

Chapter 2

Coresponsibility on Negotiation Process and Issues in Blended Instruction

2.1 Introduction

This chapter underlines the teaching-learning process mediated by technologies, along with the main theoretical assumptions regarding the development of OLEs, viewed through the concepts of multitasking, learning communities, focusing on the coresponsibility of the stakeholders on negotiation process within a blended learning environment.

Through the Internet, a lot of information tends to allow the interconnection among millions of people, institutions, companies, and education/research centers (Castells 2011). In this way, information networks have revealed a huge potential, enabling infinite communication between people, and eliminating the time and spatial constraints and barriers of identity and social levels. In the Information and Knowledge Society, space and time are no longer constraints of social interaction and technological innovations; they, however, seem to require an increasingly qualified working model, multifaceted and collaborative in the multiple forms of educational organization.

Although multitasking is not considered a novel concept, it has received increasing attention in recent years with the development of media and technologies, in general. Possibly, as a result of this phenomenon, psychologists and neuroscientists have been fascinated, for instance, with the limits of human information-processing; however, here, the main focus is predominantly on the “multitasking generation”. In the context of the younger generation, several authors have examined and discussed, since the end of the last century, different characteristics that tend to characterize the same phenomenon; that is, the evidence of digital technology as an integral part of the daily life of the students of the twenty-first century. In fact, the description of this phenomenon has given rise to different terminology, for example: Generation Nintendo (Guzdial and Soloway 2002), Net Generation (Hartman et al. 2005), Digikids, Instant Generation, Cyber Generation (Thieme 2006), Generation Next, Generation Z, Digital Generation (Tapscott 2009), Homo Zappiens (Veen and Vrakking 2006), Always On (Oblinger 2004), Neomillennial Learners (Dede 2005) New Millennium Learners (OECD

2008; Pedró 2006) or even Digital Natives (Prensky 2010). Each of these conceptualizations seeks to create a “tag” to identify the young generation on the basis of different related technology. Also, more recently, a multigenerational study demonstrated that Millennials (born between 1982 and 2001) were spending more time than Generation X (born between 1965 and 1976) and Baby Boomers (born between 1946–1964) on media-related active ties like Web surfing, texting and video games (Carrier et al. 2009). In brief, Millennials were more likely to multitask compared with the previous generations. In addition, some researchers have noted that the brains of our current generation adapt to the technology revolution in ways that are different than Baby Boomers and Generation X (Small and Vorgan 2008). In turn, Felder and Silverman (1988), reinforce that young people today tend to process the information in different ways. Hence, there is a need to adjust also the teaching methodologies used; in other words:

Students preferentially take in and process information in different ways: by seeing and hearing, reflecting and acting, reasoning logically and intuitively, analyzing and visualizing, steadily and in fits and starts. Teaching methods also vary. Some instructors lecture, others demonstrate or lead students to self-discovery; some focus on principles and others on applications; some memory and de-emphasize others understanding (p. 674).

With regard to the visual dimension, in particular, Felder and Silverman (1988) stress that students obtain information essentially through visual images, e.g., figures, diagrams, graphs, schematics, movies and demos. In line, Oblinger and Oblinger (2005) reinforce this idea, in so far as they consider that this generation is influenced by the use of images, more than by environments that only resort to use texts. Yet, from the perspective of the authors, Net Generation clearly shows the importance of interaction, since they enjoy the fast transmission of information, and notoriously loses interest/attention in contexts of low interaction (Oblinger and Oblinger 2005). Prensky (2010), in his book *Teaching Digital Natives*, adds the following:

By virtue of being born in digital age, our students are digital natives, by definition, but that doesn't mean they were ever taught everything (or anything, in some cases) about computers or other technologies, or that all of them learned on their own (p. 64).

Additionally, according to Pédro (2006), the New Millennium Learners (NML) are enthusiasts of the computers, creative on the use of technology and have a multifaceted agility in the “world” of digital tasks, featuring a wide variety of skills in the use of digital technology, able to perform multiple tasks simultaneously (e.g., watching TV, talking on the phone, and do homework at the same time). Hartman et al. (2005) associate this multitasking behaviour to carry out several activities at the same time, looking for constant communication, channels of interaction with the media and their own satisfaction through the handling of multifunction devices. In this sense, the quotation below expresses, in a way, how the digital media may be closely related to multitasking behavior (Dede 2005):

(...) my teenage daughter ‘does her homework’ by simultaneously reading her textbook, listening to her MP3 player, receiving and sending email, utilizing her Web browser, and dialoguing with six of her classmates via instant messaging (p. 7).

Pedró (2006) connects NML with fundamental changes regarding the level of cultural practices and social values. For instance, the NML are less controlled by adults, family or teachers, since they have autonomy to select what they see and what they can transfer (e.g., downloads, uploads). However, Frand (2000) argues that this generation assumes the following ideas: (i) computers aren’t considered to be technology; (ii) the Internet is better than television; (iii) multitasking is a way of life; and (iv) staying connected is essential. In addition, Pedró (2006) advances with the term *grasshopper mind* in order to characterize the behavior of NML, since they have a logical “jumpy” on ability to move from one subject to another, as well as on the speed of change in direction from front to back on a given subject. The intensive use of ICT tends to cause changes in the cognitive characteristics of the NML, namely in terms of their ability to concentrate and in need of immediate responses in the realization of multitasking. In other words (Pedró 2006):

NML have grown up used to: (a) Accessing information mainly on non-printed, digital sources; (b) Giving priority to images, movement, and music over text; (c) Feeling at ease with multi-tasking processes; (d) Gaining knowledge by processing discontinued, non-linear information (p. 10).

