DIGITAL: Multidisciplinary and multidimensional in the classrooms

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1. ABSTRACT

In this paper our aim is to analyse and present some pedagogical paths that prefigure and guide the teaching-learning devices developed "around" the digital tools. In this context issues related to the implementation with teaching methodologies and teaching techniques acquire a new dimension due to the need of transpose them into online learning environments (technologies to teach to technologies to learn). This starting point is a deep understanding from the analysis of actors in the online learning process: student, teacher, platform and e-contents. Thus, it is our goal in this chapter to promote digital education, think of teaching methods, tools and learning processes, to adapted to eLearning

Keywords: digital, e-learning, methodologies.

2. INTRODUCTION

Nowadays, in different areas of social, economic and professional life such as education, both formal and informal (at school, university or educational training), digital awareness is omnipresent through a panoply of communicative formats like written texts, images, audio files or videos that are presented to us at a high speed and come one after the other frenetically. So, in the actual knowledge society, the information and communication technologies, from now on Digital Techonology, are a fundamental factor in the construction of new and extensive learning environments, turning these into more attractive and adequate spaces in which meaningful learning can be fostered. In this area, the so referenced "Livro Verde para a Sociedade de Informação em Portugal" (1997) along with Castells (2003) emphasizes that "the learning autonomy that these technologies allow, is particularly adequate for adults whose level of education, maturity and discipline (even though, the may sometimes need a little bit of help and orientation, regarding the use of technology) enables efficient self-learning that, however, must be prepared and fostered through the developing of especially conceived contents for that matter" (p.76).

Various theories have tried to explain and situate the learning and teaching process, which is in fact of complex and multidimensional understanding, Moran (2007). Thereby the discourse about the learning and teaching process is constructed and reconstructed, integrating in its analysis and reflections, concepts and ideas that characterise the different parameters. On the basis of Capra's (1997) definition, we understand the word paradigm as a practice shared by a community which is based upon a series of concepts, values and perceptions that allow it to

organise itself. Accept and respond to a specific context requires a reflection that must be based on a model that helps its understanding and supports the action. This is how the paradigmatic field is drafted. In the field of education, the different paradigms are the foundation for teaching models that lead to diversified learning contexts, where the five agenda points for teaching by Sprinthall e Sprinthall (1993) –teacher, student, strategies, contents and evaluation- take on different positions. Whatever the context where learning is developed, the digital technology are surely present on it. They challenge not only the teaching and learning process regarding its organisation, but also the teacher in terms of a new contextualisation, which leads to the enablement of a new resource.

As the integration of the Digital technology in curricula is a complex matter that goes beyond the access and the technologies involved, there are a lot of questions raised regarding those who have the responsibility of teaching in an online environment and who try to respond to a series of new challenges presented by the actual forms of information dispersal (Romanville, 2001):

- How to encourage a culture of the eLearning (want to learn; know how to learn; be able to learn) based on both autonomous practices and knowledge transference, in a moment when the teaching systems are requested to participate in the preservation of competitiveness and in providing adaptable individuals (performants with a potentiality to action) to the working market.
- How can the pupils, students and learners give a new meaning to the teaching and learning process (Develay, 1996)? A path that meets the competences' needs required by the market.

This present chapter is based on the innovation provided by the digital technology, more specifically the use of virtual environments, designed for adult educational and formation purposes and fit in by various teaching and learning methodologies.

In this sense, the following is an outline of the main structural pedagogical items that characterise one of the teaching models applied at Universidade Aberta (UAb) in Portugal, the public university of distance learning, as well as a description of the technological resources available in the Moodle platform that we believe are interesting for this study. Finally, based on the methodologies previously referred and regarding the development of the selected teaching model, we describe he pedagogical tools and link them to the different process of learning.

3. BAKCGROUND

3.1 LEARNING METHODOLOGIES

All the changes undergone by society reflect on a change regarding the emerging educational model. We do not have as much time to engage in the transmission of simple knowledge, of norms and representations and we do spend more time in learning how to educate ourselves. According to Rey (1996), knowledge building is an illusion: content's meaning remains crucial to create new ideas. This is why the actual meaning of competence nowadays reflects on a lack of actualization in regards to the pedagogical trends. For instance, Carl Rogers' model (Person-centered Approach and Counselling), dominant in the 1970s, highlighted the relationship between the master and the student and did not ask about the nature of the ideas being transmitted; or the formal pedagogy of "intellectual capacity" (with the slogan "learn to

learn") in the 1980s, or the constructivist paradigm (Jonnaert and Vander Borght, 1999) in the field of Sicence of Education.

