries. (Gráinne Conole, 2013a, p. ix) argues in fact that teachers are chosen and recruited because of their subject domain knowledge and their research expertise and reports that many institutions in her country offer courses to introduce them to good learning and teaching practice.

No specific pedagogical competences seem to be perceived as necessary to face MOOCs. As it has been analysed and discussed in the category "D-C1 Open approach rather than Open Content for

learning enhancement" on page 195, worries and opinions are expressed about pedagogy in MOOCs, more than perceived gaps in teacher's pedagogical approach. This does not mean that the pedagogical aspect is not acknowledged as important, but it seems a **general gap, rather than specifically related neither to a single or definite aspect, or to an approach to technology enhanced learning / open learning.**

Attitude towards technology

Critical approach to technology

The critical approach to technology that has been described in the analysis might be related to the fact that the specific sample includes teachers which share some values in the UniPR Co-Lab Research Centre and are therefore agreeing on technology being an extension, a tool, to satisfy learning needs, rather than the core of the discourse. On the other hand it may also be partly related to their experiences with technology being used in educational context being not always positive in the past.

Sometimes, more than critical, the approach looks ambiguous, in terms of tension between curiosity for solutions to enhance learning and dissatisfaction of the present situation. This might be related to a feeling of uncertainty about knowledge gaps being present on certain aspects.

The collected data show that the need to help students use the right technology for effective learning is mainly mentioned by language

teachers; this might be just sheer change, but such an approach might be also connected

- to the specific subject matter their teach being about communicating;
- to their specific research interests;
- to their being already doing research about technology enhanced learning inside UniPR Co-Lab Research Centre.

On the other hand, not facing such an aspect by engineers might be simply related to their not seeing a need for it in their students.

Focus on usage rather than on specific tools

The infrequent mention to specific technological tools that has been described in the analysis might be another side of the critical approach to technology, but it is an important aspect to underline. This is both coherent with the vision of those who share certain values about technology enhanced learning at UniPR Co-Lab and with what is stated in the literature about digital literacies being the core rather than the technologies. Howard Rheingold considers media as "mind amplifiers" and suggests to keep up with the literacies that the technologies make possible rather than with technologies, to "shift the power" from technology to know how (*CollabTech 2010*, 2010). By stating that a rational response to technology can avoid "inappropriate uses of technologies" "to serve educational aims" and that it is necessary for teachers to be "able to master the use of digital technologies, to harness their power, and put them to the proper service of education", Laurillard (2012a, p. 2) draws a similar

conclusion, that technologies are not to be the focus, but rather mastery in using them to enhance learning.

Influence of tradition and previous experiences with technology enhanced learning and open education

Only a few experiences are reported about OER and relevant practice, and no experience at all about MOOCs; this implies that perception of MOOCs and OER that interviewees expressed is probably not influenced by previous relevant experiences. Nevertheless, previous experiences with completely online course, as already discussed, might influence the shared views emerging from data analysis, that open education and MOOCs should be envisaged as complement and integration to traditional learning rather than alternatives. Furthermore, the opinions about experience with open learning might be a good base to consider not to make (the same) mistakes, if any, and to take advantage of positive practices for any future experiences.

Gap in technological competences and skills

The analysis shows that some interviewees perceive gaps in technological competences, but the impression is that such a gap is not so great to hinder them from using technology to enhance learning; there seems to be rather a need for an improvement and development of technological competences together with knowledge of sensible uses of technologies in the educational context. Considering that time is a common issue for the interviewees, and finding time for training might be difficult, even being informed about the available possibilities to enhance learning by technology is considered useful.

The gap revealed by data between a personal use of technology and a use for educational purposes is coherent with some literature (Gráinne Conole, 2010) (Ranieri, 2012, p. 73) and with studies about the usage of technology by teachers for teaching. A study[23] by the Istituto Tecnologie Didattiche of the Italian National Research Council (ITD CNR, Istituto Tecnologie Didattice - Consiglio Nazionale delle Ricerche) is about technologies being available and personally used but at the same time not used in educational context, and is trying to investigate the which role is played by teachers' perceptions.

In spite of acknowledging that emphasis on communication and interaction in MOOCs might require further technological skills to be mastered to furnish the learning environment in the most appropriate way, teachers seem not much worried about their technological competences and skills. In particular, the impression is that the weight of such a factor might not be so relevant; the gap they perceive seems quite mild if compared to the one for pedagogical competences that has been discussed in the previous sections (Gap in pedagogical knowledge and competences, p. 210) and to other external factors that are discussed in the category "D-C4 perceived CHALLENGES and OPPORTUNITIES at UniPR for Open Approaches" on page 226.

Saying no to a technology-pedagogy dichotomy

Besides being shared by some other teachers, the opinion by GM, that technology and pedagogy are to be considered as going hand in hand,

[23] http://sites.itd.cnr.it/scalaITIS/

is also coherent with some literature about technology enhanced learning. (Perkins, 1991) (Maragliano, 1998)(Maragliano, n.d.).

GM cites her article, in which she 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. Are they evolving at the same speed? I guess not, rather the latter is progressing at the speed of light, while the former involves a slower process of elaboration. Nevertheless, they should not be seen in terms of the one catching up with the other, like a dog chasing its tail! " (Mansfield, 2000).

In the same article she mentions different uses of technology for language learning through time and recalls the technologies associated to different periods. Even if she specifically refers to language learning, such an approach remembers and is similar to the one taken by Conole in the timeline she elaborated, where she shows the development and research of the application of technologies in education by (Gráinne Conole, 2012)[24]. Interestingly, in another paper Conole, Dyke, Oliver, & Seale (2004) also map technological tools and 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"*.

As already mentioned in the literature review, the importance of avoiding any dichotomy between pedagogy and technology is also

[24] see also the Literature Review, on page 83

underlined by Laurillard (2009, p. 6), who calls for a necessity to "*ensure that pedagogy exploits the technology, and not vice versa*"

Such an approach seems very important in a context where, as discussed in the part about the meaning of openness (page 204), priority seems to be for an open approach rather than for pure content. Considering that, as discussed, there seem to be gaps to be filled to get ready to face open education and the MOOC phenomenon, balance and attention to both technological and pedagogical perspectives might be one of the bricks upon which readiness for open education might be built upon, in a view that involves all the necessary aspects for learning to be really effectively enhanced.

TO SUM UP (D-C2)

- Readiness for open learning and MOOC: a multifaceted and complex question to face.
- Need felt by teachers for improving their pedagogical competences to involve and motivate students in both face-to-face approaches and technology-enhanced environments.
- Teacher are chosen and recruited because of their subject domain knowledge and research expertise and no specific competences are required.
- No further specific pedagogical competences are perceived as necessary to face MOOCs more than those necessary to teach in a technology rich environment.
- Concerns are present for pedagogical aspects, due to characteristics of MOOCs as freedom of access, large scale.
- Technology not just for technology's sake: critical approach to technology.

- Need to help students use the right technology for effective learning.
- Apparent focus on usage and mastery, rather than on specific technological tools.
- Need for improving and developing those technological competences that are reasonably useful to enhance learning.
- Gap between a personal use of technology and a use for educational purposes.
- Importance of avoiding any dichotomy between pedagogy and technology.

D-C3 Teacher's strategy and perceived role in relation to learning enhancement by open approaches

This category refers in particular to the research questions "are educators ready and willing to open up education in a pedagogical and technological perspective? Do they have the necessary competences?"

As it is stated in some literature, e.g. (Ranieri, 2012) , (Laurillard, 2012a, pp. 37–38) (Entwistle & Peterson, 2004) (Lowyck et al., 2004) and explained in the literature review, the teaching approach and strategy influence student learning in general.

As claimed by Laurillard (2012a, p. 4) "*What* is learned is significantly affected by the range of teaching methods used - *how* it is learned". Ranieri (2012) mentions receptive, directive, guided discovery and collaborative approaches as alternative teaching strategies having different impact on learning, and Laurillard (2012a, pp. 37–38), considering the teaching/learning environment for students to learn more effectively, resonates that the most effective teaching methods include guiding students (toward independent learning), situate the application of knowledge in different contexts (…), encourage reflection and self-regulation.

Perceived teacher's role

Some kinds of uncertainty seemed to be more expressed by those teachers with a more traditional role in mind or with a mixed approach. Those who prefer a learner-centred approach and wear the facilitator's shoes describe approaches to learning which are coherent with constructivist approaches.

- The need for a **personalization** of learning and for **motivation** to be fostered;
- the need for **authenticity of tools for learning** and **for building on student's prior knowledg**e by helping them to understand what they already know;
- the role of the teacher as interface between students and technology

are coherent with the constructivist view of teachers as mediators between students and learning environments.

Those teachers who describe more traditional lecturer roles for their face-to-face teaching usually do that when the theoretical part of their course — about content — is concerned and reflect that in first level degree courses students probably expect such a strategy and would look with suspect at different approaches.

As it is evident from the analysis, teachers often prefer a sort of mixed strategy, and adapt it according to aspects, which depend on how they interpret the students' approach and on organizational challenges. The range of activities mentioned by the different teachers as a way to enhance learning (project-works, laboratories) shows itself that there are efforts to adopt a problem solving and activity driven approach to teaching, but this is not always possible.

Even if it sounds easier for those who already act as facilitators to master and therefore apply strategies which are appropriate to enhancing learning in general, there is not always a correspondence between such a behaviour in face-to-face learning and a correspondent success in doing it when the use of technologies is involved.

As a matter of fact, as it is confirmed by some literature (Ranieri, 2012)(Laurillard, 2012b)(Gráinne Conole, 2013a) and discussed in other sections, being eager to adopt open approaches and to use technology to enhance learning is often not enough to put it into practice, as other factors affect it.

Teaching strategy and approaches to technology enhanced learning

The strategies and behaviours that are described by the interviewees in terms of usage of the technologies and adoption of problem solving and activity based approach empowered by technology, in an effort to improve some aspects of their courses and enhance learning are the most diverse. The data seem to indicate that it mainly depends on

- teacher's pedagogical approach (student-centred/teacher's centred, directive/receptive);
- teacher's knowledge of the available platforms, tools and techniques to apply tools for their pedagogical objectives;
- teacher's previous experiences with online learning/ e-learning and consequent opinion of technology-enhanced learning;
- support given to the design, organisation and implementation of technology enhanced activities;
- teacher's perception of the approach by students being active or passive;
- level of the Degree course (basing on the characteristics of the enrolled students);
- number of students enrolled;
- organizational limitations;

- available infrastructure that affects the digital literacy approach during face-to-face activities;
- time issues.

The perceived external and internal challenges and opportunities that are not related to teaching strategies are better analysed and discussed in the relevant section (section D-C4 perceived CHALLENGES and OPPORTUNITIES at UniPR for Open Approaches on page 226)

A blended approach, meaning by this a combination and coexistence of traditional face-to-face teaching methods and activities and (online or not) technology enhanced ones seems to be the strategy that is believed in by all interviewees, and is confirmed by Littlejohn & Pegler (2007a) as the main approach to e-learning in academic environments.

OER, MOOC as learning enhancers: a shift in teachers' role by flipping the classroom?

As it was described in the analysis, some teachers mention a sort of flipped classroom approach by describing it without even knowing about research on it, and some of them are already careful to aspects that might foster such an approach. It has been argued that flipping the classroom is not a new teaching method and that it is bent to failure (Dahmani, 2013); nevertheless, Maglioni & Biscaro (2014) in spite of confirming that it is not completely a revolution per se, underline that often is not actually applied in formal education in effective ways. Franchini (2014) confirms that they might be an effective method to enhance mastery in learning, and to give the

possibility to the teacher, instead of transmitting contents, to interact with students in their construction of knowledge and give students a part of the responsibility for their learning. Some Italian researchers / teachers have written about experiences with recorded lectures (A. Defranceschi & Ronchetti, 2011) (Anneliese Defranceschi & Ronchetti, 2011) and about flipping the model by using recorded lectures (Ronchetti, 2010). Ronchetti describes his "VOLARE Video On Line as Replacement of old tEaching practices" methodology in an article, stating that the "*aim is to help traditional teachers to switch from the frontal lecture model to a pedagogically more sound and effective strategy. The key of the methodology relies in taking advantage of today's innovative technology to relief the teacher from the duty of "knowledge presentation". The teacher can hence devote all the efforts to a more participatory and interactive exchange with the students.*" (Ronchetti, 2010, p. 134). This does not necessarily mean that Open Educational Resources created with recorded lectures and made available to students might be enough to shift the role; nevertheless practices might be fostered, that use recorded lectures, other videos or further kind or educational resources — to be made openly available — and integrate them in the design of learning activities following a flipped model, so that the emphasis is on critical thinking and conversations, rather than merely on content. This would be also coherent with the idea of openness being broad, rather than being about content, as it has been discussed.

Does the perceived teacher's role influence open approach?

As it appears from the collected data, **there seems not to be a real connection in practice between feeling oneself as a motivator and facilitator and being involved in the creation of open educational resources, the adoption of open educational practices and the organisation of MOOCS.** As a matter of fact, none of the interviewees is actually involved in Open Educational Practices being totally aware of it. And none of them is involved in MOOCs.

Nevertheless, considering that

- learning enhancement is regarded in this study as fostering — among other aspects — motivation, collaboration, creativity, dialogue;
- some of the teachers who report a facilitator role are using technical collaborative tools or methods to involve students online (discussion boards, online collaborative activities);
- some of the teachers acknowledge a possible need for innovative methodological approaches to maximize the role and time of the teacher;

it might be true that those teachers who

- actually adopt — or at least have a preference for — a learner-centred approach;
- adopt or believe in a collaborative learning approach;
- perceive their role as guide and mentor rather than as a content carrier, or “knowledge imparting” one;
- are aware that methodological changes might be necessary;

might result to be more suitable and ready to enhance learning by open learning approaches, to face the perceived challenges and take

advantages of the perceived opportunities, as it is also suggested by (Ranieri, 2012, p. 42).

Moreover, the impression from data collection was that second-level Degree courses — that are already considered in a different way and sometimes faced by different strategies by teachers — might be the starting point to foster an open approach to learning. Those teachers who teach in both types of courses or can count on experience and can distinguish between different levels, and are willing and curious enough might be those who can be considered as a starting point to go towards the use of Open Education and MOOCs as an integration of the traditional course.

To sum up (D-C3)

- "Facilitator" teachers describe coherent approaches to constructivist learning theories.
- Quite traditional approaches to theoretical parts of the courses, following to a perceived need by students.
- Mixed strategy - adapted depending on interpretation of students' approaches and organizational challenges — shared by some teachers.
- Efforts to adopt problem solving and activity driven approach on some occasions.
- Adoption of open approaches and use of technology to enhance learning affected by other factors rather than only willingness.
- Diverse strategies and behaviours adopted to implement technologies in the courses to enhance learning, depending on diverse reasons.
- Blended approach to technology enhanced learning: coexistence of methods.

- No real connection between constructivist approaches and the current adoption in practice of OER and open approaches.
- Probably higher suitability to enhance learning by open learning approaches by teachers showing certain approaches and adopting specific strategies.
- Second-level degree courses as possible environments where open approaches to learning might be fostered.
- Attention to pedagogical innovations that might be introduced to maximize the teacher's time and add value to it (flipped classroom models?).

D-C4 perceived CHALLENGES and OPPORTUNITIES at UniPR for Open Approaches

The existence of institutional challenges and opportunities was not directly investigated in this study, as it was not relevant to the research questions, aims and objectives of the study. Nevertheless, those aspects are analysed and discussed, which emerged from the data collection as perceived institutional challenges and opportunities to the readiness of teachers towards opening up education in a technological and pedagogical perspective. Given the premises, the category therefore indirectly refers to the research questions "are educators ready and willing to open up education in a pedagogical and technological perspective? Do they have the necessary competences?"

Strategies

The document analysis confirmed that no official strategy is in place at the University of Parma; as already discussed in the section "Strategy for e-learning" on page 121, a strategy has to be stored and shared within an organization to be effective; therefore, in spite of the existence of a document, no one recognized it as a strategy and no one even cited it in data collection. This is an indicator that, in spite of being sometimes unsure in their declarations, all the teachers shared the same perception about a strategy being not present that corresponded to the real situation, which is in line with the first findings of the study by (Tammaro et al., 2013).

Even if all of them mentioned it, teachers perceive the emerging necessity for a strategy in different ways. A preference seems to apply for a strategy in terms of incentives and propositions, which

considers what has already done thanks to those teachers who adopted a bottom-up approach. It is coherent with some literature, that states that putting things as mandatory is not the best way to involve people. The literature shows that the approach emerging from data analysis, consisting in

- supporting those who already use some approaches;
- helping those who would like to find out how to work and learn collaboratively and are not doing so
- encouraging and supporting those individuals who want to connect with others and collaborate to work and learn together

might be the good practice (J. Hart, 2012), rather than more pushing approaches (Raffaghelli & Ghislandi, 2013).

Furthermore, some teachers underline that strategies have to be based on shared understanding of some concepts — as e-learning — and that investigating both students' and teachers' needs under both the qualitative and quantitative points of view would be necessary before proposing any strategy. Such an approach seems a signal of their willingness to be involved in the process and to be participative, which is in line with the need for participation of everybody that has made clear by the new managing course in the documents that have been analysed ("Programmazione dell'Università degli Studi di Parma - Triennio 2013-2015," 2014).

The reasons that are perceived by teachers for strategies not being currently in place, in spite of being referred to a past situation, might give suggestions about possible barriers that might be also met in the future when designing a strategy: a need seems to be perceived for

probably creative incentives to be found for those who are willing to be involved in the change (in addition to schedule facilities and funding for research), together with a need to create an inclusive and unitary organizational culture, that overcomes existing subjective and sectorial approaches that might have been favoured by some forms of reorganization.

A particular attention was dedicated by teachers to the existing tension between research and learning/teaching, as a barrier to be overcome; a need for a clear direction to be taken by the institution was stated.

Finally, the perceptions of teachers about rigid course organization and schedules and, more in general, about scarce time being available for teaching and learning, are aspects to be probably carefully considered when designing strategies and support for open education.

Support

Support — when technology enhanced learning and possible open learning approaches and are involved — is considered by some teachers mainly as a service to give assistance to teachers, not only confined to infrastructure, and to putting hardware and software at teachers' disposal. This approach might also depend on the sample composition: interviewees were chosen about those teachers who already share some of the UniPR Co-Lab values, among which there is the awareness that technology enhanced learning is not only about technological tools. Moreover, the specific context might have also influenced the importance they attribute to such a kind of service.

Nevertheless, a reflection might be necessary on the fact that some of teachers, in spite of being part of the Co-Lab, did not mention it when talking about the existing support and some others stated that what is done inside Co-lab might be not enough. This might depend on Co-Lab being not perceived as a support but rather as a research centre — as it actually is — on certain matters. It might also depend on a need for a change in the approach, but might probably also depend on the scarcity of human resources in charge of some activities at Co-Lab to give those services, and on a perceived necessity to disseminate experiences inside the University and empower Co-Lab approach – as suggested by some teachers. The situation that has been portrayed in one Department of IT personnel being available, which is not employed to support teachers for aspects related to technology enhanced learning, might also exist in other Departments, even if it was not reported during the interviews, so it might need to be further investigated to gain deeper understanding. Document analysis shows that there isn't any record available of the specific competences by different IT personnel profiles, and it might be the case that having competences, which are both technical and learning related, is not a common situation. Apart from the specificity of UniPR Co-Lab, the interviewees perceive having good advice and support as necessary; in case also the management shares such a need, some reflections and research might be necessary on the competences required and the profile of those involved in the support. Data collection seems to show a need for a profile that is not a mere technical but also a consultant one, that involves competences about learning and teaching, digital

resources, digital publishing, learning design. Those who have experienced the collaboration with a similar profile inside the Research Centre express their satisfaction about it. Nevertheless, there seems to be a need for similar experiences to be further communicated and shared.