Therefore, it is necessary to identify the "know" and the "competence". To "know" refers to the scientific knowledge in the areas of reference adapted for teaching and learning. It is around the teaching and learning processes that an educational project can be developed: in fact, as pointed out by Y. Chevallard (1985), the scholar system is an acquisition of a different knowledge than that we learn on a daily basis. According to L. Allal (1999), "competence" includes miscellaneous related knowledge, can be applied in different situations and it is goal-oriented (the solving of a situation, task or problem). In online teaching and learning, the competence allows the progression of tasks and enhances a consistent learning. In fact, after the definition of competences, we can design didactic sequences in a contextualization- de-contextualization- re-contextualization dialectic (practice, analysis, reinvestment). This way, the teacher can intervene in the learning process (diagnosis evaluation, group formation according to needs, formative and summative evaluation, correction, among others).

With regards to the content in online teaching, the teachers must learn to create educational contents oriented to the characteristics of this specific context: the virtual classroom. To do so, they are many skills involved that go beyond the content making itself. Being able to summarise your ideas, to map them, to formalize them and insert them in a virtual environment is a fundamental competence in an online teacher working on a virtual context. In order to do so, there are plenty of teaching methodologies and teaching techniques.

Expositive teaching

It is about the transfer of a particular knowledge, piece of information or content that can be followed by questions made by the students or by the teacher. In the 1970s and 1980s, it lost ground with the group dynamic techniques. In the 1990s, "Slideshow" opened a new window for this approach as it managed to remain relevant for motivated audiences that wanted to learn the offered content.

Interrogative or participative teaching

The adoption of this pedagogy allows to diagnose the knowledge (therefore, the needs of the students), and take advantage of their experience and prior knowledge, taking into account their points of view and perspectives, and control the level of acceptance and understanding of the presented topics. It appeals to the students' awareness as it acknowledges questions that promote a motivation for learning. When a question (assuming that the topic being discussed is relevant to the students' needs) is raised before the answer is provided, the student is challenged to use and relate to his/her prior knowledge. Interrogative or expositive pedagogies guide the productions by the students. They have to answer the questions, to participate and to contribute but they do not invent, create or innovate. Some play-based pedagogies belong in this category.

Demonstrative teaching

This methodology consists in the transmission of techniques that aim to the repetition of procedure by demonstration: explanation-demonstration-application. The student practices, going through all the stages, takes awareness of the learning being carried out and enlightens the doubts. There is no place for appeal, creativity, development of autonomy or effective

engagement of that who is learning. The student is led to a mechanic application of pre-defined procedures that are not questioned whatsoever.

Active teaching

The philosopher Diógenes stated that the best way to prove movement to someone who doesn't believe it exists is by *walking*. Active Pedagogy encourages students to *walk*, to be active and willing to consciously be involved in their own educational process. Knowledge is in every students' mind. The teacher's task is to create situations that would allow students to create their own knowledge. Precisely, active pedagogy consists in rousing a conscious and voluntary action in the students by creating simulated situations out of real life.

Co-active teaching

Based upon the same premise as active pedagogy, co-active pedagogy is characterised by having students work in small groups. It encourages the socio-cognitive conflict that, emphasised by socio-constructivism, refers to the confrontation of the students' different points of view. From there on we assist to the outbreak of new representations, new solutions to problems found in society. It derives from the movement for a progressive education associated to John Dewey (2002), that preconizes pedagogic approaches that include experimentalism, a conscious concern about the students' needs and inherent motivations as well as about their learning pace and individual differences. It also stresses the necessity to never detach theory form practice. This vision enables students to engage and feel motivated towards the learning being carried out. Oriented towards problem-solving, it requires the participation of every group member according to their capacities and it promotes previously decided, planned and organised cooperative work.

Student centred teaching

The flipped classroom takes advantage of technologies and under its premises students learn at home with the support of the internet and practice, assimilate and solidify the learning in the classroom. This methodology reverts the 19th century educative logic: the focus is not on the teacher teaching (meaning providing knowledge), but on the student learning. The role of the teacher is that of the "acompañante cognitivo" (Tedesco, 2010), that is, the teacher becomes a guide that gives in the focal part in the teaching and learning process to the student and focuses on managing the knowledge so that it is more productive in the long term. The teacher also encourages reflexive learning by having the student draw conclusions about the contents and create hypothesis that can be corrected or accepted after a productive discussion with the teacher and rest of the class.

Open Pedagogy

The wide range of variations in the many recent definitions of open pedagogy makes it increasingly difficult to understand the term. The term "open pedagogy" has a long history and has been used in many contexts. But a single canonical definition of open pedagogy has not yet been found. For example, Elliot (1973) describes a tension between "closed" and "open" pedagogies with the former tending to be more focused on didactic discussion and the latter being connected with leading less formal discussions and students co-creating the context of the class. Mai (1978) discusses open pedagogy in the context of creating an "informal classroom where children might be trusted to learn by exploring according to their own interests, instead of being bored, demeaned, and alienated" (p. 231). Dufeu (1992) argues that open pedagogy is a

philosophy in which the content of the course, as well as its progression, is determined by the needs and preferences of participants. Daniel (2004) refers to open pedagogy as one "that treats the student as an intellectual equal" (p.9).

The association of "open pedagogy" with student-centered approaches has been strengthened in recent years concurrent with the development of new technologies. Hodgkinson-Williams and Gray (2009) use the term to refer to "the opening up of educational processes...enabled by Web 2.0 technologies" and argue that open pedagogy will play a more transformational role than open content (p.101). An Athabasca University white paper written in 2011 associates open pedagogy with learning digital literacies and teaching that are centered on the pedagogy of discovery (Day, Ker, Mackintosh, McGreal, Stacey, & Taylor, 2011). Hegarty (2015) defines open pedagogy as a broad range of attributes from participatory technologies to innovation and creativity.

Indeed, many of these pedagogies are inspiring, have the appearance of effectiveness, and seem worthy of replication. However, for an eLearning culture, the digital e-learning supported by autonomous practices and knowledge transfers all these pedagogies must be present.

3.2 TECHNOLOGIES TO TEACH TO TECHNOLOGIES TO LEARN

On the path that drives technological applications to teach technological applications to learn, it is important to know the pedagogical practices centered on a real activity of the learner. For Lebrun (2008) exists 5 characteristics of the learning process:

- Inform - The knowledge and their support;
- Motivate - The general context and the didactic environment;

- Activate - The skills (analysis, synthesis, evaluation ...);
- Interact - The use of various resources;
- Production - The personal construction.

If these 5 characteristics represent the learning process, it is important to use them as a check-list to develop technological tools available to the student and to evaluate their quality.

4. AN ONLINE COURSE: STUDENT, TEACHER AND DESIGN

Actors in the online learning process: student, teacher, platform and e-contents.

4.1 STUDENT IN ONLINE COURSE

The digital has changed the profile of the student. Today, the students are:

- Trend to multitasking and multiscreen. - They perform several activities at the same time and can consult different devices to obtain information.
- Potential creators of content. - Not only consume, but create a reputation on the web from the content they publish and share.
- Flexible and adaptable.- In the territory of the web there are no possibilities of rigidity or control, so they need to adapt to phenomena such as big data derived from the large volumes of information that are renewed at every moment, as well as the diversity of applications, spaces and web content.
- They build a digital identity on the web.- At the same time as face-to-face, they value their digital identity on the Internet as well as the configuration of different levels of privacy.

- High Internet consumers.- They were born and live with the Internet.
- Self-taught.- They have learned to solve problems of ignorance through search engines, social networks, communities of practice or learning. Your level of use may vary depending on your needs, expectations and interests.
- Collaborative.- Collaboration is part of their self-management, giving and receiving timely information is the key to solving their problems, building their identity on the web and their own learning. Some of them engage in common causes that raise collective interests. (Prensky, 2010)

According to these characteristics we believe that the student should have an active role in relation to the teaching and learning process. Not only concerning the praxis of it (do things), but specially, from the knowledge building point of view. In the same way that we construct reality with Adelson's chess (1995), reality takes form in our minds. This construction has to be taken considered when designing the online course. Some questions must be raised regarding the tasks and course design, such as: how will the student understand this task? Will the pedagogic goal be clear? Will he know exactly what we are asking for? Task instructions and contents must be clear and never an obstacle to the learning process. In the same way, when it comes to creating content through digital tools like video or softwares, this must be adaptable to the online environment where it will be available and must respect the particularities of it. In this sense, editors' promises with free online solutions are many times a transposition of face-to-face teaching texts that don't match the teaching-learning idiosyncrasy in online and digital contexts.