The data show that different teachers had different perceptions of the level and characteristics of the existing support that might depend on their collocation and on their consequently knowledge of different types and forms of support; this might be a confirmation of what was mentioned about strategy, i.e. that a unitary and shared approach to technology enhanced learning is not present.

An organic view of the emerging challenges and opportunities

Starting from the analysis of the collected data, and considering what emerged from document analysis and from the literature review, a tentative swot matrix was drafted, that shows the perceived internal/institutional weakness and strengths (interviews) and some of the existing external threats and opportunities (documents and literature review). Such a matrix is not comprehensive, as it does not include individual-related aspect referring to the cognitive, affective and psychometric domains, and should therefore be considered together with the extended readiness framework (Fig. 12, p. 239).

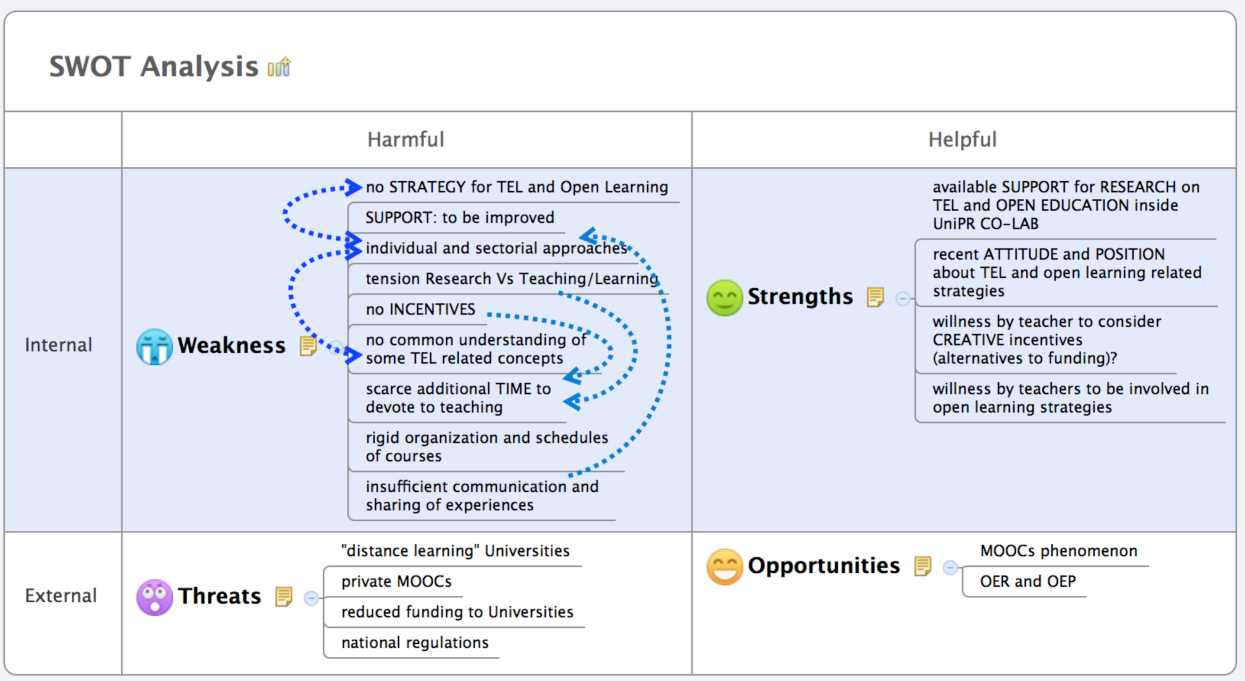

Fig. 10 Institutional challenges and opportunities, as perceived by interviewees and emerging from document analysis and literature review

TO SUM UP (D-C4)

- No official "strategy for e-learning" in place at the University
- Preference for strategies in terms of incentives and propositions taking on board the experience from bottom-up approaches.
- Need for clarification and share understanding of key words.
- Need for investigating students' / teachers' needs under qualitative and quantitative points of view before proposing strategies.
- Need for fostering inclusive and unitary organizational culture that overcomes existing subjective and sectorial approaches.
- Scarce flexibility in course organization and schedules and scars time to be considered as challenges.
- Different concepts of support to technology-enhanced teaching, thus agreement on advice and support being necessary.
- Supporting profiles involving inclusive and broad competences.
- Need for communication and sharing of experiences.

Conclusions and implications

(finish line as a starting point)

In this chapter, the most relevant findings from data analysis and discussions, together with findings from document analysis are aligned with the objectives of the research. However, **conclusions** are here envisaged **not as a finish line** that was reached in this research marathon, but rather as a **new starting point for reflections**, as it appears from a convergence of findings from the objectives into important questions for reflection. Furthermore, basing on the findings, some **recommendations** are given for UniPR Co-Lab Research Centre and the University of Parma. Finally, **some suggestions and proposals for future research** are given.

Research objectives

The study aimed at establishing the role and possibilities of OER, OEP and the MOOC phenomenon in relation to learning enhancement, and to identify and gain insight into the pedagogical and technological implications that this concept of openness may have. Moreover, it aimed at exploring the perceptions of teachers, who might be involved in the use of Open Educational Resources and the adoption of Open Educational Practices and the MOOCs. To help achieve the stated aims, the following objectives were outlined, that directly deal with data collection: explore teachers' perceptions in relation to the pedagogical implications of adopting Open Educational Resources or Open

Educational Practices and MOOCs in their courses; explore teachers' perceptions in relation to the technological implications of adopting Open Educational Resources or Open Educational Practices and MOOCs in their courses; explore teachers' perceptions in relation to the competences and the support needed to adopt Open Educational Resources or Open Educational Practices and MOOCs.

Explore teachers' perceptions in relation to the pedagogical implications of adopting Open Educational Resources or Open Educational Practices and MOOCs in their courses

The interviewees declared a **non-sufficient knowledge** of **Open Educational Resources and MOOCs**, together with an **absence of regular practices** that would be necessary to give more experience based answers, and showed **diverse understanding of OER and MOOCs**; in spite of this, the interviewees show a **broad approach to open learning, rather than mere attention to contents**, and identified some p**ossibilities for OER to enhance learning by use and reuse**, together with opportunities for **teachers' self-development**, that would indirectly impact on learning. Some possibilities have been identified for **MOOCs** to be learning enhancers by **fostering interaction and participation** and answering **to specific students' learning needs** or to **solve challenging issues**. Nevertheless, some **pedagogical concerns** have been raised about learning in MOOCs, which are mostly related to their characteristics of being open to anybody, whatever the background, language and previous knowledge level. Those teachers who feel motivators and

facilitators, in particular, call for a need for **personalization** and **building on knowledge**, which are significant aspects to enhance learning by motivation and might be **challenging** in open and large scale learning environments.

Explore teachers' perceptions in relation to the technological implications of adopting Open Educational Resources or Open Educational Practices and MOOCs in their courses

A **critical approach** to technology by interviewees has emerged from data, that implies a perceived **need to look at technology as an "empowerment"** rather than the objective of introducing technology in learning activities, which is also one of the main drivers of the creation of UniPR Co-Lab research Centre since the beginning. Furthermore, the interviewees seem to **focus on usage rather than on specific technological tools**, which is what is also suggested by some authors, to use technology in ways that are appropriate to meet educational aims (*CollabTech 2010*, 2010) (Laurillard, 2012b). A **need** is also acknowledged in some cases **to help students use the right technology for effective learning**.

What seems quite a relevant finding is the **absence of specific implications of technology to enhance learning by OER, OEP and MOOCs** that is revealed by data. Apart from a specific attention that is considered as necessary for technological tools allowing for the production of multimedia, no additional technologies are considered necessary to be added to the “burden” of technologies, which are already necessary for teachers to teach in the present world. It is not

specifically open learning by OER and MOOCs, therefore, that requires technological innovation, but rather the whole discourse about technology enhanced learning.

Explore teachers' perceptions in relation to the competences and the support needed to adopt Open Educational Resources or Open Educational Practices and MOOCs

Data analysis and discussion confirm what is stated in the literature, that **teachers** in the **academic environment** are **chosen for their knowledge of their subject matter and competences concerning contents** without any requirements for them to undergo professional training in terms of their teaching competence (Laurillard, 2001, p. 11-12) (Gráinne Conole, 2013a). The interviewees show a feeling of uncertainty and disappointment when they reflect on their pedagogical knowledge, as it seems commonly agreed that counting on better pedagogical knowledge and competences might make a difference when the right solutions have to be chosen for teaching and for technology enhanced learning. As it is stated by Laurillard (2001, p. 11), if the aim of teaching is "to make student learning possible" (Ramsden, 1992, p. 5) teachers are given the big responsibility to know how to make it possible and data show they feel a gap about this. Keeping the elaborated readiness framework (Fig. 12) as a reference, the evidence shows therefore that perceptions go towards an **acknowledgement of a gap in the pedagogical knowledge**, under the **cognitive and affective level**, mostly regarding the following aspects:

- comprehension of the right approach/tool for the pedagogical approach;
- sociological aspect of learning and effective collaborative learning
- pedagogical competences;
- uncertainty deriving from a tension between research and teaching;
- concerns deriving from insufficient comprehension and knowledge of open licenses.

As regards **the gap in technological knowledge and competences**, a **gap** is sometimes revealed **between a personal use of technology and the use of it for educational purposes**. Therefore, more than a gap in the ability to use tools (skills, psychometric domain), the gap is acknowledged to be in the cognitive and affective domain, and mainly about the attitude towards innovation not always being confident, a need to improve the knowledge of experiences and examples, and of possible technologies to use for the pedagogy they choose; data also show a **feeling that the existing support is not enough**.

Some teachers would like to be constantly supported in their choice for the right technology, or at least be constantly informed, in the least possible pervasive and time demanding way about the possibility they have to apply technology in a way to enhance their students' learning. Those who are more confident about their own technological skills, in spite of not perceiving a specific need for themselves, admit that support ad advice might be necessary for teachers whose main subject is not specifically related to Information Technologies.

No specific experiences are reported about the use of technology-enhanced approaches for **Open Educational Practices and in MOOCs**, and the technological skills reported by teachers are mostly related to the use of Learning management Systems and web sites, or of specific tools that have been used for learning activities, as social bookmarking tools, social reading platforms, blogs, specific tools for language learning and engineering. At the same time, the interviewees perceive that **no additional particular technological competences** should be necessary **to open up education by Open Educational Resources and MOOCs**, if not those that are already necessary to **implement Technology Enhanced Learning in effective ways**.

On the whole, the gap in technological competences and skills is apparently felt as less crucial than the one in pedagogical competences; moreover, mostly for those whose domain is not related to technologies, they seem to believe that having thorough technological competences is not their job, and that it is through an effective support that it might be possible for them to enhance learning by technologies.

As it has been discussed in the category about perceived challenges and opportunities on page 226, and above described, their perceptions about the support which is needed are therefore diverse, but the analysis and discussion of data suggest a **need for fostering a unitary and shared approach to support**. Moreover, the necessity emerged for **support by professionals** which have to present **a wide range of competences**, which are not limited to technical aspects, and to be carried out in a conversational and dialogue-based way; this

seems consistent with the results by the study on OER by Tammaro et al. (2013) about appropriate and competent support being currently insufficient in the institutions.

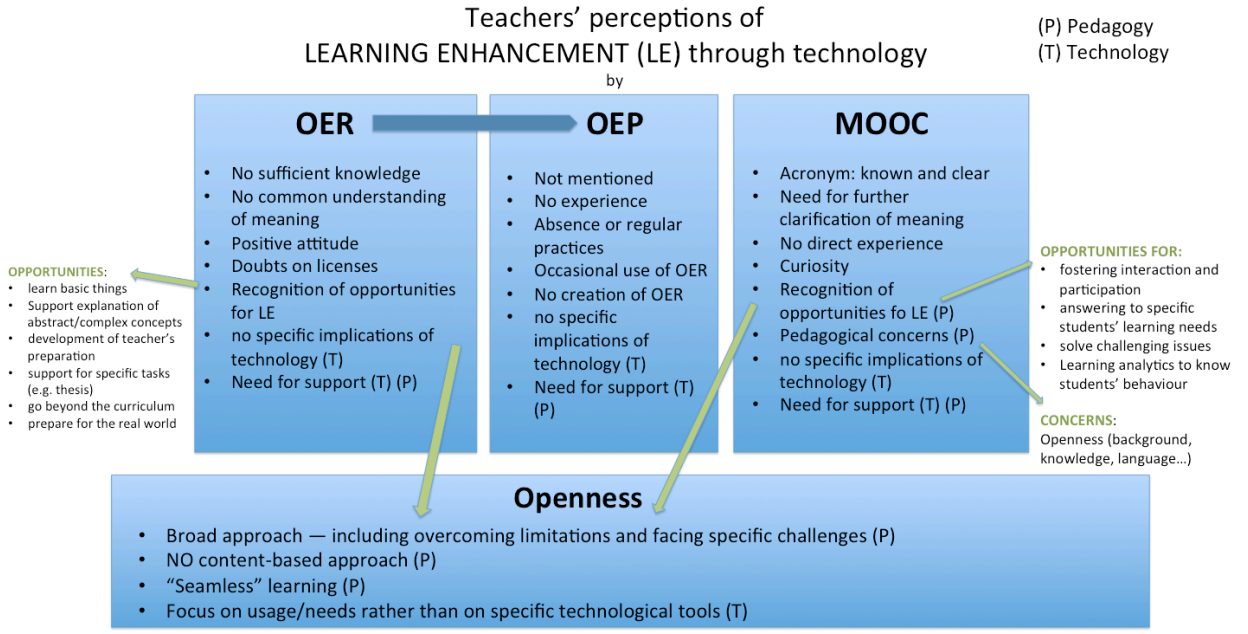

Fig. 11 Visualisation of findings from data collection and analysis

Implications and recommendations

Convergence of findings

Given the time constraints — leading to the relevant methodological decisions — and the chosen strategy for data analysis, building a theory was not among the purposes of the research. Nevertheless, a **convergence of findings** seemed to emerge **from the alignment of conclusions with the research objectives**, which goes back to the research question, if educators are ready and willing to open up education in a pedagogical and technological perspective and if they have the necessary competences. This confirms that the idea of **readiness for adopting OERs and MOOCs in a view to enhance**

learning by technology is complex and multi-faceted, and it would not be sensible to oversimplify by facing it from a single aspect.

Learners / Human resources	Bloom		
	COGNITIVE	**AFFECTIVE**	**PSYCHOMOTRIC**
	Knowledge (previously known material, terminology, facts, ways and means, theories) **Comprehension** (understanding) meaning **Application** → use in new and concrete situations **Analysis** **Synthesis**: creatively or divergently apply **Evaluation**: judging value based on personal values	Feelings Values Appreciation Enthusiasm Motivations Attitudes	Using technical instruments Other skills
	Knowledge	**Feeling**	**Competences (skills) / tools**
TECHNOLOGY (and innovation)	*Knowledge of possible technologies to use* *Knowledge of experiences / examples* *Knowledge of existing support (T)*	*Attitude towards use of … (positive/ negative)* *Attitude towards technology* *Feeling about existing support (T)[2]* *Feeling about technological competences* *Attitude towards innovation*	*Ability to use… (technological skills)*
PEDAGOGY	*Knowledge of existing strategy (T-P)* *Knowledge of existing support (P)* *Different levels of enrichment (learning quality)* *Teaching experience* *Knowledge / comprehension of the right approach / tool for the pedagogical approach* *Sociological aspect[1]*	*Attitude towards self-development* *Feeling/attitude towards strategy[2]* *Feeling about existing support[2] (P)* *Motivations as teacher* *Attitude towards teacher's role / teaching approach* *Feeling about "tension" research / teaching* *Feeling about pedagogical competences*	*Ability to use (pedagogical-level skills)*

Fig. 12 Extended framework of readiness for opening up education

By considering the cognitive, affective and psychometric domains as intersecting with the technological and pedagogical perspectives, the extended framework of readiness for opening up education that has been elaborated (Fig. 12) might be a useful tool to evaluate readiness for open education in the context in the most possible holistic way, without dichotomies between the technological and pedagogical level. What emerged from data 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 stated, among others, by Raffaghelli & Ghislandi (2013). Nevertheless, data show that the broad attitude towards openness goes over the mere content, and strategies

and practices are mentioned and suggested, that might foster openness.

The framework might be therefore considered by project managers as a starting point for an evaluation of initial strengths and weaknesses in case projects are considered at the University, which involve open learning and MOOCs; a case might be the “ENGpower” project to enhance English Language Learning; the project, as mentioned in Introduction, has been included in the (“Programmazione dell’Università degli Studi di Parma - Triennio 2013-2015,” 2014) with the purpose of promoting "quality of the academic system" and improving "services for students" in order to face some critical factors that have emerged.

Considering the findings about teacher’s perception in relation to pedagogy and technology with reference to open approaches, it might be useful to consider in a matrix the perceptions of teachers about their level of experience/knowledge and about their curiosity towards technological and pedagogical aspects; the matrix might inform appropriate decisions and strategies, basing on the context and showing possible teachers’ profiles deriving from their perceptions.

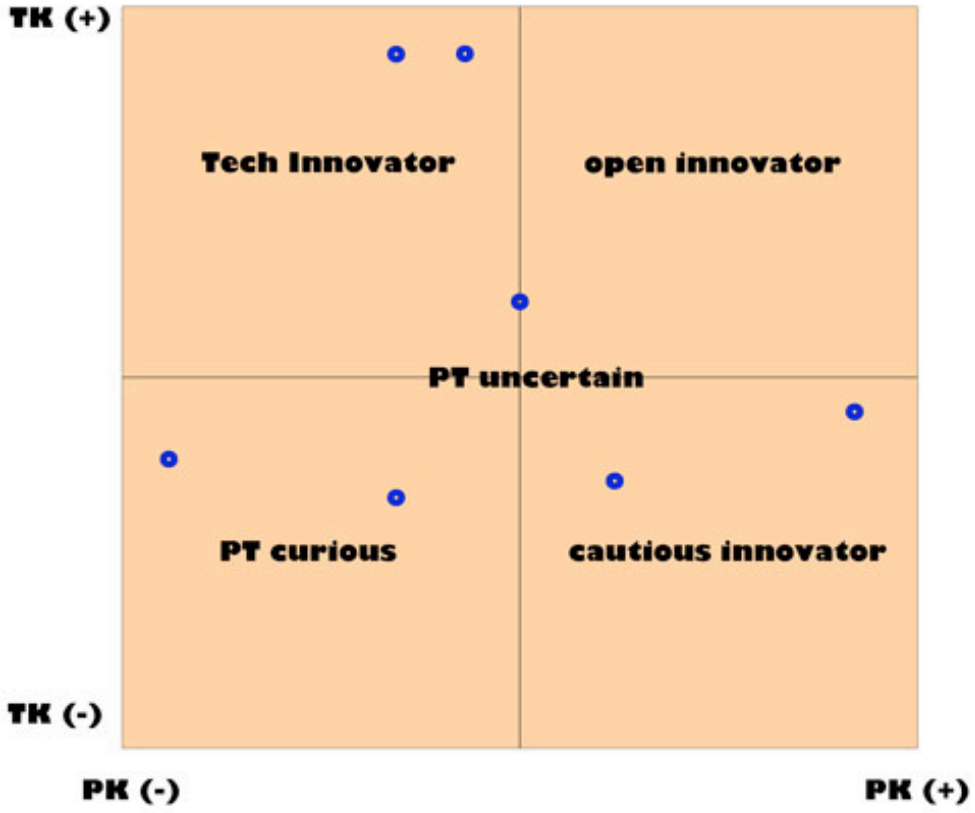

Fig. 13 Teacher profiles based on their readiness to open up education in a technological and technological perspective

Different aspects of readiness in the pedagogical and technological perspective might be considered from the proposed readiness framework, as parameters to position teachers on the matrix.