4.2 TEACHERS IN ONLINE COURSE

But what is the role of the teacher in a society with such a big information independence? Due to all these changes, online University teachers see their roles being altered. Information is available: the teacher must adapt and use a more active methodology, one that considers the students, the spaces, the contents, the goals and the competences to acquire. The optimization of the teacher's role consists of being the information organizer, the guide of the learning process and facilitator of the process of knowledge transmission. This part is especially important for the online teacher. The online teacher must be not only an expert on the matter (so that the most clear and precise documents are chosen), but more than anything, he must be a guide for the information available at the platform. He must consider:

- Precision in the instructions.
- The order and manner in which content is presented.
- The most suitable formats to show the contents.
- The student's expectations: redundancy diversification and multiplication (as there are as many perceptions as students in our class, the teacher must communicate and transmit knowledge in different ways so that every student is able to assimilate them).
- Permanent knowledge adaptation.
- Debates within the group in order to activate personal reflection.

The teacher has to transmit the information and be able to adapt the contents and know-how to the students who discover, assimilate and share the knowledge. This way, there will be a

clearer tendency to deeply reconstruct knowledge and, therefore long term memory, content recovery and behavioural change.

4.3 PEDAGOGICAL DESIGN AND DIGITAL TECHNOLOGY

The deconstruction-reconstruction occurs no matter the educative context. Nonetheless, this concept helps to perceive online learning. The web as well as all the other digital tools that enable students to acquire knowledge (social media, blogues, wikis, GAFAM - Google, Apple, Facebook, Amazon e Microsoft - etc) become more interesting from the deconstruction-reconstruction point of view. Students are able to comment on, criticise, enrich and refine teaching and the knowledge available in the virtual space. Knowledge is not transmitted but co-constructed. The deconstruction-reconstruction process is extended to the learning community. Each student deconstructs and reconstructs his/her own knowledge when commenting on or sharing information online. At the same time, the learning community is given the chance to deconstruct/reconstruct knowledge through the information previously posted online.

According to the constructivist theory, the learner is situated at the origin of an active process that leads him/her to deconstruct (deconstruction-reconstruction)[1] the prior knowledge stored in his/her memory. This theory challenges the transmissive learning model[2]. The appropriation of the deconstruction-reconstruction concept by the teacher makes him/her examine his journey as a teacher.

Bourgeois and Nizet (2005) explain that the student's deconstruction-reconstruction

[1] Jean Piaget , constructivist theoretic, talks about assimilation-accomodation to explain the development of cognitive capacities. Here, the term deconstruction-reconstruction is used to distinguish the development of the cognitive process from the learning process.

[2] Here, the transmissive model refers to the traditional teacher-student knowledge transference model.

process consists of four stages:

- Initial educative situation: the learner is confronted with a message (from the teacher or his/her peers).
- Knowledge structure activation: when receiving the message, the learner will activate whatever he/she knows about the subject or other related topics. It will activate his/her memory.
- Selection, enrichment and processing the educative message: the student processes the message based on what he/she knows already. Result: the educative message is analysed by the student who alters and enriches it.
- Assimilate the message or accommodate the knowledge: the "reformulated" message may be assimilated by the structure's prior awareness or it may lead towards a conciliation. That is, it may be accommodated to their prior knowledge. The assimilation occurs when the educative message is close enough to the prior content's point of view and that is called into question (for instance, when additional information is acquired or when further developing a concept). There is accommodation when the educative message challenges the prior knowledge and the learner is forced to reorganise his knowledge (see or do something new or discover a new concept).

For example, when teaching a foreign language one can easily observe this process in which learners of a new language activate their knowledge regarding other languages and relate them, analyse the already acquired structures (educative message) and adapt them to new

linguistic reality (accommodation). This cognitive process is reflected in the errors as indicators of the process' evolution. A common error in Portuguese speaking students learning Spanish, is to write "cozina*" when it is in fact not possible to write "zi" in Spanish. Therefore, they never saw, in Spanish, the word "cozina*" (in Portuguese *cozinha* para "kitchen"), but "cocina". This mistake shows that learners accommodate new knowledge to the prior information they have creating, thus, a new reality.