The matrix in Fig. 13 shows the possible profiles deriving from readiness in the pedagogical and technological perspectives and a tentative positioning of those teachers who were interviewed in the current study, according to the attitude they showed, which is rooted in the collected data and interpreted by the researcher. The "**Open Innovator**" profile is the one that is probably necessary to apply an open approach that maximizes learning enhancement by both taking all the opportunities and overcoming the challenges. Nevertheless, all

profiles have characteristics that might be empowered and useful to the system.

If the teacher is a "**PT curious**" then his/her knowledge and skills might be improved, but the motivation is important and they might be among those who can make a difference when strategic decisions are necessary. The "**Tech Innovator**" technical competences might be also useful for others, and the same applies for the pedagogical knowledge of "**cautious innovators**". The "cautious innovator" holds a critical view of technology that allows not to put technological tools in the first place and to integrate technology and pedagogy, but is probably to be technically supported.

More specific indicators and parameters might be drawn from the readiness framework and the profile identified, of people involved in open learning projects, in order to build on the relevant strengths and challenges.

How to bridge the readiness gap?

The above mentioned convergence of findings, including the acknowledgment of gaps in readiness for open learning under both pedagogical and technological perspectives, and the perceptions of teachers about the support needed, also results in a question being important to be asked at the University of Parma, and in the context of the UniPR Co-Lab Research Centre: how to bridge the readiness gap to open up education in both the pedagogical and technical perspective and help teachers acquire the necessary competences, without forgetting those challenges and opportunities that they perceive to be affecting their context?

Trying to answer to such a question, by basing on data analysis and discussion, some recommendations emerge, that might be considered already in the frame of the present initiatives, and in a perspective to enhance learning by open approaches in the future.

The research made it possible to consider openness as it is perceived by teachers in the context; the available studies show the failure of generic approaches, top-down and aggressive models (Raffaghelli & Ghislandi, 2013, p. 7) and call for contextualized approaches by institutions (Tammaro et al., 2013).

As it is visualised in the re-drawn readiness framework (Fig. 12), challenges and opportunities as perceived by teachers have to be considered — even if the institution is not at the core of this research as instead teachers are — together with all other gaps of knowledge, competence and skills emerging from the teacher's perceptions in the cognitive, affective and psychometric domains. Moreover, the fundamental view of technology and pedagogy having to be considered together, besides being one of the principles upon which UniPR Co-Lab centre was created, is confirmed by the literature.

In the article about their research on teachers' training on pedagogy (Postareff, Lindblom-Ylänne, & Nevgi, 2007) showed that training is not necessarily connected to better performances in learning if not after a long period, and teachers have identified time as a scarce resources: in such a context, should the University consider specific training on pedagogy as a solution? Would it be instead more appropriate to try and follow different ways?

Another trend that was inferred from the collected data is that those teachers who are working and collaborating inside UniPR co-lab, seem to be better satisfying some needs by a support that is offered on a just-in-time rather than just-in-case basis and that is mainly based on a sort of consultative and conversational framework and on field research, rather than being only relevant to making technology available. The importance of a strategy based on an efficient support is also stated by the experience of the Open University, one of the forerunners on open education, which keeps on being a reference point and an example of best practices when discussing about open approaches. Their strategy has consisted in putting the emphasis, since the beginning, on "supported open learning", by investing on support and on the resources they devoted to it (Littlejohn & Pegler, 2007a).

All this considered, would a **methodological transition** involving paradigm shifts be also necessary?

Would it be appropriate to consider a **reinterpretation and empowerment of the support** that is given to teachers? If that is the case, how?

Methodological transition?

Considering both the perceptions expressed by teachers about the pedagogical gaps to be filled to allow them to enhance learning by technologies, and the characteristics of the specific context, **would a methodological transition be necessary that involves fostering effective forms of blended learning and considering paradigm shifts as the flipped classroom model?** These aspects of a

methodological transition, and their possible application to the specific context of the case, are discussed in the following sections.

Fostering effective forms of blended (open) learning

As it appears from the collected data, the approach to technology enhanced learning at the University of Parma appears in line with what happens and what is perceived in other academic institutions. E-learning and technology enhanced learning seem to be meant as synonyms for different forms of blended learning. The reason for this, considering what emerged from the research, might be that this sounds "less threatening and less risky" (Littlejohn & Pegler, 2007a) in consideration of all the challenges, but it also seems related to a view of learning that would not be enhanced by a total absence of guidance and mediation. As a matter of fact, the experiences about online learning which are reported by teachers show that no guidance, no mediation and no interaction was present when mere distance online learning was adopted. In this view, open educational resources and practices, and the phenomenon of MOOCs are looked at as appendices and complements and blended is seen as a possibility "to overcome specific difficulties in campus-based teaching" (Littlejohn & Pegler, 2007a, pos. 981 of 5257).

Nevertheless, as underlined by Littlejohn & Pegler (2007a) "blended" does not always hold the same meaning and how it is applied is not indifferent to effective learning enhancement.

After acknowledging that

- teachers propend for a blended solution;

- personalization and interaction are necessary for good learning thus difficult for large number of students;
- time and space are important factors to be considered,

then it might be interesting to go deeper into testing and applying those solutions and forms of blending — as "wraparound" activity blending — which might be really effective to enhance learning by opening up education in the technological and pedagogical perspectives. This "implies a seamless integration of intermingling of e-learning and conventional teaching approaches and environments", that "is not usually what is offered in (…) universities" (Littlejohn & Pegler, 2007a, pos 1032 of 5257).

Paradigm shift by a flipped classroom model?

As it has been discussed, some forms of possible changes and shifts in the teacher's role have been mentioned or described as possible ways to enhance learning. However, once again, it is not here simply about recording lectures and making them available to students, but to "integrate" them "into an overall approach, that makes the difference" (Tucker, 2012). It is about starting from the pedagogical approach and using a technology-enhanced approach to design learning, in a way that maximizes the time that the teacher can devote to interactions with students; if approached as a paradigm shift, than it can change learning. Those teachers, who feel they are "caged" by schedules, time issues, transmissive models and sequential materials, might take advantage of such a method that can be facilitated by Open Educational Resources and supported by learning environments as MOOCs, if the stress is put on interaction and participation. As it has

been stated by Schuwer & Janssen (2013, p. 63), the flipped classroom is a model of education that can be supported by OER with the aim to enhance learning by fostering the motivational aspects; moreover, there are examples of MOOCs offered to campus students adopting a flipped-classroom model (Tucker, 2012). The perceptions expressed by some interviewees seem to suggest that a confrontation on experiences that go in this direction might be interesting at the University of Parma, together with experiencing models of flipped classroom (Cockrum, 2013). This would allow to consider "taking advantage of today's innovative technology to relief the teacher from the duty of "knowledge presentation" (Ronchetti, 2010, p. 134)and overcome the "frontal teaching syndrome" (Ronchetti, 2010, p. 135).

Unpack the gap by TPACK model?

As discussed, data show that there is a perceived gap for pedagogical knowledge, together with a gap perceived by some interviewees in technological expertise. Nevertheless, coherently with what expressed by Dudeney et al. (2013), teachers seem not to focus much on technology and not to look at technological expertise as to strictly necessary knowledge and skills; they seem but rather to look at them as to complements that help them during their teaching activities, and to make them freer to decide the best technological solution for the chosen pedagogy. Emphasis on support is acknowledged as making a difference in some effective open learning models, as the Open University, so rethinking support might be a possibility to sustain open approaches. Moreover, some methodological transitions are

acknowledged as possible ways to enhance learning and foster open approaches.

In addition, the analysis and discussion led to the acknowledgement that technology and pedagogy must go hand-in hand when learning enhancement is concerned, which might suggest a to look at the situation from a systematic point of view. A comprehensive and strategic approach was also suggested in the study by (Rajabi & Virkus, 2013) in case MOOCs want to be developed in an academic environment.

The TPACK model by Mishra & Koehler (2006) might be seen as an appropriate way to bridge the readiness gap in a holistic way, without forgetting above mentioned important aspects, and avoid the "T-P" dichotomy. TPACK is the acronym for Teachers' Integrated Technological, Pedagogical and Content. Mishra & Koehler (2006), build on the previous work by Shulman (1986) (Shulman, 1987) and propose in fact their framework as a way to go beyond a simple consideration of content, pedagogy and technology in isolation from one another. As Dudeney — even if talking specifically about language learning — affirms: *"Teachers should be aiming to reach a point where their traditional content and pedagogical knowledge is enhanced by technical knowledge. Perhaps the most important message of the TPACK framework is that teachers remain content and pedagogical experts; technological expertise is an additional dimension which complements rather than replacing or superseding their existing knowledge and skills base."* (Dudeney et al., 2013, pp. 43–44).

Mishra & Koehler (2006) suggest that the changes in the teaching process have not been appropriate to the developments ICT, due to "a tendency to only look at the technology and not how it is used" (op.cit., p. 1017). As a matter of fact, they argue that "merely introducing technology to the educational process is not enough" (op. cit., p. 2017). They underline a lack for theoretical frameworks to guide the necessary integration of technology into the pedagogical view and state:

"Most educational technology research consists of case studies, examples of best practices, or implementations of new pedagogical tools. Of course, good case studies, detailed examples of best practices, and the design of new tools for learning are important for building understanding. But they are just the first steps toward the development of unified theoretical and conceptual frameworks that would allow us to develop and identify themes and constructs that would apply across diverse cases and examples of practice" (Mishra & Koehler, 2006, p. 1018).

Considering the perceptions of teachers as they arise from the collected data, and the arisen needs, it seems that the **framework for teacher knowledge for technology integration** by Mishra & Koehler, (2006, pp. 1020-1048) might be referred to by the University of Parma to face the needs of teachers when technology enhanced learning and therefore also open learning approaches and the organization of MOOCs are concerned. As claimed by Mishra & Koehler (2006, p. 1025)

"Such a framework (…) emphasizes the connections, interactions, affordances, and constraints between and among content, pedagogy, and

technology. In this model, knowledge about content (C), pedagogy (P), and technology (T) is central for developing good teaching. However, rather than treating these as separate bodies of knowledge, this model additionally emphasizes the complex interplay of these three bodies of knowledge.

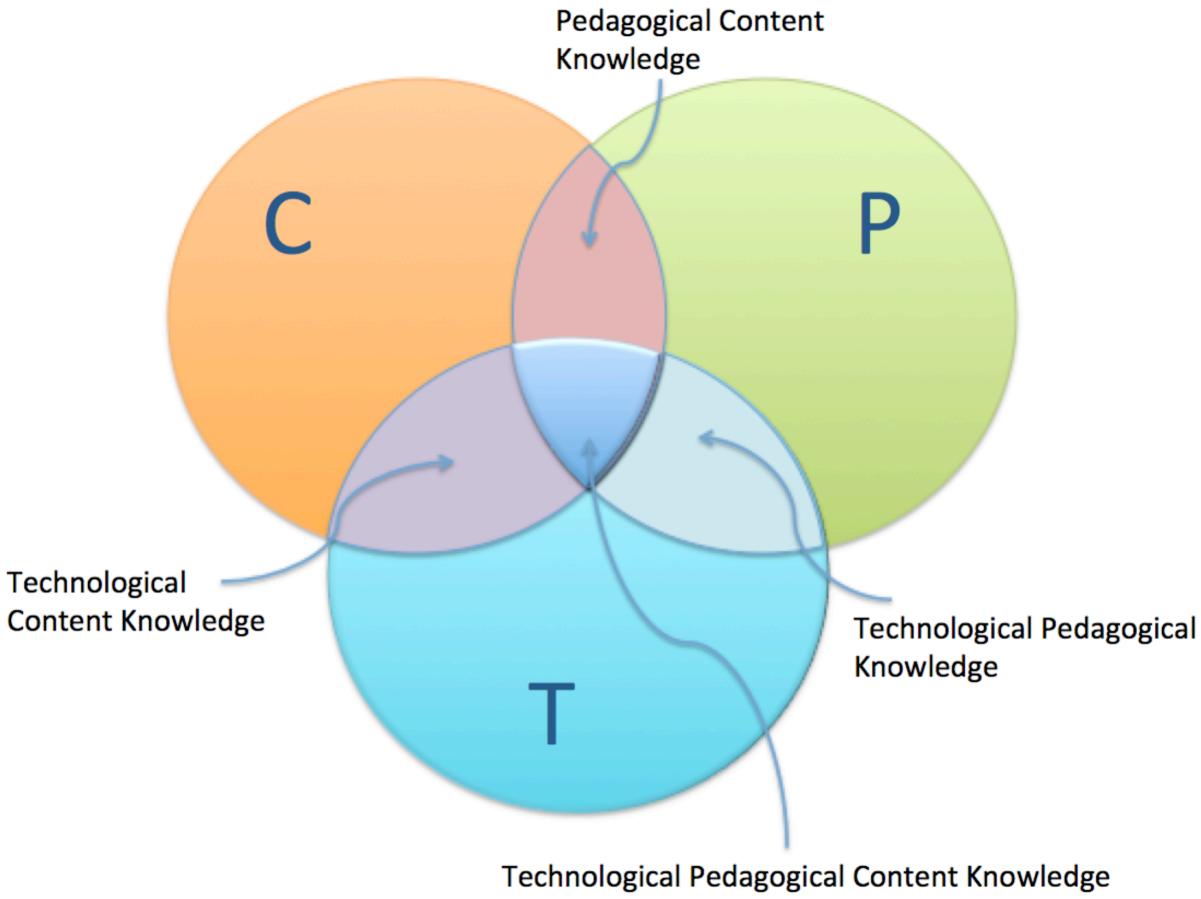

Fig. 14 TPACK framework (Mishra & Koheler, 2006, p. 1025)

In order to be contextualized, the model might be integrated with the elaborated readiness framework (Fig. 12, page 239), so that some indications might be given for aspects to be considered, which are relevant to the technological and pedagogical domain in the specific context. It might be also useful to consider the matrix of the perceptions of teachers about their level of experience/knowledge and

about their curiosity towards technological and pedagogical aspects (Fig. 13, page 241); as already mentioned, the matrix help might inform appropriate decisions and strategies, basing on the context and showing possible teachers' profiles deriving from their perceptions.
However, balance and symmetry are needed among components for the model to be effective (Kinchin, 2012).
In conclusion, there are additional aspects to be considered, as it has been discussed, that will determine the success in enhancing learning by open approaches; nevertheless, starting from teachers' perceptions about their readiness in the technological and technological perspective and adopting an **integrated model where technology and pedagogy go hand in hand,** might be the right start to build support strategies, in a contextualized and holistic way, by building on strengths and weaknesses.

A point of reference along change?

In case a **methodological transition** — involving paradigm shifts — and a **reinterpretation and empowerment of the support** given to teachers were started, a possible challenge might be understanding which are the progresses and steps made along the change process.
The OPAL OEP Framework, which indicates the dimensions to consider to transform education and learning in organisations by OEP, might be a point of reference for educators for the evaluation of the process, to "determine" the "actual status quo and how to improve" the process (Richter & Ehlers, 2012, p. 2). A contextualized version of the framework might be implemented, to reflect the specific features of the context.

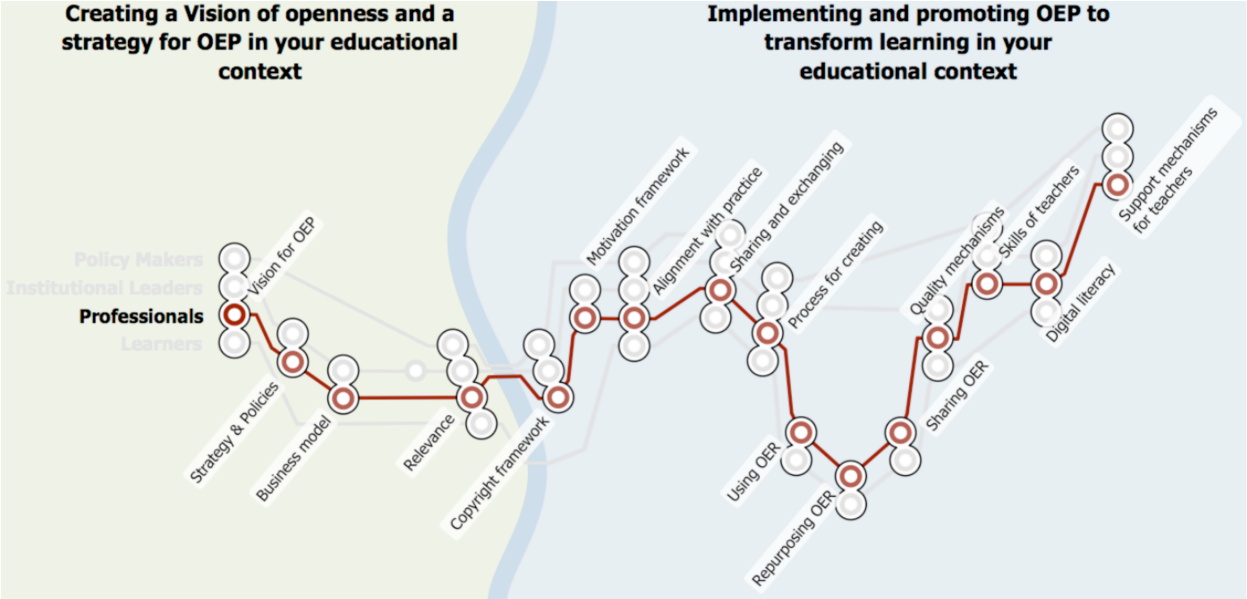

Fig. 15 Possible criteria to evaluate OEP, as suggested by OPAL (Richter & Ehlers, 2012, p. 2) - With thanks to Dipl. Geol. Inga Richter from Simon Kucher & Partners, Strategy & Marketing Consultants, Germany for the authorization to reuse the figure in this master thesis. Any further usage requires her explicit authorization.

Suggestions and proposals for further research

The aims of the study and the limitations that have been mentioned drove the choice of methodology, techniques and sample. The specificity of the case and context suggest that different findings might derive for a study including all the teachers at the University of Parma, that it might be interesting to conduct, to compare those results with the ones of the present study. In spite of this, the questions and topics arose by current research might be useful to consider as a starting point for such a research.

Moreover, as some interviewees have underlined it, it would be interesting to listen to students' voice about the meaning they attribute to open education in terms of enhancing their learning, and explore their perceptions about the implication of adopting Open Educational Practices and MOOCs in the academic environment.

Such a research might also allow for identifying any possible gaps between students' and teachers' perceptions and enrich the portrait.

Exploratory and phenomenographic studies might be chosen as the right methodology — more than studies of students' characteristics only investigating students' approaches to learning — to better know about the learner's experience of specific learning events (Laurillard, 2001). For this reason the collaboration of teachers and the organization of real learning experiences including open learning might be necessary.