There is actually an optimization of learning when knowledge can be conciliated and a transformation of both attitude and representations takes place. According to the constructivist model (Bruner, 2001), the deconstruction-reconstruction of knowledge is: "learning is not about substituting prior knowledge for new, but about transforming prior information into new concepts and knowledge".

4.4 LEARNER-CENTRED APPROACH IS A PRE-REQUISITE IN E-LEARNING

Already in 2014 the Online Business School pointed out that in 2019, traditional universities would increase by 50% their online courses offer. This piece of information gives an idea of the impact that e-learning may have in the future regarding the teaching and learning process in formal education environments. This tendency might play a key role in the success or failure of universities in the future. We know that e-learning has its own parameters and that we, as teachers, must keep in mind this model's idiosyncrasy to ensure its success. Actually, e-learning has self-identifying characteristics that differentiates it from face-to-face traditional instruction. Online learning may have a high level of non-synchronic study: students and teachers are not in the same classroom at the same time. Therefore, the dynamics the teachers

propose must be different and adequate to the communicative situation. At the same time, there is the possibility of having synchronic classes in e-learning and distance teaching, but never in the same physical space. Many online universities support videoconferences as a type of tutoring, so that students can comment on the topics or raise questions about them, and also as a way to provide an affective dimension to the course.

On the other hand, the typology of students is much more varied than in face-to-face courses, as this kind of educative environment is designed for working students, such as students that already are in the working market and that wish to add value to their curriculum. As one can see, this student profile (employed or unemployed adults with a high education degree parallel to the online course) is not exclusive but frequent in e-learning, and must be taken into consideration because it can modify the course's didactic intervention that should be adapted to the student's circumstances and universe.

Both e-learning and b-learning courses use multimedia learning materials mostly. These resources promote learning and are adequate to the context in which it takes place. This way of understanding learning is behind the use of ICTs, that break out in the world of education trigger a change in the traditional model in which the teacher was the main source of reliable information and, at the same time, protagonist of the learning process. Autonomy, self-learning, flexibility and collaborative and ubiquous work characterise this new way of understanding education in which the teacher must adapt and apply a more active methodology that will consider the students as social agents, the contents, the materials, the goals and the competences. For example, correction in foreign language teaching is condition by the context where learning

takes place. The non-synchronic component encourages teachers to offer language correction resources as an alternative to other resources frequently used in face-to-face teaching. Within this line, the continuous evaluation methods (not exclusive to distance learning) are favoured by digital tools and Learning Management Systems (LMS), that facilitate the content evaluation process.

The students' characteristics: working adults with a high education degree prior to the online course. Even though it is less common nowadays, many of the online students have never experienced a fully online course or, if they have, it was unsuccessful. We know, for example, that the success rate for free MOOC courses that are very attractive and interesting from the content point of view, is very low as they are not especially didactic in their premises (Kolowichm 2013). We, as learners, are used to a face-to-face formal education, as well as we are used to an informal online learning thanks to the web and our informal learning environment. Our Personal Learning Environment (PLE) is formed by many elements (more or less explicit) that are usually connected to formal or informal learning. generally, formal learning doesn't take place in formal courses. This is why it will be crucial to provide learning tools to the students so that they can be successful during the course, as well as making sure that the online component is not an obstacle to it.

There is a difference between a prototypical e-learning student and a face-to-face learning one. Because of this difference together with the specific characteristics of the online student, pedagogical design should consider the environmental and personal peculiarities of this typology.

The main priority in this environment is to focus on the student as a social agent, as

responsible for his/her own learning process and as the only constructor of knowledge.

The authors believe, just like Watzlawick (2011) believed that "it is impossible not to behave", that it is impossible not to learn. In effect, the teacher's role is to optimize the learning process, making it more productive and long lasting. In order to do so, it is fundamental to take into consideration the student's cognitive and social background. In this sense, the teacher as a learning guide must privilege the selection or creation of content, the gradual adaptation and distribution according to the didactic goals and the link among the interdisciplinary elements. The teacher must manage the information that is beyond the classroom so that it meets the student's needs and the discipline's goals.

But if knowledge is available online and the construction takes place in the student's mind, how can we optimize the learning process? We should promote the learner's autonomy towards his/her own learning process. Promoting autonomy as a tool to analyse, manage and choose pertinent information together with other skills will encourage the most important competence in the student: procedural competence. In other words, the student will have enough tools to face a text (written, audio or multimedia) from a critical perspective that will help him/her value his/her validity promoting the independence of formal learning.

This independence from the formal component will be the subject's ultimate goal so that he/she can free himself from the teacher tutorial and continue the learning process on his/her own. So in an e-learning environment where the average student is available and in contact with peers of very diverse backgrounds and origins, it is necessary to consider the student as a central piece in the learning process. In this manner, the authors think that by merging learning and

teaching, learning actually happens. In the active process of knowledge construction, the student goes from apprentice to learner demystifying the idea that knowledge transmission only happens when the emissary (teacher) is copied by the receptor (student). Proven ideas such as the construction of reality in the memory, selective information processing, or even change blindness support the theory that says that our brain builds reality according to expected parameters, which proves that we are actually active when processing and selecting information and where this goes. Taking these elements into consideration will provide e-learning with the productivity and prestige it needs to become a successful subject.

5. SHORT DESCRIPTION OF THE AVAILABLE RESOURCES IN THE MOODLE E-LEARNING PLATFORM

Universidade Aberta's pedagogical model (Pereira, A., Mendes, A. Q., Morgado, L., Amante, L., & Bidarra, J., 2007) is put in practice with the digital support of e-learning platoform Moodle. This LMS platform was developed by an Australian teacher, Martin Dougiamas, in the 1990's and it was thought to promote student-centred teaching through knowledge construction supported with collaborative learning and self-discovery (Dougiamas, 1998). Moodle, philosophically and pedagogically based on the socio-constructivist model, enables the creation of didactic material, digital content management and the evaluation of student's intervention through its online activities and resources prioritizing transversal communication. Form the usability's point of view, the teacher is faced with a very easy to manage and ductile system that allows him to create and personalize the interface. Gómez Rey

(2009) puts Moodle at a head-star position regarding other e-learning platforms precisely because it offers more versatility regarding module design and also because of the worldwide user community that support, participate and work in it giving raise to new versions and actualizations.

In order to get a better understanding of the resources this e-learning platform provides, it is crucial to analyse the concept of learning behind it. According to the socio-constructivist assumptions, learning is a process in which an individual builds knowledge by interacting with the surrounding environment and by constantly confronting the prior knowledge with new experiences. In this approach, the individual controls the learning process that develops through collaborative work, active participation and critical reflection. In this way, from a formal education's point of view, in order to achieve significant, constructive learning, the teacher must provide authentic teaching materials that will trigger the participation and active knowledge construction. And so, in today's society of information and communication that generates knowledge as fast as it rejects it, Peña (2006) says: "knowledge doesn't flow one-way, it is built collectively and, once it is transformed, it becomes available to users anywhere"[3].

E-learning platforms like Moodle emerge as a way to embrace this new challenge democratically in different teaching methodologies (face-to-face, b-learning, e-learning), as they successfully enable the implementation of the pedagogical assumptions in a very innovative way (Gómez Rey, 2009). Indeed, it could be said that this (and other) e-learning platform not only contributes to improve the teaching and learning process by means of digital but tools but also

[3] Authors' translation from: "el conocimiento ha dejado de fluir de forma unidireccional para construirse colectivamente y, una vez transformado, ponerse nuevamente a disposición de los usuarios" Peña (2006).

that the active interaction in the platform is a motivational element itself: the simple fact of accessing the contents through a screen is very satisfying for some students. It is very important to take into account affective factors like motivation and fear of failure as they play an important role in distance learning as well as in knowledge creation processes. In words of Soliño: " in order to have significant learning, the student must be motivated and in order to be so, the activities and language they learn must be authentic and provide useful, individual knowledge".

Hence, the e-learning platform Moodle is an open access to information that, actually, offers a variability of digital, interactive tools that are easily adaptable to the students' different cognitive profiles and to the teacher's methodology. The different resources could be organised in the following way:

- Communication tools: forums, chats and wikis.
- Evaluation tools: tasks, questioners, quizzes.
- Content presentation/distribution tools: web page; glossary, lessons.