As it has been stated in the Introduction, the present research was also considered as necessary because of the proposal that has been made at the University of Parma to possibly adopt open learning and MOOCs in the frame of a project to enhance English Language Learning and to also consider MOOCs in the perspective of a possible solution for further future initiatives. Such a project might therefore be an occasion to build on the findings of the current study and further investigate student's perceptions about real learning experiences involving open learning and MOOC. During such experiences, attention might be given and research might be usefully developed, in a real learning context, on those methodological aspects that have been acknowledged as possibly enhancing learning, as blended approaches, learning analytics and the flipped classroom model.

Reflections

Given time limitations, I have thoroughly thought about writing or not this chapter. Moreover, reflecting on the process also exposes me when I explain things that I might have faced in a different way and that I would change in the future. Nevertheless, I think that such a reflection is both useful for me and for those who read this work to judge it; therefore, I considered it part of the process to allow for judging value in research.

Interesting thus challenging task

This research was an interesting thus challenging task…

…challenging, because of my involvement in the context, that made it even harder the task to minimize bias and subjectivity.

…challenging, because I have a job and a family, and this research had to be set in-between, in the most possible balanced way.

…challenging, because of my relative inexperience with truly qualitative research.

…interesting, as my main research interests are E-learning and educational tutoring and coaching, sharing, e-collaboration and digital libraries for learning.

…interesting as I am Learning Technology Officer at the University of Parma, at the Research Centre UniPR Co-Lab and I collaborate with some of the people that made up the sample. Interviewing them helped me understand their approach and perceptions about aspects that are also part of my job and, apart from the current research, I think this is going to improve my attitude and understanding for the future.

Achievement of objectives and reflections on methodology

Considering my **learning and personal objectives**, considering what I mention above I think I achieved them, and the research being qualitative allowed to learn a lot about the context and the people I got in contact with. As regards the **aims of the study and the objectives**, I think I fulfilled them, both those that I achieved by the literature reviews, and those I achieved by data collection. As a matter of fact I explored the different concepts which were relevant to the study, and data collection made me explore the perceptions by teachers about their uncertainty in pedagogical implications, about their idea of technological implications and needed competences being much related to the idea they have of pedagogy and support. New insights into the challenges they perceived were obtained during the process. For this reason, the findings from the study will also allow me, in my opinion, to be more proactive and proficient in my working activities in the future.

Choosing a qualitative methodology in the end was the right choice, in my opinion, as at this stage I could not have so rich an insight into the teacher's world by adopting a mixed method, and including questionnaires, as I had considered in the beginning. Questionnaires and a mixed method might be suitable in the future in case the research has to be extended to all the teachers at the University of Parma, and to also have a quantitative view of it, but a qualitative research was necessary to first identify the implications, as they are perceived, without pushing answers with a set of choices. Moreover, conversations were very dense and rich in ideas. In spite of regular

practices about open education being not present and of teachers underlying that their knowledge of MOOCs was not sufficient to give some answers, I realised once again what sometimes is forgotten when thinking of professional categories, i.e. that teachers are first of all people: through their sensitivity to some aspects, their experiences and their perceptions of MOOCs without knowing them well I might have the best view, without too many preconceived ideas, of the real implications of adopting open approaches.

The adoption of the constant comparative analysis strategy was suitable to get into data in a progressive way and be immersed and involved in them step by step, letting things flow naturally, and I faced many "ahah moments" during the process. Still, I think that the choice I made not to be forced to offer a theory was the right one; given time constraints and my unfamiliarity with grounded theory. In the end, however, achieving objectives led naturally to implications and a holistic view emerged.

Strengths

Some of the reasons that made the study so interesting also correspond to some of my strengths, being about my knowledge of certain topics and experience in certain environments. I have a Degree in Business and Administration and a Master of Arts in E-learning and I am used to deal with project management and coordination of on-line and blended educational project; this helped me to face the management of the thesis project and having to schedule activities and follow the plan, in spite of my being a part-time student.

Project management and scheduling

I think I kept and attentive and organized attitude towards the research, and I constantly checked real activities against the schedule. On a couple of occasions I felt a need for rescheduling it, but this was just a redefinition of some aspects, and was useful.

Audit trail

Given my methodical nature, following an audit trail and having a critical friend as external editor along the research process was a big help to validate the process. It surely stimulated me to keep accountable written accounts of the whole process carefully. The critical friend provided support, validation and feedback and gave me confidence in my work and abilities in spite of my not being so familiar with qualitative research (Miller, 1997, p. 17) .
I was favoured in the process by my familiarity with software and technological devices, because I managed to carry out a lot of work and operations even in a ubiquitous way, by using the smartphone, tablet and the computer interchangeably. I was able, in my opinion, to set up a research toolkit, together with a workflow, that will be useful for further researches.

Data collection by interviews

I was favoured by being accepted to take part in a project coordinated by the Istituto di Tecnologie Didattiche (ITD) of the Centre of National Researches (CNR) in the same period of my research. I had the occasion to work with experienced researchers, and I learnt a lot from them and from the researches we carried out. This helped me in data

collection by interviews and some of the procedures and tools — or ways of using them — were improved thanks to such a confrontation.

Weaknesses

There are things I was weaker at, and things I would do in a different way, if I were to go back in time.

Focus

"**Focusing**" is in general one of things I am less skilled at. If I went back in time, I would immediately decide for a more restricted study, without thinking too big, as I risked to do in the beginning.

Project management and scheduling

In the beginning I made a mistake due to my misunderstanding of the nature of the meetings that were scheduled during the semester. As a matter of fact, in the beginning I confused "seminar" with "tutorial session", and therefore thought that thesis seminars would be ways for us to learn how to do certain things: it was also for this reason that I waited before taking some of the decisions and some of the responsibilities about my thesis.

Literature review

As regards **the literature review**, I would try and select more since the beginning. I devoted too much time in the beginning to readings that in the end revealed not to be useful to the purpose of the study. Reading is time demanding, even more when time is a critical issue as in my case. As a matter of fact at the beginning I encountered difficulties, that are considered common with literature review when

facing a dissertation, which is more complex than for papers, and I wished I had received training about it (Randolph, 2009); consulting guides and literature helped.

Data collection by interviews

As it is documented in the memo references with impressions and feelings that I wrote after each interview, I made mistakes during the **interviews**, and in the beginning it was difficult not to intrude and letting the conversation flow; nevertheless, writing down notes helped a lot to improve the process and in the end, looking back at it, I was satisfied of the conversations flowing fluently.

I think that the timing, given my constraints, was quite correct. If I were back in time, though, I would try and start before with the authorization request, to be able to start with interviews before. I felt that my difficulties in focusing influenced it, because I wanted to be precise and detailed in the request, but I might be more general without problems in the request and then I would however have the occasion to be more focused in the interviews' introduction.

In the end, one of the interviews was carried out later than it was planned to, because of commitments by the interviewer. I think it was right to add it, as it gave much additional relevant data for the analysis, but it made the whole process a bit more challenging, considering the strict schedule.

Analysis

Now that I have finished the analysis, I am quite satisfied about the process flow (that I presented graphically with a map in the

methodology chapter), but it was challenging to get to define some of the steps in terms of tools. For example, one of my main difficulties, that is also emerging from my research logs along the whole process, was about the definition of “portraits”. Some difficulties might also depend on the language, but in the end, instead of devoting a lot of time trying to understand what portraits might be, I could just write what they were being in my research and how I used them, as I did in the end, and this would clarify things sooner.

Kit of tools to support the research

I would test more thoroughly BEFORE deciding to use it the system I have chosen to manage references and bibliography, as it was a useless loss in time on some occasions having to check and being afraid of having lost highlights and annotations and having to deal with developers, even if they were kind and helpful. Then, as I decided to use a combination of them to take advantage of strengths from both and minimize weaknesses, I would also try and solve the issues that apply to Zotero synchronization. Now that I have tried two software for qualitative data analysis, if I had to go back in time I would immediately choose only one and I would know which strategy to adopt, after testing it. As a matter of fact, I think that in the end it was the right strategy to only use the software in the initial coding phase to have a base of referenced quotes from transcriptions, which were crossed with codes. The risk would be in fact of over relying on the software to carry out the analysis, while it was me who had to analyse!

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Appendices

APPENDIX NO. 1 – Request for authorization to carry out the research at the University of Parma (Italian language) – sent to the Rector and Vice Rector on 3rd March 2014.

APPENDIX NO. 2 – Introductory e-mail: example of the written request to participate in the interview (Italian language) that was sent on 13th March to people who were asked to be interviewed.

APPENDIX NO. 3 – Informed consent form that was delivered to each interviewee – a copy of the consent form was signed by each interviewee was kept in the research documents.

APPENDIX NO. 4 - Example of the search for entries in the research log labelled by "DILL thesis" tag.

APPENDIX NO. 5 – Interview table, which was created as a unique point, where the details about the interviewees/interviews were collected; it includes the links to all the relevant files, which were written/created for each interviewee.

APPENDIX NO. 6 – The interview introduction guide that was used as a reference for the introduction of each interview.

APPENDIX NO. 7 - Interview guide for semi-structured interview – VERSION NO. 3 (first release for pilot interview) – 17th March 2014.

APPENDIX NO. 8 - Interview guide for semi-structured interview – VERSION NO. 4 (final release after pilot interview) – 25th March 2014.

APPENDIX NO. 9 – Example of a part from a transcription with initial coding, observations and notes (transcription is in Italian).

APPENDIX NO. 10 - Example of MEMO reference (impressions and feelings).

APPENDIX NO. 11 - Example of FACTUAL PORTRAIT.

APPENDIX NO. 12 - Example of "PORTRAIT with judgements"-

APPENDIX NO. 13 - Initial framework to refer to (as a list of concepts and directions) for analysis about readiness for open learning and MOOCs.

APPENDIX NO. 14 - Extended framework: Teacher's readiness for open learning and MOOC.

APPENDIX NO. 15 – Example of a cross-memo written along the analysis process.

APPENDIX NO. 16 – A concept map created to connect the written cross-memos for category creation and linking.

APPENDIX NO. 17 – A concept map that shows how different cross-memos (and relevant concepts/themes) were integrated in a category.

APPENDIX NO. 18 – GANTT chart for the research schedule

APPENDIX NO. 1 – Request for authorization to carry out the research at the University of Parma – sent to the Rector and Vice Rector on 3rd March 2014

Al Magnifico Rettore
Prof. Loris BORGHI
Università degli Studi di Parma

e, p.c.

Prof. Giovanni FRANCESCHINI
Pro Rettore Vicario

Chiar.mo Prof. Borghi,

in qualità di **studente del Master internazionale in apprendimento con le biblioteche digitali DILL (Digital Library Learning)** tenuto congiuntamente dall'Università degli Studi di Parma, dal College of Applied Sciences di Oslo (HioA) e dalla Tallinn University, ed essendo io al tempo stesso dipendente di codesta Università, all'interno del Centro UniPR CO-Lab (che si occupa di ricerca nel campo dell'innovazione didattica e delle pubblicazioni digitali), ho scelto quale tema di approfondimento per la tesi finale di Master **i MOOC (Massive Open Online Courses), le Risorse educative aperte ed il loro possibile ruolo nel miglioramento dell'apprendimento**. Questo mi sembra possa essere coerente anche con la direzione nella quale mi pare stia andando l'Ateneo con il Progetto "UniPR e E-Learning" nell'ambito della programmazione triennale 2013-2015 – alla quale sono stata chiamata a partecipare su richiesta della Prof.ssa Ossiprandi. Il progetto che si riferisce all'apprendimento dell'inglese, ad esempio, prevede di valutare, tra gli ambienti e le metodologie possibili, i MOOC e l'uso delle risorse educative aperte.

Con lo sviluppo delle tecnologie dell'informazione e della comunicazione, e in particolare con le connessioni consentite dalla rete, da qualche tempo si osserva un cambiamento delle condizioni nelle quali avviene l'apprendimento anche nelle Università.
Si parla di apertura da diversi anni, e il movimento delle **Open Educational Resources (OER)** dai primi anni 2000, e i **MOOC** più recentemente, sono dimensioni di questo concetto di apertura.
Le **Open Educational Resources sono risorse per l'apprendimento**, su qualsiasi supporto e in qualsiasi formato, **rilasciate con una licenza aperta che ne consente l'uso, ma anche il riutilizzo, la modifica e la distribuzione con o senza limitazioni**. Possono essere corsi interi, moduli, materiale didattico, guide, libri di testo, video, articoli, materiali interattivi, giochi, banche dati, applicazioni, materiali di valutazione.
I **MOOC** sono **corsi destinati alla partecipazione su larga scala ad iscrizione apert**a, nati nel 2008 negli Stati Uniti e molto conosciuti a livello internazionale dal 2012. Diverse Università stanno iniziando a proporre corsi in questa modalità a fianco di iniziative tradizionali. Il Miur stesso in questo periodo sta lanciando un'iniziativa legata alla creazione di MOOC (https://www.talentitaly.it/la-sfida-sulla-open-education).
Le tecnologie e questi trend fanno riflettere sul concetto di apertura sotto diversi punti di vista: accesso aperto, struttura aperta dei corsi, contenuti aperti, collaborazione, open data, codice aperto.

Come ho evidenziato nella documentazione preparata per il progetto "UniPR e E-Learning", l'innovazione nell'educazione è una priorità di molte iniziative connesse **alla strategia Europe 2020**; la

Comunità Europea — con **l'iniziativa "Opening up Education" 2013** — sostiene il miglioramento dell'apprendimento e lo sviluppo di competenze adeguate attraverso l'uso delle tecnologie; in particolare, gli obiettivi specifici individuati riguardano l'innovazione delle pratiche di insegnamento e valutazione supportati dalle tecnologie digitali, e la creazione di contenuti digitali aperti, Open Educational Resources (OER).

Il **rapporto NMC Horizon Report** — fonte autorevole di informazioni per chi si occupa di formazione che indica gli orientamenti chiave nel campo dell'apprendimento supportato dalle tecnologie — ha individuato per il 2013 e il 2014, tra gli orientamenti previsti in ambito educativo a breve termine, i modelli collaborativi e le risorse educative aperte.

E' in tale contesto che propongo la mia ricerca, che ha lo **scopo** di **stabilire che ruolo possano avere le risorse educative aperte e il fenomeno dei MOOC in relazione alla qualità dell'apprendimento all'Università di Parma**, e a **identificare le implicazioni del concetto di apertura in un contesto di apprendimento**.
La ricerca punta in particolare a **esplorare le percezioni di coloro che sono attivamente coinvolti nel processo di apprendimento (i docenti)** e quindi idealmente possono essere coinvolti nell'uso o creazione di Risorse Educative Aperte e nei MOOC.
La **metodologia** di ricerca —qualitativa — include **focus group e una serie di interviste** a docenti coinvolti nelle strategie didattiche e tecnologiche dell'Ateneo, oltre a interviste a docenti dei due dipartimenti coinvolti nelle attività del Centro UniPR Co-Lab, il Dipartimento di Ingegneria dell'Informazione e il Dipartimento A.L.E.F.

Richiedo pertanto l'autorizzazione a procedere con tale ricerca all'interno dell'Ateneo prendendo contatto gli interessati e procedendo con le tecniche previste alla raccolta dei dati.

Ringraziando per l'attenzione, e confidando in un accoglimento della richiesta, porgo distinti saluti.

Sara Valla

Parma, 3 marzo 2014

APPENDIX NO. 002 - INTRODUCTORY E-MAIL

Example of the written request to participate in the interview (Italian language) that was sent on 13th March to people who were asked to be interviewed

Gent.mo _____,

ho avuto l'autorizzazione a svolgere in Ateneo una ricerca per la tesi di Master DILL che consegnerò il prossimo giugno.
Il focus di tale ricerca è la percezione di coloro che sono attivamente coinvolti nel processo di apprendimento - i docenti - rispetto all'apprendimento supportato dalle tecnologie all'Università di Parma, ed alle relative implicazioni per la qualità della formazione.

La metodologia di ricerca che ho scelto - qualitativa - include interviste a docenti che avrei identificato - soprattutto nell'ambito di Colab - considerando l'interesse alla partecipazione a ricerche e sperimentazioni didattiche supportate dalle tecnologie.

Le chiedo quindi se pensa che potrebbe darmi la Sua disponibilità per un'intervista aperta, che avrebbe per lo più la natura di una conversazione, al fine di raccogliere la Sua esperienza; in tutto prevedo un impegno massimo di un'ora.

Ho previsto di iniziare dalla fine di marzo per terminare le interviste entro aprile, e le chiedo, nel caso sia disponibile, di propormi qualche alternativa per poterLa incontrare in tale periodo.

La ringrazio sin da ora, in attesa di un Suo riscontro, e porgo cordiali saluti.

Sara Valla

APPENDIX NO. 3 – Informed consent Form that was delivered to each interviewee – a copy of the consent form was signed by each interviewee was kept in the research documents.

Informed Consent Form

Research “Is UniPR ready for MOOP?”

Valla Sara - Master’s Thesis - International Master’s DILL (Digital Library Learning)

Università degli Studi di Parma, College of Applied Sciences - Oslo (HioA), Tallinn University

The research focus is on the perceptions of those who are actively involved in the learning process – the teachers – when technology enhanced learning is involved at the University of Parma – and on the relevant implications for the learning quality.

The research methodology includes interviews to those teachers who have been identified among those sharing UniPR Co-Lab values about technology enhanced learning and researches on innovation in learning.

The scope of the research is trying to explore the role of open educational resource and of the MOOC phenomenon in relation to learning quality at the University of Parma and trying to identify possible implications of the openness concept in an academic learning context.

I have been duly informed on the purpose and details of this study during the interview’s introductory conversation.

I have read and understood the informed consent and have had the opportunity to ask questions about my participation.

I understand that I am under no obligation to take part in the study

I understand that I have the right to withdraw from this study at any stage for any reason, and that I will not be required to explain my reasons for withdrawing.