Among all the tools available in Moodle, the authors will describe those they believe to be more pertinent to the current chapter.

Adverts

A tool to reinforce the communication with the students: a date, a notice, an accurate note, etc.

Chat

This synchronic communication tool can be used in different ways depending on the didactic goal. The teacher may decide to create a chat to discuss very specific matters or a

general chat in which two or more students can interact and exchange ideas regarding the subject's topics or a specific task set by the teacher.

Documents

It is a useful tool for student information: presentation of an example to reinforce learning or an application to contextualize learning.

Forum

It is the main non-synchronic communication tool among the participants. It is very versatile and they can serve as a consultation instrument (general forum) through which relevant information can be posted. There are also open debate forums that contribute to student interaction (student forums) and to teacher-student communication. It is also possible to develop didactic activities that imply web content consultation and a posterior written reflection, and they can even be used as evaluation tools among peers.

Glossary

This tool works as a dictionary due to its structure of entries followed by a lexico-graphic item. The glossary can be created by the teacher or by the students that can add as many word entries as they want. This allows to develop the students' autonomy and critical reflection.

Podcast

Podcasts can be created in Web 2.0 tools such as Podomatic, MyPodcast or Podbean, or through sound editing software such as Audacity. In teaching, there are teachers who make them available in Web 2.0 tools, but others choose to put them in the Learning Management System, Moodle, *Colibri.* He novelty of Podcasts in teaching does not reside properly in the use of sound

or video, but, as Ally (2009) points out, in "ease of publishing and ease of subscribing". Some Podcasts combine music and locution, but others are testimonials, presentation of contents or reflections on certain themes.

McCombs et al., 2007 and Salmon et al., 2008 report another type of Podcast, called enhanced Podcast, which combines audio to the still image. In the Universidade Aberta, Portugal, we use the Podcast and the *Showcast*. The term *Showcast* designates a PowerPoint document with didactic purposes that integrates text, image and audio / video. The Podcast covers also the video format, called vodcast or vidcast or screencast, when the images correspond to those of a computer screen.

***PUC* – Curricular Unit Plan**

An agenda to describe the different periods, the different activities, the evaluations and the exchanges. A tool that allows the student to know the objectives, skills, methods, instructions, deadlines, criteria and perspectives of the teacher's evaluation.

Questioner and Hot Potatoes

These are two evaluation tools that enable monitored practice of specific contents (they are very effective to systematize grammar rules in foreign language training) in question-list based format. Both tools offer various possibilities regarding test design: multiple option; true/false; pairings; numerical; open/closed response; *cloze*; etc. The teacher will decide the number of attempts that are allowed as well as the value given to every correct/partially correct answer.

Task

It is any activity given to the students. It could be set as an individual or collective task, leaving it to the teacher's criteria to determine the most adequate dynamic for every task. In the same manner, the task may or may not be available for evaluation through a computer file in the form of text, graphic image, video, audio, etc. If the task is eligible for evaluation, the student will receive feedback in the platform where he/she can also see the corresponding given grade.

Videos

As a teaching tool, some research (Fisch, 2001, Anderson et al., 2001, Boser et al, 2003) confirms that the pedagogical use of video has a positive effect on learning. According to Karsenti (2012), the use of videos would facilitate access to information and stimulate student motivation.

The video documents represent two major interests:

- A positive attitude among students: motivation, confidence and speaking. Video documents are a way of motivating them to learn the language.
- Teachers can also use video to enter a subject; illustrate the theme of the course.

Web page

The platform enables the teacher to design simple pages in html that can be used to present content and information in diverse formats (text, PPT, audio or video, for example). Indeed, it is also possible to create links to pages outside the platform so that the didactic materials are always authentic and representative of the area of knowledge being developed.

Wiki

This is a collaborative writing tool. The wiki is a web page that students create together,

straight from the internet without any HTML prior knowledge. Teaching tasks that imply the use of a wiki stimulate collaborative learning and self-discovery, two key elements in the learning process.