I understand that all the information I provided will be treated confidentially and will be kept anonymous and confidential to the research team unless otherwise stated.

a) I would prefer my identity to be kept anonymous in analysis and discussion YES □ NO □

b) I agree that my profile is published among participants to the study YES □ NO □

I agree to participate in this study

Name _____

Signature _____

Date _____

DAYONE

Tags: Dill thesis
54 Entries, 1 Photos

"APPENDIX NO. 4 - Example of the search for entries in"
"the research log labelled by “DILL thesis” tag"

giugno 2014

SAB 07 (2)

Up-to-date to Pat
Hi Pat, how are you? And Colin?Today it is terribly hot! Add to this I am really tired, and I have the…
17:56 • Strada Grassi 2–22, Vicofertile, Emilia-Romagna, Italia • 30° Mostly Sunny • Dill thesis

a couple of doubts about the analysis/discussion/conclusion parts.
I have re-checked other thesis and the name of categories in the analysis is always the same as th…
17:56 • Strada Grassi 2–22, Vicofertile, Emilia-Romagna, Italia • 30° Mostly Sunny • Dill thesis

MER 04

Struttura analisi dati - dubbi
Ewelina chiama il cap data analysis and discussion (ma io ho anche il site...)
Quindi non faccio rif ai findings? findingsData analysisDiscussion ????cosí? Consonnychuama dp…
Dill thesis

MAR 03 (2)

Messaggio da Pat - methodology
Just to reassure your methodology is well structured, thorough, your approach justified thoroughly,…
12:07 • Strada Grassi 2–22, Vicofertile, Emilia-Romagna, Italia • 20° Mostly Sunny • Dill thesis • Metodologia

Feedback da Pat per lit rev
I have tracked changes on your lit review contents. The topics are logical and coherent, good. Don…
10:59 • Strada Grassi 2–22, Parma, Emilia-Romagna, Italia • 19° Mostly Sunny • Dill thesis

maggio 2014

SAB 31

Mail a Pat - update 31st May
(…)
This e-mail is just to reassure you (and a bit an attempt to reassure myself) that I am going on....I f…
Strada Grassi 2–22, Vicofertile, Emilia-Romagna, Italia • 22° Mostly Sunny • Dill thesis

SAB 24

Introduzione - Corretto tutta l'intro, integrata e mandata a Pat
Dear Pat,
I have worked on the intro, today, as I perceived that it was really important to have it as a referenc…
Strada Grassi 2–22, Vicofertile, Emilia-Romagna, Italia • 19° Mostly Clear • Dill thesis

VEN 23

Readiness framework as developed after data collection/analysis
Strada Grassi 2–22, Vicofertile, Emilia-Romagna, Italia • 25° Partly Cloudy • Dill thesis

GIO 22

Thesis, what is left? thursday 22nd May
Analysis
create cross memos to let any categories emerge:this is the longest and most important stage…

INTERVIEWEE (NAME, FAMILY NAME)	CODE	DOMAIN / SUBJECT	NATIONALITY	NO. OF YEARS - TEACHING	NO. OF YEARS AT UNIPR	MEETING APPOINTMENT	time	INTERVIEW REAL DATE	Auth for profile publication?	Anonymous in data analysis?
MARIA VALERO GISBERT	MV	LANGUAGE, TRANSLATION AND LITERATURE / SPANISH LANGUAGE AND TRANSLATION	SPANISH/ITALIAN	24	12	18/03/14	12.00	18/03/14	SI	NO
GILLIAN MANSFIELD	GM	LANGUAGE, TRANSLATION AND LITERATURE / ENGLISH LANGUAGE AND TRANSLATION	ENGLISH/ITALIAN	40	14	08/04/14	9.00	08/04/14	SI	NO
ANDREA LASAGNI	AL	ECONOMICS, POLITICAL ECONOMY	ITALIAN	9	9	25/03/14	17.00	25/03/14	SI	NO
MARIA CRISTINA OSSIPRANDI	MCO	VETERINARY, MICROBIOLOGY AND IMMUNOLOGY	ITALIAN	9	9	26/03/14	8.55	26/03/14	SI	NO
FRANCESCO ZANICHELLI	FOZ	INFORMATION ENGINEERING, OPERATING SYSTEMS, MULTIMEDIA SYSTEMS	ITALIAN	19	19	01/04/13	10.30	01/04/13	SI	SI
FRANCESCA ZANELLA	FZ	HUMANITIES	ITALIAN	15		15/04/14	9.00	15/04/14	SI	NO
LUCA VELTRI	LV	INFORMATION ENGINEERING	ITALIAN	15		28/04/14	17.00	28/04/14	SI	NO
GIOVANNI FRANCESCHINI	GF	INFORMATION ENGINEERING	ITALIAN			e-mail sent - never answered				
GIANNI CONTE	GC	INFORMATION ENGINEERING	ITALIAN			e-mail sent - never answered				
ENRICO MARTINEZ ?	EM	LANGUAGE, TRANSLATION AND LITERATURE	ITALIAN			available if necessary				

LINK TO AUDIO FILE	LINK TO MEMO FILE	LINK TO PROFILE	LINK TO TRANSCRIPTION	LINK TO TRANSCRIPTION INITIAL CODING	LINK TO PORTRAIT	LINK TO PORTRAIT WITH JUDGEMENTS
int_MV_18_mar_2014_13_56.mp3	MV_memo_impressions_feeling	MV_profile	MV-transcription	MV_transcription_initialco	MV_portrait_en	MV_portrait_eng_judgements
INT_GM_8-apr-2014_09_36.mp3	GM_memo_impressions_feeling	GM_profile	GM_transcription	GM_transcription_initialco	GM_portrait_en	GM_portrait_eng_judgements
int_AL_25_mar_2014_17_04.mp3	AL_memo_impressions_feelings	ALprofile	AL-transcription	AL_transcription_initialcodi	AL_portrait_eng	AL_portrait_eng_judgements
int_MCO_26_mar_2014_08_56.mp	MCO_memo_impressions_feelin	MCO_profile	MCO-transcription	MCO_transcription_initialc	MCO_portrait_e	MCO_portrait_eng_judgements
int_fz_01_apr_2014_10_45.mp3	FoZ_memo_impressions_feeling	FoZ_profile	FoZ-transcription	FZ_transcription_initialcodi	FoZ_portrait_en	FoZ_portrait_eng_judgements
int_faz_15_apr_09_33	FaZ_memo_impressions_feeling	FaZ profile	FaZ-transcription_2	FaZ_transcription_initialco	FaZ_portrait_en	FaZ_portrait_eng_judgements
int_LV_28_apr_2014_16_53.mp3	LV_memo_impressions_feelings	LV profile	LV-transcription	LV_transcription_initialcodi	LV_portrait_eng	LV_portrait_eng_judgements

APPENDIX NO. 6 – The interview introduction guide that was used as a reference for the introduction of each interview

INTERVIEW INTRODUCTION GUIDE

Version no. 002 – 17th March 2014

Introduction

In the past twenty-five years the development of information and communication technologies brought about changes in the landscape where educational institutional operate, including University. In such a panorama, and in my research I am going to investigate your perception as a teacher at the University of Parma about teaching in the academic world where technology and Internet might enhance learning (and improve learning quality).

You have been chosen as a **teacher**, first of all, that is to say a **facilitator, a promoter of learning**; and I have identified you **share some of the values** of our Research Centre (UniPR Co-Lab), e.g. the **necessity to concentrate first of all on learning (and learning needs) when talking about e-learning/technology enhanced learning/online learning.**

I will focus on **two dimensions: pedagogy and technology**, and we will talk about knowledge, feelings, competences and skills related to these two dimensions.

I will ask questions, but I would like this interview to look more like a conversation. There aren't any correct or wrong answers. By this interview, I would like to have your **OPINION** and you to share your experience, basing on your professional/academic experience as a teacher. I am first of all here to **LISTEN TO YOU.**

In case you wish to make any bibliographic reference to support your opinion I will collect it.

Your respondent's identity will not be revealed in any case in the study, unless you expressly asked for it.

As anticipated I am recording the interview and take some short notes during the interview just for my records. Do you confirm you agree?

APPENDIX NO. 7 - Interview guide for semistructured interview – VERSION NO. 3 (first release for pilot interview) – 17th March 2014

LEARNING (FACILITATING LEARNING			**NOTES (this column is useful now to reflect on why the question is asked); afterwards during the interview this blank space will be there for notes**
A1	When did you start teaching? Have you always been teaching here at UniPR or somewhere else? Which courses/topics do you teach? (L)		*These questions are general ones and are useful to create a profile of the interviees. It is important to record the domain and the courses taught. It is important to know if he always taught at UniPR to know if he has terms for comparison with other realities*
A2	Think about your way of teaching. How do you organize/perform it? Any specific strategies? (P)		*Asking this question at the beginning is useful to understand his view of learning and to consider style and strategies when considering TEL, OE and MOOCs*
TECHNOLOGY ENHANCED LEARNING (online learning, e-learning…)			
B1	Has the **internet** or have any **information and communication technologies changed** your **way of teaching** during time (**methods and activities**)? (P + T)	**(Yes)** If it changed, how? If there are differences: which ones? **(No)** why do you think they didn't?	*This is both about technology and pedagogy and their interacting with learning. It is a sort of confirmation of the choice of intervieews as teacher who share certain values.*

B2	If you think of your specific experience, do you think/feel that the internet and information and communication technologies have changed the way your **students** learn? (*improvement*?) Did this influence you? (P + T)	**(Yes)** If yes, how? Benefits? Challenges? if… improved,,, Which are the technologies that you think have improved students' learning? **(No)** Why do you think they didn't?	*As learners are not involved in the research, here the feeling of teachers is asked. Moreover a judgement is asked about any changes in student learning influencing the teacher*
B3	Do you think that the use of information and communication technologies in learning changes something when **collaborative learning** is concerned? (P)	**(No)** why? **(Yes)** why and how?	*The question specifically tries to investigate the sociological aspect of TEL (collaboration) as perceived by teachers*
B4	Do you think that **specific knowledges, skills and competences are required to a teacher to teach using technologies**? K(C) + C(P) + F(A)?	**(Yes)** If yes, which ones? Let's consider them separately… knowledge? Competences and skills?	*Here the different Bloom domains are touched to understand which are the perception of the implications of TEL on the different domains (cognitive, affective, psychomotric)*
B5	When you think of technology enhanced learning at the **University of Parma**, which **experiences** do you know/ are you aware of/ you heard of?		*This question is asked to know whether there is a perception of experiences being present/ communicated.*

B6	Do you know of any / Are there any **STRATEGIES or rules or guidelines** by the University of Parma about (e-learning, online learning, TEL)? (S)	**(Yes)** Which ones? **(No)** Why do you think there aren't? Do you think that strategies/rules/guidelines would be useful?	*This questions is asked because it will be considered together with the background and document analysis about strategy being communicated.*
B7	Is there **any support to teacher** who use / for using technologies in teaching at the University of Parma? (SU)	**(Yes)** Which kind of support? **(No)** Why do you think there isn't? Do you think that the University might do something to support you and other teachers in case you wanted to start a MOOC? How would you expect being supported?	*This questions is asked because it will be considered together with the background and document analysis about support being present/communicated.*
OPEN LEARNING			
C1	Ever you **ever heard about Open Learning, Open Education, Open Educational Resources**…?? (OE)	**(Yes)** What does it mean to you? Did you ever experience it in your teaching experience? →**(Yes)**How? Which is the reason why you decided to do? How was the experience for you? Did it change something? Benefits? Challenges? How did you perceive the experience was for your students? **(No)** when I talk about Open learning and Open Educational Resources I mean…	*This is the introductory question to start talking about open learning. The sequence of questions depends a lot on the first answer and the direction will be given by the respondent.*

C2	When you think of a **potentially "open" learning experience/course**, and of the concept of openness of a course**, what do you think of in terms of different possibilities/dimensions for opening up learning**? **Which aspects of learning might be open?** (OE)	How do you feel about it if you think of your specific course/domain/experience?	*This question is asked to explore the teacher's perception of openness.*
C3	Considering that when we talk about openness the opportunities are many (open access, open structure, open content and OER, open data, open accreditation, open collaboration…) if you reflect on your way of teaching, do you feel you have **ever experienced/experimented any type of openness during you experience** as a **teacher** in your courses?	**(Yes)** Which ones? Why did you decide to do it? **(No)** any specific reason why you didn't?	*Even if he/she answered that he never heard about Open Learning, open education, and open educational resources, he/she might have experienced some forms of openness without being aware that it is about open learning. This is the reason why this question is asked after briefly listing the possible dimensions of openness.*
C4	In comparison to online learning / Technology enhanced learning in general, do you think there are **any further (or different) pedagogical aspects to be considered when talking about open education?** (P)	**(Yes)** Which ones? Are **specific pedagogical knowledges, skills and competences required?** K(C) + C(P) + F(A)?	*This questions is asked to understand whether the respondent associates open educational resources to different pedagogical approaches in comparison to technology enhanced learning in general*
C5	In comparison to online learning/TEL, do you think there are any **further (different) technological aspects to be considered when talking about open education? (T)**	**(Yes)** Which ones? Are **specific technological knowledges, skills and competences required?** K(C) + C(P) + F(A)?	*asked to understand whether the respondent associates OER to different technological aspects in comparison to TEL*

C6	Do you believe the use or reuse of **open educational resource**s and an open approach to course would require modification in your pedagogical approach? (P) Might it improve learning / learning quality? When I talk about Open Educational Resources, I refer to "teaching, learning and research materials, in any digital format and medium, that reside in the public domain or are released under an open intellectual property license, permitting free and no-cost access, use, adaptation and re-purposing by others with no or limited restrictions". Open Educational resources might include full courses, course materials, modules, textbooks, streaming videos, tests, materials, or techniques used to support access to knowledge." In this study we decided not to consider software and tools to focus more.	**(No)** Why? how would you apply the same methods in such a context? **(Yes)** Which ones, if you think of your discipline?	*This question is asked to understand whether the use of OER and their feature of being reusable and repurposable is considered as a possible hint for a change in learning aspects.* *Both in case he/she stated he/she already heard about open education and OER, I define here what it is about, to make the following part of the conversation more clear about what we are meaning.*
C7	In particular *(it is somehow related to the previous one)* do you think that **the use of open education in learning changes something when collaborative learning** is concerned? (P)	**(No)** why? **(Yes)** why and how?	*This question is asked to understand whether the use of OER and their feature of being reusable and repurposable is considered as a possible hint for a change in learning aspects which may possibly include involving students in the production of resources*

C8	Thinking of your specific teaching experience, and in a perspective of improving learning, for which reason you might choose or not to **use** open educational resources in your course/s?		*I refer to teacher's USE, here*
C9	Thinking of your specific teaching experience, and in a perspective of improving learning, for which reason you might choose or not to **create/release contents and educational materials open online, sharing them with students and other teachers?**		*I refer to teacher's CREATION, RELEASE AND SHARING here (or co-creation with students if he considered it)*
C10	Do you know whether the University of Parma offers access to open courses in any way? (S)	**(Yes)** could you give any examples you are aware of? **(No)** which do you think might be the reason why?	*This question is asked to know whether there is a perception of experiences being present/ communicated.*
C11	Do you know of any / Are there any STRATEGIES or rules or guidelines by the University of Parma about the use and or creation of open education / open educational resources? (S)	**(Yes)** Which ones? **(No)** Why do you think there aren't? Do you think that strategies/rules/guidelines would be useful?	*This questions is asked because it will be considered together with the background and document analysis about strategy being communicated.*
C12	Is there any support to teacher who use / for using or creating open educational resources / open learning methods at the University of Parma? (SU)	**(Yes)** Which kind of support? **(No)** Why do you think there isn't? Do you think that the University might do something to support you and other teachers in case you wanted to start a MOOC? How? would you expect being supported?	*This questions is asked because it will be considered together with the background and document analysis about support being present/communicated.*

C13	Do you know of any learning or training initiatives organized at the University of Parma for those who use/want to use open educational resources? (SU)	**(No)** which do you think might be the reason why? Do you think that learning/training initiatives would be useful? Would you participate in them? Why? **(Yes)** could you give any examples you are aware of? What is your opinion?	*This questions is asked because it will be considered together with the background and document analysis about training being present/communicated.*
MOOC			
D1	Have you ever heard about MOOC? (M)	**(No)** **MOOCs** are Massive Open Online Course, that is coursed which are delivered on the web for a participation on a large scale, with open access (free and without any restrictions). MOOCs started in 2008 in the USA and became largely known since 2012. Thinking of such distinctive characteristics *that is mainly that it is about courses - structured even if in a flexible way - open to a large number of students and freely open to anyone willing to enrol* what is your feeling about it if you think of your experience as a teacher and higher education?	*This is the introductory question to start talking about open learning. The sequence of questions depends a lot on the first answer and the direction will be given by the respondent.*

		(Yes) How did you hear about it? Which is your feeling aout this phenomenon from your teacher's perspective and in your specific domain? **(Yes)** Did you ever take part in any MOOC as a student? →**(Yes)** Why did you decide to participate? Do you think it would be important for a teacher to participate in a MOOC as a student? Why?	*I find it important to ask if he/she ever participated in a MOOC at least as a student, to understand whether the perceptions depend on experiences of on preconcepts.* *Important to understand the level of interst and curiosity and understand why he/she has considered MOOCs, in which perspective*
D2	*(if he knew: no further specification)* *(if he did not know: considering the main features of MOOCs – massive – open – online…)* Do you think that your topic/discipline/domain would be suitable to approach by massive open online courses?	**(No)** why? **(Yes)** why and how?	*Even in case he/she never heard about MOOCs he/she might have an opinion about his/her discipline being suitable to be faced in a massive, open, online way…First the explanation, definition, then the question.*
D3	In comparison to online learning / Technology enhanced learning in general, do you think there are any further (or different) pedagogical aspects to be considered when talking about MOOCs? (P)	**(Yes)** Which ones? Are specific pedagogical knowledges, skills and competences required? K(C) + C(P) + F(A)?	*asked to understand whether the respondent associates MOOCs (after a list from the interviewer of the main features –above) to different pedagogical approaches in comparison to TEL and OL/OE.*

D4	Do you think that MOOCs change something when collaborative learning is concerned?	**(No)** why? **(Yes)** why and how?	*The question specifically tries to investigate the sociological aspect of MOOCS (collaboration) as perceived by teachers*
D5	Do you think there are pedagogical modifications to be foreseen and considered (*keeping in mind that it is about courses - structured even if in a flexible way - open to a large number of students and freely open to anyone willing to enrol)?* Would organizing a MOOC require modification in your pedagogical approach? (P)	**(No)** Why? how would you apply the same methods in such a context? **(Yes)** Which ones, if you think of your discipline?	*The question specifically tries to explore if the teacher perceives any specific necessary pedagogical modifications to start and use MOOCs*
D6	Thinking of your specific teaching experience, how do you think your students' learning quality might be affected by participation in massive open online courses (MOOCs)?		*First I asked if he/she thinks it is necessary to change methods, now I refer to quality and learning improvement*
D7	In comparison to online learning / Technology enhanced learning in general, do you think there are any further (or different) technological aspects to be considered when talking about MOOCs? (T)	**(Yes)** Which ones? Are specific technological knowledges, skills and competences required? K(C) + C(P) + F(A)?	*This questions is asked to understand whether the respondent associates MOOCs to different technological aspects in comparison to technology enhanced learning in general and open learning.*
D8	If you think of MOOCs, do you think of any specific platform, or any tool, software that can be used inside a MOOC?		*asked to explore whether the respondent associates MOOCs to any technological tools/softwares/platforms (and therefore the perception of innovation of MOOCs is more about technology or pedagogy)*

D9	Thinking of your specific teaching experience, and in a perspective of improving learning, for which reasons you might consider (or not) to organize or actively participate in teaching in a MOOC?		*This questions is asked to explore whether the teacher would feel the need to teach in MOOCs*
D10	Would you feel immediately prepared, under a pedagogical point of view, to experiment massive open online courses?		*The approach and way of asking the question are different depending on what he answered before; moreover, it is important to obserb if he/she looks uncertain, unsure and so on, it it seems he is thinking about difficulties without expliciting it…*
D11	Would you feel immediately prepared, under a technological point of view, to experiment massive open online courses?		*The approach and way of asking the question are different depending on what he answered before; moreover, it is important to obserb if he/she looks uncertain, unsure and so on, it it seems he is thinking about difficulties without expliciting it…*

D12	***don't ask If*** *he/she has already answered about it answering to previous questions -* ***don't ask if*** *he/she never heard about MOOCs, as it would be probably useless* As far as you know, are there any experiences of massive open online courses through the web (MOOC) at the University of Parma?	**(No)** which do you think might be the reason why? **(Yes)** could you give any examples you are aware of?	*This question is asked to know whether there is a perception of experiences being present/ communicated.*
D13	Do you know of any / Are there any STRATEGIES or rules or guidelines by the University of Parma about MOOCs? (S)	**(Yes)** Which ones? **(No)** Why do you think there aren't? Do you think that strategies/rules/guidelines would be useful?	*This questions is asked because it will be considered together with the background and document analysis about strategy being communicated.*
D14	Is there any support to teacher who want to organize MOOCs at the University of Parma? (SU)	**(Yes)** Which kind of support? **(No)** Why do you think there isn't? Do you think that the University might do something to support you and other teachers in case you wanted to start a MOOC? How would you expect being supported?	*This questions is asked because it will be considered together with the background and document analysis about support being present/communicated.*
D15	Do you know of any learning or training initiatives organized at the University of Parma for teachers who want to organize MOOCs? (SU)	**(No)** which do you think might be the reason why? Do you think that learning/training initiatives would be useful? Would you participate in them? Why? **(Yes)** could you give any examples you are aware of? What is your opinion?	*This questions is asked because it will be considered together with the background and document analysis about training being present/communicated.*

LEARNING (FACILITATING LEARNING			**BLANK COLUMN FOR INTERVIEWER NOTES**
A1 (L)	Which courses/topics do you teach? When did you start teaching? Have you always been teaching here at UniPR or somewhere else?		
A2 (P)	Think about your way of teaching. How do you organize/perform it? Any specific strategies?		
TECHNOLOGY ENHANCED LEARNING (online learning, e-learning…)			
B1 (P + T)	How have the **internet** or any **information and communication technologies changed** your **way of teaching** during time (**methods and activities**), if they have?	**(No)** why do you think they didn't?	
B2 (P + T)	If you think of your specific experience, how do you think/feel that the internet and information and communication technologies have changed the way your **students** learn?	**(Yes)** Benefits? Challenges? if… improved,,, Which are the technologies that you think have improved students' learning? Specific examples?	