It is clear from the description of these resources and digital tools that the e-learning platform Moodle not only enables the normal instruction of any subject but also allows teachers to design courses that meet the student's needs and expectations, encouraging collaborative work among peers and the individual construction of new knowledge. Characterised by its simple and intuitive functioning, Moodle has become a realistic option to disseminate a versatile, digitally enriched teaching method that enables the teacher develop his/her pedagogic work and guarantee the success of the learning process. Subscribing Warschauer & Whittaker, 2002: "each teacher will have to find her or his own way, based on the goals of the teacher and the program, the needs of the students, and the materials and technology available".

6. BUILD E-LEARNING

The learning is not built on a simple transfer of the taught subject (mainly with Digital Technologies) but on the personal construction that the learner will undertake. To teach is to tell a story with a context, twists, actors...

Thus, to promote digital education, one must think of teaching methods, tools and learning processes. The table below can be used as an analyser of elearning.

Table 1: Analysis Digital Technologie and e-learning.
Source: own elaboration

TOOLS	ACTIVITY	LEARNING METHODOLOGIES	LEARNING PROCESS
Adverts	To organize with a view to deadlines	Expositive teaching; Active teaching; Student centred teaching; Open Pedagogy.	Inform
Chat	To dialogue with peers	Expositive teaching; Interrogative or participative teaching; Co-active teaching; Student centred teaching;	Inform Activate Interact Production
Documents	To understand and concretize the content of the course	Expositive teaching; Demonstrative teaching; Student centred teaching.	Inform Activate
PUC	To become acquainted with the content and the steps to take during the course	Expositive teaching; Student centred teaching.	Inform Motivate
Forum	To submit your production to others	Expositive teaching; Demonstrative teaching; Student centred teaching.	Inform Activate Interact Motivate Production
Glossary	To build personal content	Interrogative or participative teaching; Demonstrative teaching; Student centred teaching.	Inform Activate Interact Production
Podcast	To observe, to analyse, to interpret, to discover the operation, to comment	Expositive teaching; Interrogative or participative teaching;	Inform Activate Motivate

		Active teaching; Co-active teaching; Student centred teaching; Open Pedagogy.	Production
Questioner and Hot Potatoes	Self-assess To associate	Interrogative or participative teaching; Demonstrative teaching.	Activate Motivate Production
Task	To Discern To write	Interrogative or participative teaching; Active teaching; Co-active teaching; Student centred teaching.	Inform Activate Interact Motivate Production
Videos	To analyse cases, To capture cause and effect relationships	Expositive teaching; Interrogative or participative teaching; Active teaching; Co-active teaching; Student centred teaching; Open Pedagogy.	Inform Activate Interact Motivate Production
Web page	To explore	Interrogative or participative teaching; Active teaching; Co-active teaching; Student centred teaching; Open Pedagogy.	Activate Interact Motivate Production
Wiki	To define, search and categorize information	Interrogative or participative teaching; Active teaching; Co-active teaching; Student centred teaching; Open Pedagogy.	Activate Interact Motivate Production

7. CONCLUSION

Lebrun (2008) refers task sequencing as the essence of the teaching and learning process: the student must learn individually and at his/her own pace, gradually integrating every step of the way in a carefully established sequence, allowing connexions so that the content is assimilated. The Flipped Classroom is very effective for basic concept learning as well as for content application, which makes this methodology suitable for the development of certain skills and functions. Furthermore, the Flipped Classroom has shown to be relevant regarding the student's classroom involvement, their perseverance levels, task production, teaching program completion and self-esteem improvement.

The application of Digital Technologies in education, namely the Moodle platform, enables the teacher to closely supervise the student's learning process prioritizing self-instruction and it helps the student to easily manage a world of actual and global information, that moves towards a more interdisciplinary knowledge appropriation.

In this sense, online learning environments provide teaching strategy diversification, emphasising every student's individuality, autonomy and time management capabilities. In teaching interaction:

The authors verify how important it is to apply pedagogical models that orientate teachers into how to integrate e-learning platforms in education. The use of technology respects the learning pace of every student and enhances knowledge acquisition by means of interactive tasks, fast feedback response and goal fulfilment stimulation.

In knowledge society, multidisciplinary and multidimensional, two elements are essential:

- the technological innovation is crucial for basic training sustained by competences and technical, holistic information, a training that ensures efficient professional performance and, at the same time, values long-term, continuous learning;
- the conjunction between technological developments and pedagogical ingredients are important for digital technology to add value to learning.

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