		(No) Why do you think they didn't?	
B3	How do/might **technologies influence collaborative learning**? (P)		
B4 K(C) + C(P) + F(A)?	A teacher who uses technologies while teaches.. Which **specific knowledges are needed?** **Which spceific , skills and competences are required**?		
B5	Which **experiences** do you know/ are you aware of/ you heard of e-learning at the **University of Parma**?		
B6	Do you know of any / Are there any **STRATEGIES or rules or guidelines** by the University of Parma about (e-learning, online learning, TEL)? (S)	**(Yes)** Which ones? **(No)** Why do you think there aren't? Which might be the advantages/disadvantages of strategies/rules/guidelines?	
B7	Which kind of **support, if any, is given to teacher** who use / for using technologies in teaching at the University of Parma? (SU)	**(No)** Why do you think there isn't? Do you think that the University might do something to support you and other teachers in case you wanted to start a MOOC? How would you expect being supported?	

OPEN LEARNING			
C1	Ever you **ever heard about Open Educational Resources , Open Learning, Open Education** …?? (OE) DEFINITION Open Educational Resources, I refer to "teaching, learning and research materials, in any digital format and medium, that reside in the public domain or are released under an open intellectual property license, permitting free and no-cost access, use, adaptation and re-purposing by others with no or limited restrictions". OER might include full courses, course materials, modules, textbooks, streaming videos, tests, materials, or techniques used to support access to knowledge."	**(Yes)** What does it mean to you with reference to your experience? Did you ever experience it in your teaching experience? →**(Yes)**How? Which is the reason why you decided to do? How was the experience for you? Did it change something? Benefits? Challenges? How did you perceive the experience was for your students? **(No)** when I talk about Open learning and Open Educational Resources I mean …DEFINITION ←	
C2	If we talk about an open approach to learning what do you think of in terms of opening learning? (OE)	How do you feel about it if you think of your specific course/domain/experience?	
C3	Considering the differente possible dimensions of oppenness, if you reflect on your way of teaching, do you feel you have **ever experienced any type of openness during you experience** as **teacher** in your courses?	**(Yes)** Which ones? Why did you decide to do it? How? How was it in terms of learning? Any feedback from students **(No)** any specific reason why you didn't?	

	With reference to your experience how do you see the concept of openness in terms of improvement of learning?		
C4 (P) T)	In comparison to online learning / Technology enhanced learning in general in terms of improving learning, which **further (or different) <u>pedagogical/technological</u> aspects are to be considered when talking about open education?** Which specific pedagogical/technological Knowledgeds Competences and skills Are required?		
C6	In particular do you think that **the use of open education in learning changes something when collaborative learning** is concerned? If it does, how?(P)		
C7	Thinking of your specific teaching experience, and in a perspective of improving learning, for which reason you might choose or not to **use** open educational resources in your course/s?		
C8	Thinking of your specific teaching experience, and in a perspective of improving learning, for which reason you might choose or not to **create/release contents and educational materials open online,**		

	sharing them with students and other teachers?		
C9	Do you know whether the University of Parma offers access to open courses in any way? (S)	**(Yes)** could you give any examples you are aware of? **(No)** which do you think might be the reason why?	

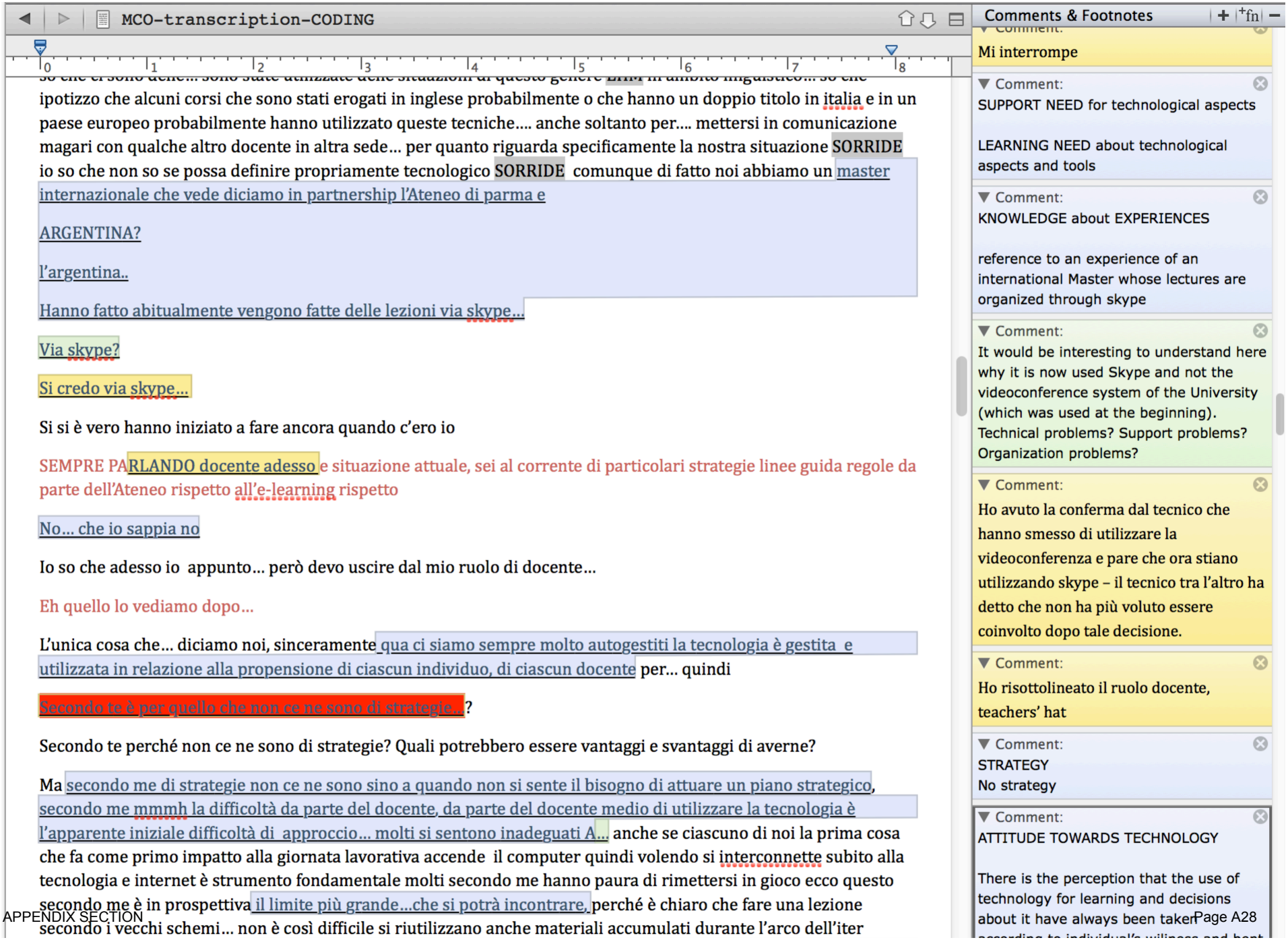
MOOC			
D1	Have you ever heard about MOOC? (M) **MOOCs** are Massive Open Online Course, that is coursed which are delivered on the web for a participation on a large scale, with open access (free and without any restrictions). distinctive characteristics *that is mainly that it is about courses - structured even if in a flexible way - open to a large number of students and freely open to anyone willing to enro* MOOCs started in 2008 in the USA and became largely known since 2012	**(No)** Thinking of such distinctive characteristics what is your feeling about it if you think of your experience as a teacher and higher education? **(Yes)** How did you hear about it? Which is your feeling about this phenomenon from your teacher's perspective and in your specific domain? **(Yes)** Did you ever take part in any MOOC as a student? →**(Yes)** Why did you decide to participate? Do you think it would be important for a teacher to participate in a MOOC as a student? Why?	
D2	Do you think that your topic/discipline/domain would be suitable to approach by massive open online courses?	**(No)** why? **(Yes)** why and how?	

D3	In comparison to online learning / Technology enhanced learning in general in terms of improving learning, which **further (or different) <u>pedagogical/technological</u> aspects are to be considered when talking about open education?** Which specific pedagogical/technological Knowledgeds Competences and skills Are required?		.
D4	How do you think that MOOCs might influence collaborative learning ?	**(No)** why? **(Yes)** why and how?	
D6	Thinking of your specific teaching experience, <u>how</u> do you think your students' learning <u>quality</u> might be affected by participation in massive open online courses (MOOCs)?		
D8	If you think of MOOCs, do you think of any specific platform, or any tool, software that can be used inside a MOOC?		
D9	Thinking of your specific teaching experience, and in a perspective of improving learning, for which reasons you might consider (or not) to organize or actively participate in teaching in a		

	MOOC?		
D10	Would you feel immediately prepared, under a pedagogical/technological point of view, to experiment massive open online courses?		
D12	***don't ask If*** *he/she has already answered about it answering to previous questions -* ***don't ask if*** *he/she never heard about MOOCs, as it would be probably useless* As far as you know, are there any experiences of massive open online courses through the web (MOOC) at the University of Parma?	**(No)** which do you think might be the reason why? **(Yes)** could you give any examples you are aware of?	

D13	Do you know of any / Are there any STRATEGIES or rules or guidelines by the University of Parma about OER? Open practice About MOOCs? (S)	**(Yes)** Which ones? **(No)** Why do you think there aren't? Do you think that strategies/rules/guidelines would be useful?	
D14	Is there any support to teacher who want To create OER? To adopt open practices? to organize MOOCs at the University of Parma? (SU)	**(Yes)** Which kind of support? **(No)** Why do you think there isn't? Do you think that the University might do something to support you and other teachers in case you wanted to start a MOOC? How would you expect being supported?	
D15	Do you know of any learning or training initiatives organized at the University of Parma for teachers who want To create OER? Adopt open practices to organize MOOCs? (SU)	**(No)** which do you think might be the reason why? Do you think that learning/training initiatives would be useful? Would you participate in them? Why? **(Yes)** could you give any examples you are aware of? What is your opinion?	

APPENDIX NO. 9 – Example of a part from a transcription with initial coding, observations and notes



MCO-transcription-CODING

Comments & Footnotes

ipotizzo che alcuni corsi che sono stati erogati in inglese probabilmente o che hanno un doppio titolo in italia e in un paese europeo probabilmente hanno utilizzato queste tecniche.... anche soltanto per.... mettersi in comunicazione magari con qualche altro docente in altra sede... per quanto riguarda specificamente la nostra situazione SORRIDE io so che non so se possa definire propriamente tecnologico SORRIDE comunque di fatto noi abbiamo un master internazionale che vede diciamo in partnership l'Ateneo di parma e

ARGENTINA?

l'argentina..

Hanno fatto abitualmente vengono fatte delle lezioni via skype...

Via skype?

Si credo via skype...

Si si è vero hanno iniziato a fare ancora quando c'ero io

SEMPRE PARLANDO docente adesso e situazione attuale, sei al corrente di particolari strategie linee guida regole da parte dell'Ateneo rispetto all'e-learning rispetto

No... che io sappia no

Io so che adesso io appunto... però devo uscire dal mio ruolo di docente...

Eh quello lo vediamo dopo...

L'unica cosa che... diciamo noi, sinceramente qua ci siamo sempre molto autogestiti la tecnologia è gestita e utilizzata in relazione alla propensione di ciascun individuo, di ciascun docente per... quindi

Secondo te è per quello che non ce ne sono di strategie...?

Secondo te perché non ce ne sono di strategie? Quali potrebbero essere vantaggi e svantaggi di averne?

Ma secondo me di strategie non ce ne sono sino a quando non si sente il bisogno di attuare un piano strategico, secondo me mmmh la difficoltà da parte del docente, da parte del docente medio di utilizzare la tecnologia è l'apparente iniziale difficoltà di approccio... molti si sentono inadeguati A... anche se ciascuno di noi la prima cosa che fa come primo impatto alla giornata lavorativa accende il computer quindi volendo si interconnette subito alla tecnologia e internet è strumento fondamentale molti secondo me hanno paura di rimettersi in gioco ecco questo secondo me è in prospettiva il limite più grande...che si potrà incontrare, perché è chiaro che fare una lezione secondo i vecchi schemi... non è così difficile si riutilizzano anche materiali accumulati durante l'arco dell'iter

Mi interrompe

Comment:
SUPPORT NEED for technological aspects

LEARNING NEED about technological aspects and tools

Comment:
KNOWLEDGE about EXPERIENCES

reference to an experience of an international Master whose lectures are organized through skype

Comment:
It would be interesting to understand here why it is now used Skype and not the videoconference system of the University (which was used at the beginning). Technical problems? Support problems? Organization problems?

Comment:
Ho avuto la conferma dal tecnico che hanno smesso di utilizzare la videoconferenza e pare che ora stiano utilizzando skype – il tecnico tra l'altro ha detto che non ha più voluto essere coinvolto dopo tale decisione.

Comment:
Ho risottolineato il ruolo docente, teachers' hat

Comment:
STRATEGY
No strategy

Comment:
ATTITUDE TOWARDS TECHNOLOGY

There is the perception that the use of technology for learning and decisions about it have always been taken

APPENDIX NO. 10 - Example of MEMO reference (impressions and feelings) – the name of the interviewee and all parts that would allow for an identification and were considered confidential have been omitted and substituted by *** and (…)

PROXEMIC COMMUNICATION
Per quanto riguarda la prossemica, lo spazio era vincolato dall'ambiente, ma comunque il posizionamento era tra distanza personale e sociale 1/1,5 m.

CHRONEMICS
MV è arrivata in ritardo perché ha avuto impegni in precedenza, quindi entrambe eravamo un po' in ansia perché lei poi aveva lezione e quindi aveva fretta, e l'intervista è stata fatta in un tempo necessariamente inferiore rispetto al previsto.
Per riuscire ad essere presente comunque ha rinunciato al pranzo.
Verso la fine dell'intervista ha guardato una volta l'orologio, ma poi quando le ho chiesto se avevamo ancora tempo mi ha concesso 5 minuti extra rispetto ai suoi tempi.

PARALINGUISTIC COMMUNICATION
Ho inserito nel testo note relative a volume, intonazione ecc. perché mi sembra sia importante che siano contestualizzate

PROBLEMATIC ISSUES and POSSIBLE ERRORS

RESPONDENT BEHAVIOUR

Con riferimento alla registrazione audio, prima di iniziare a registrare ho notato che il fatto di prevedere la registrazione tendeva a renderla un po' nervosa. Già in passato mi era capitato con lei (quando abbiamo dovuto registrare lezioni o presentazioni) e avevo notato che le registrazioni video di solito la spaventano; la registrazione solo audio sembra averle consentito, dopo un primo momento, di essere a suo agio e parlare tranquillamente.

Ho avuto l'impressione che, forse per la natura della nostra relazione e della collaborazione sul lavoro, in alcune occasioni è omettesse informazioni nel senso che le dava per scontate… ad esempio quello di cui si occupa e le specificità di ciò di cui si occupa, e gli strumenti che usa e anche le attività che organizza…
Ho notato che quando le ho chiesto di spiegare quali sono le cose che fa mi è parso che quando parlavamo di attività ma soprattutto di tecnologie che abbiamo usato insieme lei non specificasse… per questo motivo in un paio di punti ho ritenuto utile integrare e chiedere conferma, e ricordare alcuni aspetti, nonostante lei non li avesse in quel momento toccati.
Non sono certa che da parte mia questo non abbia contribuito a push un po' troppo piuttosto che lead la conversazione

Nelle occasioni in cui abbiamo affrontato argomenti sui quali sembrava essere meno informata, le sue risposte sono state più brevi e meno approfondite, ma questo potrebbe anche essere dovuto al fatto che il tempo stringeva.

Ho notato che soprattutto quando le ho chiesto se aveva mai sentito parlare di OE e MOOC ha risposto subito si, come se pensasse che fosse la risposta più appropriata, ma che poi alla mia proposta di approfondimento e di esplicitazione delle sue sensazioni è rimasta un po' dubbiosa. Per questo motivo in entrambi i casi prima di andare avanti ho fornito la definizione di OER e MOOC

NATURE OF THE TASK
(method of administration)

Avevo la guida solo in inglese, e questo potrebbe avere influito sulla mia naturalezza nel porre le domande, anche se avendo creato io la guida, sapevo certamente cosa conteneva.
Non sono certa che la tabella come la ho realizzata renda semplice prendere appunti e seguire un percorso, soprattutto in alcuni punti. Questo soprattutto quando a fronte di una prima

risposta che determina una direzione è opportuno approfondire.

INTERVIEWER
Il fatto che io avessi l'intervista solo in inglese e il fatto che fosse la prima intervista forse non ha messo me sempre a mio agio.
Non avevo a portata di mano subito la definizione di OER e quindi non sono stata precisa come nella definizione corretta. Questo potrebbe avere influenzato le risposte successive.
Nonostante sia corretto mostrarsi "attentive, interested, alert and responsive" (Pickard, p. 171) credo di avere interrotto troppe volte la conversazione; a volte è in realtà stato utile per fare una parafrasi o chiedere conferma della comprensione di un concetto, a volte tuttavia avrei potuto evitare.

ELEMENTS OF UNSTRUCTURED INTERVIEWING WHICH CAN INFLUENCE SUCH A TYPE OF SEMI-STRUCTURED INTERVIEWING

UNDERSTANDING LANGUAGE AND CULTURE
Maria è di origini italiane, e sebbene viva in Italia da anni, sia sposata con uno psicologo italiano e io ritenga che lei parli l'italiano molto bene, a volte noto che non è sempre semplice trovare il termine più adeguato, quindi la lingua potrebbe aver comportato il veicolare concetti non sempre precisi. Ho notato che con il figlio ad esempio parla più spesso in spagnolo che in italiano quando deve farsi intendere.

GAINING TRUST - ESTABLISHING RAPPORT
It was not necessary to establish any trust with the respondent as we already knew each other and we regularly work together and collaborate.

Come specificato da Kvale, 1996, p. 125
"the interviewer must establish an atmosphere in which the subject feels safe enough to talk freely about his or her experience and feelings"
questo a mio avviso è stato facilitato da alcuni fattori

- il luogo era conosciuto a entrambe, era il mio ufficio ma è un luogo nel quale abbiamo spesso interagito in modo rilassato e per altre motivazioni;
- il fatto di conoscerci da tempo e che c'è un certo livello di collaborazione e confidenza tra di noi penso abbia contribuito a metterla a suo agio;
- l'introduzione ha chiarito alcuni punti relativamente all'uso della registrazione e delle informazioni, ed il fatto che si trattasse di una conversazione nella quale non c'erano risposte corrette o sbagliate;
- la registrazione è stata fatta con un dispositivo che è spesso presente ed utilizzato per altri scopi, l'ipad, per cui, nonostante l'intervistato sapesse che si stava registrando, non c'era in vista un dispositivo che ricordasse specificatamente un registratore - questo potrebbe avere aiutato

DEGREE OF INVOLVEMENT
MV è una persona con la quale lavoro abitualmente, ci conosciamo e sappiamo quello che facciamo insieme; questo ha contribuito a creare un clima tranquillo e rilassato, un clima di fiducia.
Allo stesso modo sono consapevole che potrebbe avere influenzato le risposte, anche non ho avuto questa impressione.

APPENDIX no. 11 example of FACTUAL PORTRAIT

The name of the interviewee has been replaced by XXX for confidentiality reasons (even if the teacher has specifically given permission to refer to her/his interview during the analysis)

FACTUAL PORTRAIT XXX

XXX has **previous experience** on the use of technologies for teaching, with reference to different kinds of learning experiences and levels

LEARNING

His/Her learning strategy consists mainly of **theoretical introductions**, which prelude to both face-to-face and online **activities**. XXX believes it is of major importance paying careful **attention to the specific initial knowledge level of students**. When XXX refers to activities, XXX underlines **interaction among students and the participatory dimensions are absolutely necessary**, both when talking about face-to-face learning and learning through technical tools.

TECHNOLOGY ENHANCED LEARNING / E-LEARNING

His/Her perception is that **information and communication technologies and the internet completely changed his/her way of teaching** through time. When XXX talks about changes XXX specifically refers on the one hand to some tools XXX uses (PowerPoint and digital presentations instead of the blackboard, internet as a way to support his/her lecture), on the other hand XXX mentions the availability of information and specific tools for his/her students – and reports of his/her explaining how to use such tools during his/her lectures. During our conversation XXX makes s**pecific references and examples to methods XXX employs to improve learning through technologies with reference to his/her topic**: one example is the availability of corpora online for the students to use.

The attitudes XXX reports during lectures seems to show a **role of the teacher as interface and mediation between students and technology for learning in a specific domain** ("show to students how they can take advantage of the use of these tools", "if you don't foster activities where they put things in practice it remains like that… they say - yes I know - but then you realize they do not know".

His/Her perception is also that **the way students learn has changed along time,** most of all with reference to the **ways and locations to access information**.

As regards possible **challenges for students when using technology** to learn XXX cites an **initial necessity for familiarization with the technological tools** and XXX makes **specific examples**, which refer to reality, to situations and typical sentences XXX probably heard. XXX argues that after an initial phase of familiarization **XXX perceives in his/her students the idea of having fun, and their will for interaction and active learning**. XXX **uses technological tools to foster interaction and collaboration among students**, and underlines that in many occasions **motivation and satisfaction** derive in his/her opinion

from the **visibility** of what is done and from the **recognition** by the teacher and by peer students.

XXX refers to **specific techniques to improve collaborative learning, referring to his/her topic**, and XXX states XXX perceives **enrichment** coming **from confrontation and collaboration through online activities.**

Among tools and specific technologies XXX cites the wiki.

As regards knowledge, competence and skills that a teacher must possess to teach using technologies XXX reports his/her **awareness of a necessary huge transition between traditional teaching and technology supported one**, and XXX underlines **knowledge** related aspects; XXX often refers to a sort of **tension between a perceived knowledge gap and the time which is necessary to fill such a gap**.

XXX introduces the subject of the **necessity for incentive for a teacher to dedicate time** (time is reported in numerous occasion during the conversation as a scares resource) **to collect information and to learn**. In spite of affirming XXX hasn't any precise idea of what XXX would propose as incentive, XXX refers to a subjective idea of incentive that each person should perceive, and XXX cites possible economic incentives for research or incentives related to time, as reduction of hours on other activities and reliefs from other compulsory activities.

XXX reports about **being informed of the present experiences** that are being made in his/her specific area, as regards technology enhanced learning.

XXX declares that **the University of Parma does not have any strategies, rules or guidelines about e-learning, while XXX affirms they would be absolutely necessary**. When asked if XXX can think of a reason for not being strategies present, XXX hypnotizes **a non-proactive approach by the University related to specific themes**, and XXX reports of choices being mainly stimulated by incentives by the Government or possibilities of funding. XXX therefore believes that considering such behaviour by the University itself the necessity of incentives by individuals should be understandable.

XXX (who is directly involved in Co-Lab) cites UniPR Co-lab as the available support for teachers and XXX declares that Co-Lab "tries to answer to teachers' needs"; XXX also refers to the office "servizio e-learning per la didattica", but underlines that such a **support is not enough**. XXX specifies that his/her idea of **e-learning is much different from a "deposit of learning materials"**, which is a way to facilitate and make it easier to acquire documents, but is not enough: "**it is not enough to make a platform available where to insert docum**ents". XXX compares e-learning as mere repository to the service that was time ago offered by "photocopy services"," where you went with your bunch of documents and you left it there to be photocopied".

XXX perceives that **"teachers themselves do not really know which are the potentialities of e-learning**" and therefore underlines the **necessity to be informed about possibilities and potentiality in order to operate a choice**, by striking the fact that it is not possible to only base the choice on present knowledge.

APPENDIX no. 11: example of FACTUAL PORTRAIT

XXX reports **the necessity to understand by those who decide that e-learning is not to spare money**, as economically e-learning does not cost less – there is a need to be aware of the economical and financial aspect.

OPEN LEARNING

His/Her idea of open learning, open education, open educational resources is about **open and free lectures** – XXX also suggest the idea of a **choice by learners of what they want to learn**, and the idea of the **possibility of choosing a teacher**.

XXX **never experienced any type of openness during his/her experience as a teacher in his/her courses.**

On the one hand the idea of openness seems to his/her potentially interesting, on the other hand XXX seems not to fully understand the business model and its sustainability considering open lectures; XXX seems to perceive the necessity to understand how openness works and expressly cites his/her doubts about copyright. It seems to emerge his/her necessity for knowledge and understanding (of copyright, openness) as a condition to get over present distrusts.

On the one hand XXX seems convinced that students would not participate in face-to-face lectures in case open (recorded) lectures are available online even after the lecture; nevertheless XXX later specifies that in his/her opinion it is a positive aspects, as XXX does not perceive any real difference between students participating in a virtual classroom or a real classroom, even if the perceives that this would require a necessity for the teacher to modify the teaching methods.

In spite of being aware that many additional **competences and abilities** would be necessary to offer open learning, XXX specifies that it is **not easy for his/her to imagine which ones**, because XXX is not informed enough.

In spite of declaring absence of experience about open learning, when asked if openness might improve learning and how, XXX mentions a **concept of openness in terms of creative re-use of resources by students** ("what they could create starting from the starting point given by you" - the teacher), and also mentions the **idea of openness of resources as a stimulus to take an active part in the learning process.**

XXX doesn't know either of any open learning initiatives at the University of Parma or strategies/relevant support.

XXX seems to want to transmit and report constantly about the **necessity to know to avoid and get over doubts and suspicions about openness**.

MOOC

In spite of affirming that XXX heard about MOOCs, XXX does not remember what it is about exactly. After being given the definition of MOOC XXX reports many doubts about the opportunity to open a course without any distinctions to students having different levels of

knowledge about a topic. The main doubts are about such a pedagogical aspect, XXX does not mention technology, and XXX refers about his/her conviction that it is difficult to get to specific learning outcomes when facing a diversified initial knowledge level.

For this reason XXX argues **it is hardly possible to talk about learning quality when referring to such an experience, for a heterogeneity of participants when interests and competences are concerned** ("you cannot put together a mathematician and one that does not know about mathematics".

XXX is not informed about any strategies, experiences or support related to MOOCs at the University of Parma.

Key-words I recorded in the interview:

LEARNING AND TECHNOLOGY

- Online learning
- e-learning

LEARNING:

- Facilitating
- Interaction
- Active participation

- TIME
- INCENTIVE
- Copyright
- Knowledge, to know…to understand, knowledge to dissipate doubts

APPENDIX no. 12 example of "PORTRAIT with judgements"

The name of the interviewee has been replaced by XXX for confidentiality reasons (even if the teacher has specifically given permission to refer to his/her/his interview during the analysis). Some parts have been specifically omitted and replaced by (…)

PORTRAIT "WITH JUDGEMENTS" XXX

LEGENDA:

IN GREEN (italics) – GENERAL NOTES

IN DARK RED judgments, comments, questions raised.

IN BLU: comments through different interviews

The present portrait follows the interview guide topics, starting from learning to technology enhanced learning to open learning to learning within MOOCs.

LEARNING - TEACHING

*It is important to understand aspects related **to teaching experience** (levels of taught courses, years of experiences, if the teacher has experience in other places), to the **teacher role** as it is perceived by the teacher himself, to the **teaching methods, methodologies and strategies** to further consider it in relation to technology enhanced learning, open learning and MOOCs.*

XXX has been being a teacher (…). It is interesting to have the perspective and perception of a teacher who has not only taught in Parma and who has taught at different student levels. XXX has **previous experience on the use of technologies** for teaching, with reference to different kinds of learning experiences and levels (…).

His/Her **teaching strategy** consists mainly of **theoretical introductions**, which prelude to both face-to-face and online **activities**. Such theoretical introductions are only face-to-face ones. *Why doesn't XXX consider doing something online even for introduction? Is it for pedagogical reasons? Technical reasons? Other reasons related to rules?*

XXX is concerned about finding the right **activities to apply knowledge**, this is also a qualitative aspect in constructivist learning.

XXX believes it is of major importance paying careful **attention to the specific initial knowledge level of students**. This aspect is related to **learning quality**, and it is a concern about the **level of prior knowledge**. This looks a signal of the teacher being alert to **fostering recall of prior knowledge**, **a signal of constructivist attitude/approac**h. Moreover the verb "**facilitate**" for learning is used. Many sentences convey the idea of **a need for investigating prior knowledge** ("I have to understand the student level", "if I have students

with already existing knowledge, because they will be mixed with students who do not have any knowledge of the language" I must know whom I have in front of me to think of the best strategies to make learning happen" "first of all I have to meet students").

XXX looks also worried about the **teaching language**, as a strategy which might change **learning quality.**

When XXX refers to activities, XXX underlines **interaction among students and the participatory dimensions are absolutely necessary**, both when talking about face-to-face learning and learning through technical tools. XXX wants students to be "part of it, to interact with other students". **Interaction** is typical of constructivist approaches, as it is the **will to create a social environment**. XXX expressly refer to using **technological tools,** but XXX does not mention any specific one. *Why? Because his/her priority and focus is on interaction and activities, no matter the tools? Because the focus is more on usage to satisfy needs rather than on tools? Because XXX does not remember in this moment? Because XXX knows that the interviewer knows about it?*

TECHNOLOGY ENHANCED LEARNING / E-LEARNING

Technology is introduced in the methods and methodologies for learning in a perspective to improve learning

His/Her perception is that **information and communication technologies and the internet "completely changed" his/her way of teaching** through time. When XXX talks about changes XXX specifically refers on the one hand to some tools XXX uses (PowerPoint and digital presentations, internet as a way to support his/her lecture), on the other hand XXX mentions the availability of information and specific tools for his/her students – and reports of his/her explaining how to use such tools during his/her lectures. Powerpoint presentation and the internet seem to be the quite commonly used technologies. This does not look related to a specific previous experience or to the specific domain.

During the conversation XXX makes s**pecific references and examples to methods XXX employs to enhance learning through technologies with reference to his/her topic**: one example is the availability of corpora online for the students to use. This shows that XXX knows specific technological tools for language learning, XXX knows what XXX is talking about, and XXX knows specific tools which can enhance learning.

The attitudes XXX reports during lectures seems to show a **role of the teacher as interface and mediation between students and technology for learning in a specific domain** ("show to students how they can take advantage of the use of these tools", "if you don't foster activities where they put things in practice it remains like that… they say - yes I know - but then you realize they do not know". This is coherent with the constructivist view of teachers as mediators of students and environments.

His/Her perception is also that **the way students learn has changed along time,** most of all with reference to the **ways and locations to access information**. "Through the new

technologies students can have many more information while previously it was necessary to go to the library and find.. or even buy… these corpora where to verify their hypothesis, so this has facilitate this kind of task, this is really important, they have **a variety of previously impossible tool**s." XXX probably means unimaginable rather than impossible. XXX refers to a variety of tools but XXX does not mention any specific tool other than corpora, which is specific of language learning. What XXX states denotes a positive attitude towards the use of technologies for learning/teaching and the awareness of specific changes which have been made possible by technology. It is about technology and change… change in the PLACE of access to information, change or the WAY to access information.

As regards possible **challenges for students when using technology** to learn XXX cites an **initial necessity for familiarization with the technological tools** and XXX makes **specific examples**, which refer to reality, to situations and typical sentences XXX probably heard. XXX argues that after an initial phase of familiarization **XXX perceives in his/her students the idea of having fun, and their will for interaction and active learning**. When XXX talks about these initial difficulties XXX is quite thoughtful and it seems that XXX is nearly also thinking about his/herself. "for example one says – ah I am not able as once I got the message password not recognized" "one tries, tries…and then maybe you just did not push the right button so you stay there and say - I am not able"

XXX **uses technological tools to foster interaction and collaboration among students**, and underlines that in many occasions **motivation and satisfaction** derive in his/her opinion from the **visibility** of what is done and from the **recognition** by the teacher and by peer students ("they also see the other's work, they realize that what they do is considered by the teacher and by their peers and this is very important" where very important is said with emphasis, "this gives some satisfaction" "there is an active work by student and the satisfaction that it is visible, there is a proof of it"). XXX also refers to students having fun, in his/her opinion, thanks to such an approach. This is about engagement and interaction, which are dimensions of quality in learning for constructivists.

Do the students agree with it? It would be interesting to investigate whether students share such a view of interaction and collaboration XXX reports. Or does it depend to his/her positive attitude towards it? To his/her passionate attitude towards it?

XXX refers to **specific methods to enhance collaborative learning, referring to his/her topic**, and XXX states XXX perceives **enrichment** coming **from confrontation and collaboration through online activities.** XXX explains how XXX uses a video or a text to work on it, how they do things but XXX is not that clear. *Is it due to the language? Is it due to the fact that XXX knows I know what XXX is talking about because I proposed some of those methods and tools. Isn't XXX clear because XXX understood the importance for learning but did not really understand how it works under the technical point of view?*

XXX does not mention any specific tools…
Among tools and specific technologies XXX only cites the wiki after a long silence which had made me think XXX did not understand what I meant, and XXX hesitates a bit.

APPENDIX: example of "PORTRAIT with judgements"

As above I have some questions in mind… *Because his/her priority and focus is on interaction and activities, no matter the tools? Because the focus is more on usage to satisfy needs rather than on tools? Because XXX does not remember in this moment? Because XXX knows that the interviewer knows about it?*

As regards knowledge, competence and skills that a teacher must possess to teach using technologies XXX reports his/her **awareness of a necessary huge transition between traditional teaching and technology supported one**, and XXX underlines **knowledge** related aspects; XXX often refers to what seems to me a **tension between a perceived knowledge gap and the time which is necessary to fill such a gap**.

I wonder: is it only about knowledge? Moreover, why doesn't XXX also refer to specific abilities and skills? Because XXX thinks they are not needed? Because XXX puts everything under the "knowledge" label? XXX does not refer to technological nor pedagogical skills as necessary.

I perceive that there is a big part of it related to **how XXX feels (affective domain).** Time shortage and time need seem part of it. It looks as if for his/her time is so short not to allow to know things, if XXX has to learn, in his/her **learning teacher role**.

This affective dimension is in my opinion also present when XXX introduces the subject of the **necessity for incentive for a teacher to dedicate time** (time is reported in numerous occasions during the conversation as a meagre resource) **to collect information and to learn**. In spite of affirming XXX hasn't any precise idea of what XXX would propose as incentive, XXX refers to a subjective idea of incentive that each person should perceive, and XXX cites possible economic incentives for research or incentives related to time, as reduction of hours on other activities and reliefs from other compulsory activities.

When XXX talks about time and incentives I am quite surprised, as on the one hand there is the positive attitude to do things, XXX has previous experience about using technology to enhance learning, XXX looks passionate about interaction and collaborative learning, but on the other hand there seems to be a sort of wall to go further for other experiences, because of lack of time and incentives. XXX gives some ideas of possible incentives, (sort of discount in teaching hours, economic incentives) but it is not clear at this point what could really stimulate further his/her efforts.

XXX reports about **being informed of the present experiences** that are being made in his/her specific area, as regards technology enhanced learning. The fact that XXX looks quite certain about knowing what happens in his/her area and the fact that XXX underlines XXX "knows about what his/her collegues in his/her area, (…), are doing, those who use technologies" makes me think that on the other hand XXX might be not so informed about experiences in different areas inside the University of Parma.

XXX declares that **the University of Parma does not have any strategies, rules or guidelines about e-learning** and is quite certain about it.

APPENDIX: example of "PORTRAIT with judgements"

On the other hand XXX affirms they would be absolutely necessary. When asked if XXX can think of a reason for not being strategies present, XXX hypnotizes it is because it is something **new** (but actually it is not new at all if we look at the literature – nevertheless it is new in the Italian experience), and because of **a non-proactive approach by the University related to specific themes**, and XXX reports of choices being mainly stimulated by incentives by the Government or possibilities of funding. XXX therefore believes that considering such behaviour by the University itself the necessity of incentives by individuals should be understandable, after all. XXX therefore goes back to incentives again.

XXX (who is directly involved in Co-Lab and is among those teachers who regularly collaborate with the instructional designer and are supported) cites UniPR Co-lab as the available support for teachers and XXX declares that Co-Lab "tries to answer to teachers' needs"; (…). XXX specifies that his/her idea of **e-learning is much different from a "deposit of learning materials"**, which is a way to facilitate and make it easier to acquire documents, but is not enough: "**it is not enough to make a platform available where to insert docum**ents". XXX compares e-learning as mere repository to the service that was time ago offered by "photocopy services"," where you went with your bunch of documents and you left it there to be photocopied".

In this case XXX looks quite critical towards technologies only being used to create repositories. His/Her being critical is clear from both the terms XXX uses and the tone. It is not to be forgot at this point that one of the main starting points for teachers joining Co-Lab was thinking of technologies as tools to enhance learning, not as ways to store contents as it was already possible by other tools at the University.

But XXX is really concerned about support for Technology Enhanced learning being not enough. XXX perceives that **"teachers themselves do not really know which are the potentialities of e-learning**" and therefore underlines the **necessity to be informed about possibilities and potentiality in order to operate a choice**, by striking the fact that it is not possible to only base the choice on present knowledge. This is an interesting suggestion relevant to support for TEL; nevertheless, XXX is not sure XXX would participate in things like information days, and meetings and so on, because there is the problem of time and incentives.

Data here also show that research might be an antagonist for teaching. *Why should one teacher go?* I have to carry out a research, I have to deliver an article there, I have to give a lecture there… I don't have the necessary time, this is the point, I don't have time.

More than being a mere problem of quantity of time it might be a matter of priorities and time is dedicated to priorities. In Italy the evaluation of the quality of teachers/researchers in the Universities is mainly about research products. Teaching is not considered among parameters to evaluate quality, and funding are given according to such a type for quality. For this reason many concentrate on research, by stating it or not, but many teachers refer of this tension. As it appears to be from the literature this is a common problem in other European countries, that seems to put teaching on a second level of priority in higher education.

APPENDIX: example of "PORTRAIT with judgements"

XXX reports **the necessity to understand by those who decide that e-learning is not to spare money**, as economically e-learning does not cost less – there is a need to be aware of the economical and financial aspect. There is here again a reference to the economical aspect. On the one hand it seems to confirm awareness and knowledge of what is e-learning (the literature and the experiences confirm it is not a way to spare money), on the other hand it seems to convey the idea that

OPEN LEARNING

Perceptions about Open learning are investigated in the technological and pedagogical perspective as a way to improve learning.

XXX does not give a specific definition… idea of open learning. XXX looks uncertain about it. XXX has clearly no experience about it, as it appears from his/her reaction.

His/Her idea of open learning, open education, open educational resources is about **open and free lectures** – XXX also suggest the idea of a **choice by learners of what they want to learn**, and the idea of the **possibility of choosing a teacher**.

As a matter of fact this idea is the one that is implicit in both Open Educational Resources and MOOCs. It is about the dimensions of openness as free access, freedom of choice.

XXX states XXX **never experienced any type of openness during his/her experience as a teacher in his/her courses.**

On the one hand the idea of openness seems to his/her potentially interesting, on the other hand XXX seems not to fully understand the business model and its sustainability considering open lectures; XXX seems to perceive the necessity to understand how openness works and expressly cites his/her doubts about copyright. It seems to emerge his/her **necessity for knowledge and understanding (of copyright, openness)** as a condition to get over present distrusts.

On the one hand XXX seems convinced that students would not participate in face-to-face lectures in case open (recorded) lectures are available online even after the lecture; nevertheless XXX later specifies that in his/her opinion it is a positive aspects, as XXX does not perceive any real difference between students participating in a virtual classroom or a real classroom.

What is surprising is that XXX associates open learning to the video recording of lectures and their open availability. Actually video recording is about technology enhanced learning and not specifically about it being open, because academic students (those who are enrolled) might well also use recorded lectures, which are available inside a closed environment. This confirms there is no complete understanding about what open learning is and might be and how it could improve learning.

It is interesting to notice that XXX perceives that this would require a necessity for the teacher to modify the teaching methods. XXX did not refer to it when XXX was asked about TEL but here XXX refers to a need for change and a need to adapt pedagogy.

As regards open learning there is no reference to technological skills, there is reference to understanding what it is about, and this is also about pedagogy in my opinion.

In spite of being aware that many additional **competences and abilities** would be necessary to offer open learning, XXX specifies that it is **not easy for his/her to imagine which ones**, because XXX is not informed enough. This confirms the interpretation I gave about his/her being not so aware of what it implies.

What is quite surprising is that in spite of declaring absence of experience about open learning, about the unawareness about some aspects, when asked if openness might enhance learning and how, XXX mentions a **concept of openness in terms of creative re-use of resources by students** ("what they could create starting from the starting point given by you" - the teacher), and also mentions the **idea of openness of resources as a stimulus to take an active part in the learning process.** This is a very high-level idea of openness, the one associated to reuse of open educational resources by both students and teachers. This could come from his/her use of technology to motivate and enhance collaboration,

XXX doesn't know either of any open learning initiatives at the University of Parma or strategies/relevant support. As a matter of fact at the University of Parma the only support on open learning initiatives comes from Co-Lab. XXX might therefore be aware of that… but the point might be that Co-Lab only has one person available to give support, and the priority is often on the teachers needs and on designing technology learning activities together with teachers. There is not so much information or promotion about other possibilities. Actually, many materials issued by the technician/instructional designer (that is me) at Co-Lab are released with open licences and can be used for learning, so technically there are open educational resources experiences and open learning resources made available.

XXX seems to want to transmit and report constantly about the **necessity to know to avoid and get over doubts and suspicions about openness**. And sustainability, (..:) comes back again.

MOOC

Perceptions about Open learning are investigated in the technological and pedagogical perspective as a way to improve learning.

In spite of affirming that XXX heard about MOOCs, XXX does not remember what it is about exactly. The impression I get from it is that XXX is not aware of it. If I think back to the part about open learning, though, XXX had mentioned the idea of free and open access, and freedom to choose the teacher, and that is also about MOOC. It is possible that Open Learning, Open Educational Resources and MOOCs are concepts that have not precise boundaries for his/her, even if the main dimensions are known.

APPENDIX: example of "PORTRAIT with judgements"

After being given the definition of MOOC XXX reports many doubts about the opportunity to open a course without any distinctions to students having different levels of knowledge about a topic. The main doubts are about such a pedagogical aspect, XXX once again does not mention technology, and XXX refers about his/her conviction that it is difficult to get to specific learning outcomes when facing a diversified initial knowledge level.

For this reason XXX argues **it is hardly possible to talk about learning quality when referring to such an experience, for a heterogeneity of participants when interests and competences are concerned** ("you cannot put together a mathematician and one that does not know about mathematics".

This goes back to the concerns about building on prior knowledge that XXX reported at the beginning of the interview. As a matter of fact being completely without barriers is one of the aspects that might be a cause of the high dropout rates that are reported for MOOCs and which have been a debated issue in blogs, conferences and in the literature about MOOCs.

A teacher who does not know much about MOOCs, in spite of this, is here touching an important theme about one of the possible problems and difficulties in MOOCs. This supports, in my opinion, the opinion that teachers have to be involved in discussions about critical issues related to education, that even if they do not know specifically about MOOCs or about what open education is, it is possible to involve them and get interesting ideas from that, that a community confronting on such issues might improve the "readiness" of teachers under the pedagogical perspective, to face some aspects

XXX is not informed about any strategies, experiences or support related to MOOCs at the University of Parma. As a matter of fact, there are only some communications inside Co-Lab about it, no strategy, no support at the University of Parma.

APPENDIX NO. 13 - Initial framework to refer to (as a list of concepts and directions) for analysis about readiness for open learning and MOOCs

<table>
<tr><td>Learners

Human resources</td><td colspan="3">Bloom</td></tr>
<tr><td></td><td>COGNITIVE</td><td>AFFECTIVE</td><td>PSYCHOMOTRIC</td></tr>
<tr><td></td><td>Knowledge</td><td>Feeling</td><td>Competences (skills) and tools</td></tr>
<tr><td>TECHNOLOGY
Considered as technological attitude and skills</td><td rowspan="2">Content readiness
(technological and pedagogical level)</td><td>Attitude towards technology

Attitude towards innovation</td><td>Technological skills</td></tr>
<tr><td>PEDAGOGY</td><td>Attitude towards self-development

Sociological aspect (collaboration)</td><td></td></tr>
</table>

This study considers the aspect related to **people**, which is at the basis of it all.

Starting from Bloom taxonomy domains and considering teachers both promoters of learning AND learners I consider those aspects which have been considered important from the literature about e-learning readiness which are related to people, without forgetting that there are two levels of readiness, one related to technology, the other one related to pedagogy, which both influence the domains.

This also confirms the model by Guglielmino and Guglielmino (2003), who list technical readiness and readiness for self-directed learning as the two most important components of successful e-learning.

APPENDIX NO. 14 - Extended framework: Teacher's readiness for open learning and MOOC

Learners / Human resources	Bloom		
	COGNITIVE	**AFFECTIVE**	**PSYCHOMOTRIC**
	Knowledge (previously known material, terminology, facts, ways and means, theories) **Comprehension** (understanding) meaning **Application** → use in new and concrete situations **Analysis** **Synthesis**: creatively or divergently apply **Evaluation**: judging value based on personal values	Feelings Values Appreciation Enthusiasm Motivations Attitudes	Using technical instruments Other skills
	Knowledge	**Feeling**	**Competences (skills) / tools**
TECHNOLOGY (and innovation)	*Knowledge of possible technologies to use* *Knowledge of experiences / examples* *Knowledge of existing support (T)*	*Attitude towards use of … (positive/ negative)* *Attitude towards technology* *Feeling about existing support (T)*[2] *Feeling about technological competences* *Attitude towards innovation*	*Ability to use… (technological skills)*
PEDAGOGY	*Knowledge of existing strategy (T-P)* *Knowledge of existing support (P)* *Different levels of enrichment (learning quality)* *Teaching experience* *Knowledge / comprehension of the right approach / tool for the pedagogical approach* *Sociological aspect*[1]	*Attitude towards self-development* *Feeling/attitude towards strategy*[2] *Feeling about existing support*[2] *(P)* *Motivations as teacher* *Attitude towards teacher's role / teaching approach* *Feeling about "tension" research / teaching* *Feeling about pedagogical competences*	*Ability to use (pedagogical-level skills)*

[1] It is positioned between cognitive and affective domain, actually, because the bent might depend on knowledge and comprehension of some aspects, on evaluation, but also on specific motivations and attitudes

[2] We explored perceptions by teachers, so we do not consider the institutional aspect of support/strategy (which is verified by carrying out the document analysis) but rather the perception about external factors (strategy/ support)

MEMO-008 MOOC as a synonym for participation?

Also refer to memo 001, 003, 010, 012, 020

Legenda:
Green: from collected data –
Violet: quote
Red: questions, reflections,
Yellow highlights: to be checked, to see

It seems from the collected data about MOOCs that they might be considered a solution to go towards a more interactive and participative learning model, and therefore a way to enhance learning by interaction and participation.

One example of possible collaboration in MOOCs is mentioned by I03 in the peer reviewing process; nevertheless I03, when refers to it, mentions the concept because it was introduced by the interviewer and is not informed about it.

Nevertheless, as it is evident from the literature (Siemens, 2013) but not only – see literature, MOOCs are not necessarily of an interactive and participative type and not every teacher, after all, imagines MOOCs as necessarily interactive and participatory. I07, for example, imagines them as lectures or recorded lectures and asks himself if interaction has to be foreseen (see the MEMO 012 about pedagogical challenges, opportunity and learning enhancement).

I05, who adopts a collaborative approach in her course, asks herself if "participation" is "possible on a large scale". Participation is for her synonym for collaboration and collaborative learning and she calls for the necessity – in order to talk about learning enhancement - to distinguish between participation or access to many people.

Teachers who feel no need for collaborative learning and do not foster it in their courses seem not to see any gleam nor need for collaboration in open approaches, either. This might be sometimes related to their considering students as not particularly active nor interactive in face-to-face experiences (I04) even if he considers MOOC not as simple repositories but as being sometimes "interactive virtual classrooms".

But do teachers ask themselves why students are not active? Is it a cultural problem? Is it a characteristic of some specific academic domains? Is it a generational issue? Is it depending on teaching approach?

Do teachers approach active participation and collaboration by students in a constructionist way? Sometimes they refer to participation but their explanation of it recalls access more than participation… I02 and participation to the platform, see Memo001 Do teachers do enough to motivate and stimulate participation? Are they pedagogically prepared to do it? (see MEMO 003 on readiness GAP)

It might be the case here that when participation and interaction are considered at the same time strategic thus challenging, the idea of having a new model to test, looks as a possible solution. At least this is what seems to emerge from the collected data.

It is the case for example of I06, who is not happy about the participatory aspect in her course and sees the MOOC model, as it has been explained to her, as a way to enhance interaction and participation, and an "active massive distribution, not passive as the e-learning I have experienced".

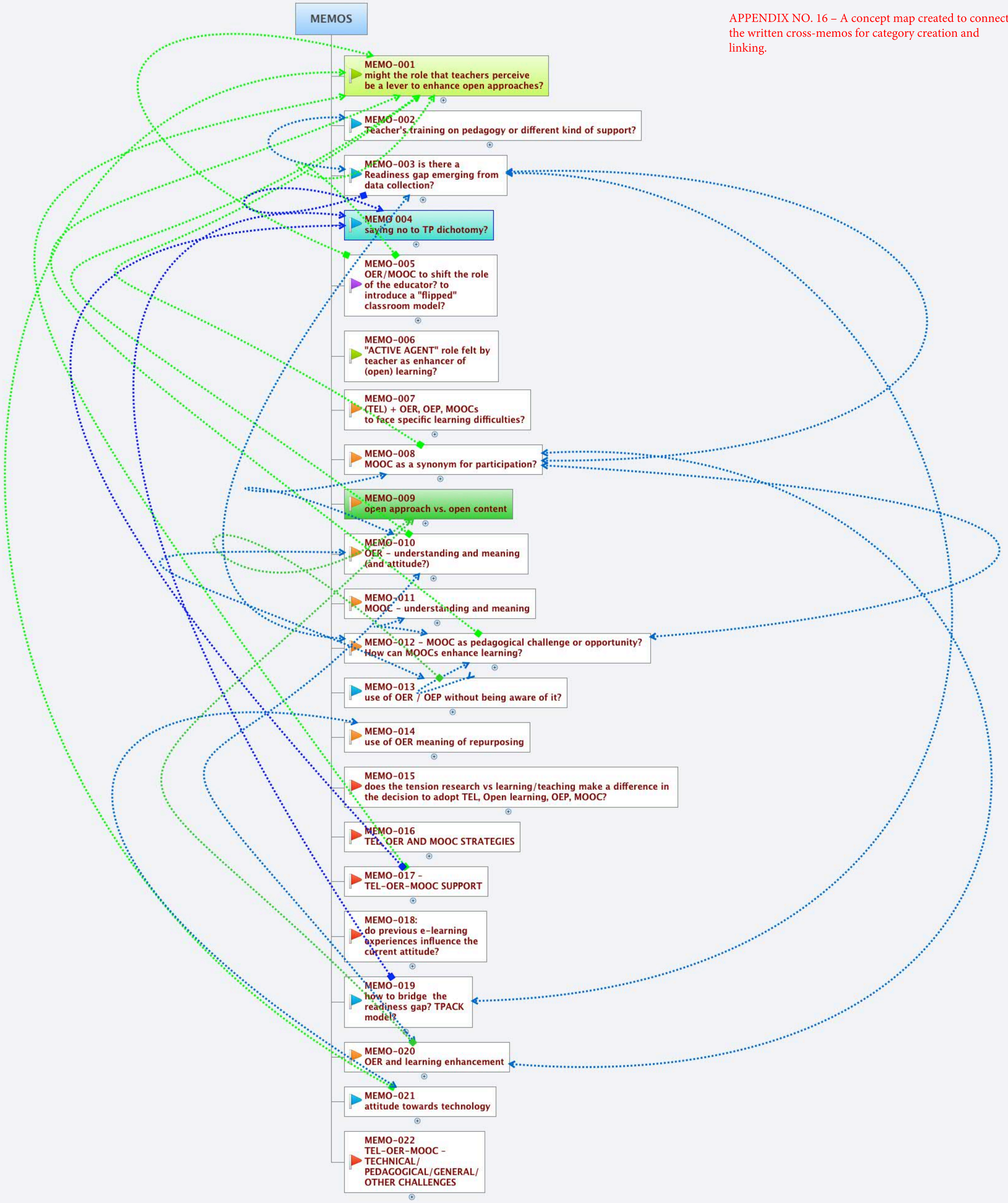
In spite of perceiving the difficulty in standard models to involve students, she would be eager to adopt collaboration to enhance learning and seems to look at MOOCs at a possible way to overcome limitations.

MOOC might also be starting points for the creation of communities and groups around specific interest, as proposed by I02 (SEE THE SPECIFIC POINT IN MEMO 020)

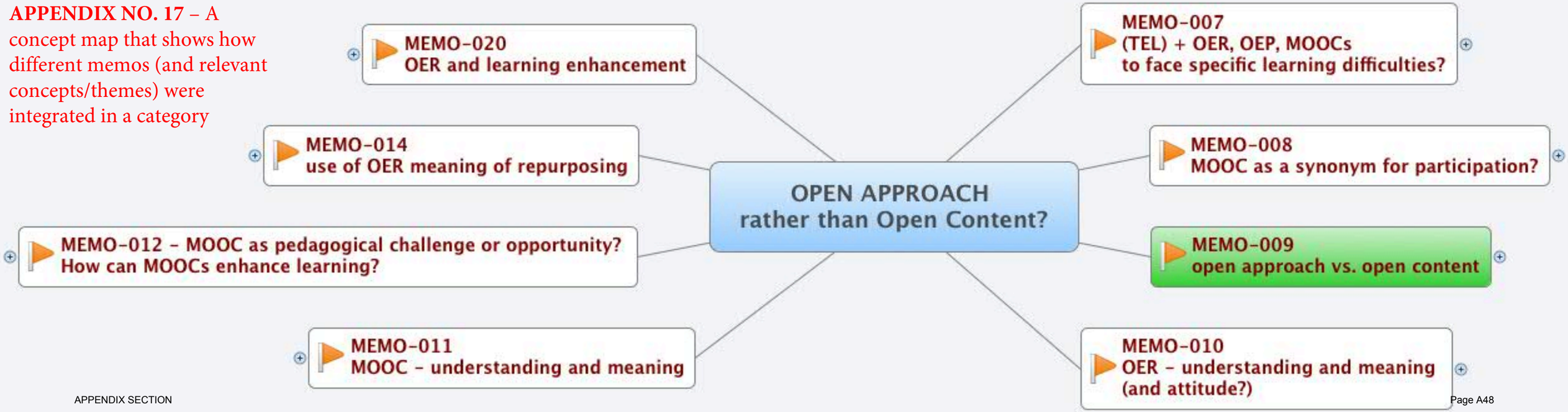
There are teachers who already adopt a collaborative approach inside and outside the classroom and propose collaborative activities to their students… so is it really something that is only possible in MOOCs? If that's the case why?
Is the possibility to enhance learning by collaboration implicit in the model as it might be suggested by some teachers? Are students just not active and do not show a collaborative attitude and so collaborative learning is not necessary?

Or is it once again about teaching approach and strategies? The fact that teachers imagine MOOC as possible interactive/participatory models might be itself an indicator of different approaches towards collaborative learning (and therefore related to teaching strategies (see MEMO 001) .

APPENDIX NO. 16 – A concept map created to connect the written cross-memos for category creation and linking.



APPENDIX NO. 17 – A concept map that shows how different memos (and relevant concepts/themes) were integrated in a category



DILL MASTERS THESIS PROJECT

Gantt Chart Plan of Thesis writing process

APPENDIX NO. 18 – Gantt chart for the research schedule

NB the period 1-19 May is not included because due to previous commitments it could not be dedicated to the thesis project

Status key	
	done
	= some issues but ok
	= serious problems

Time	Jan 1-15	Jan 16-31	Feb 1-14	Feb 15-28	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 20-31	Jun 1-15	Jun 16-30		Status
Process stage													
Topic													
selection													
definition													
Planning of content													
thematic plan													
research plan													
Literature													
availability													
reading													
taking notes													
Specification of the research or development task													
Compilation of the theoretical background/framework/background material													
Data acquisition													
permits													
collection													
Methods													
studying													
selection													
application													
Results or development proposals etc.													
analysis													

conclusions																
Writing																
Evaluation																
proofreading																
pre-examination																
submittal of the thesis																