From this perspective, daily life tends to be increasingly characterized by instant communication through the use of technologies that enable synchronous type communication (e.g., messenger, SMS, MSM). The immediate responses, as well as the fast reaction velocity, seem to be increasingly frequent and necessary in personal communication of individuals (Oblinger and Oblinger 2005; Pedró 2006). According to Foehr (2006), young teens seem to embrace multitasking as a way of life. For instance, many teenagers send text messages during the day while they are engaged in school and social events. In turn, American teenagers sent an average of 3146 text messages per month in 2009, i.e., about more than 10 messages every hour of the month that they are not sleeping or at school (Entner 2010). Curiously, according to Madden and Lenhart (2009), one in three teens between the ages of 16 and 17 assumed the use of text messaging while driving. Indeed, students choose to have learning experiences, such as “digital, connected, experiential, immediate, and social” and reveal to have preference for learning spaces “digital, mobile, independent, participatory, social learning-to-be, peer-to-peer, visual, and kinesthetic and real world” (Oblinger and Oblinger 2005). In 2008, a study developed by Conole et al. (2008), pointed out some changes in the use of technology for learning, suggesting the integration of eight fundamental aspects in the practices/policies of the institutions, namely: “pervasive, personalised, niche, adaptive, organised, transferable, time/space boundaries, working patterns, integrated” (pp. 521–522). In general, this approach aims to illustrate the fact that students can use ICT increasingly as a privileged means to develop their learning to communicate with teachers, colleagues, and/or experts. Also, the results

revealed that students use technology in varied ways, adapting the communication tools according to their individual needs/preferences and to share ideas, knowledge and, even, to verify their own evolution (Conole et al. 2008). In this scenario, Redecker et al. (2009), reinforces that the new generation of students clearly shows complex learning styles due to accessibility and flexibility in the use of digital resources. Compared with previous generations, these new students (Homo Zappiens generation) acquire more information through images and in a non-linear way for knowledge construction. Thus, the students of the twenty-first century tend to demonstrate the following characteristics (Redecker et al. 2009):

- Prefer multimedia environments,
- Are constantly connected with their peers and most of the time via online,
- Require multiple consecutive stimuli (to avoid boredom),
- Are impatient, needing constant feedback and be observed while performing the tasks,
- Are social and pragmatic,
- Focus on team spirit, and
- Adapt learning to your individual needs.

Consistent with the trend already described, Sharples et al. (2007), presented the mobile (*m-*) *learning* concept as: “the processes of coming to know through conversations across multiple contexts amongst people and personal interactive technologies” (p. 224). Here, the conversation process is seen as primary guide of learning. Indeed, the mobile resources used for conversation (mobile devices) and sociocultural context appears to be important for understanding how the m-learning can be integrated in education (Georgiev et al. 2004). This trend seems to be more noticeable in some academic contexts (e.g., Universitat Oberta of Catalunya, University of South Africa, Korea National Open University, Queensland University of Technology). This modality of learning seems to offer new ways to extend education to the context outside the classroom (informal contexts) and to interactions of everyday life. Bates and Sangrà (2011) add the following:

Worldwide, more people have mobile phones than personal computers (...) The mobile technology has become more sophisticated, with larger, clearer screens, touch-controlled keyboards, and motion-controlled navigation, the potential for educational applications has also increased (p. 39).

Interestingly, in South Africa, taking into account the particular context and culture, great opportunities for the development of the modality of m-learning are being explored, specifically via short messaging systems, such as Visser and West (2005) explain:

In distance education, SMS can be used for student support and for urgent messages. The tutor can send the student personal message such as ‘For you to do’ (13 characters) in the short form ‘4U2do’ (5 characters) (pp. 132–133).

In fact, *mobility* and *ubiquity* of digital practices, namely mobile phones, networking, tend to be determinant characteristics of everyday life of young people also known as the “always on” generation (Oblinger 2004). Furthermore, the work carried out in wireless network, enables the mobility of students, making possible to be constantly connected (ubiquitous computing) (Dede 2005). In this scenario, more recent studies have associated m-learning with the *cloud computing* concept, emphasizing the promotion of m-learning in a more dynamic and flexible way (Christensen 2009; Gao and Zhai 2010). In other words (Gao and Zhai 2010):

Cloud computing is the basic environmental and platform of future mobile learning and supports and promotes the development of mobile learning through ‘cloud services’. But the mobile learning plays an important role in the information education, and becomes to a major choice in the school teaching, it also need the education technology workers to further research and discussion (p. 242).

General speaking, cloud computing systems are designed to provide services anytime and anywhere from any device (Dikaiakos et al. 2009; Kaufman 2009), and may, simultaneously, represent great educational potential (e.g., the reduction of costs) in various forms of e-learning (Al-Zoube 2009), as well as improve digital inclusion in the Information Society. According to Dikaiakos et al. (2009): “The key driving forces behind cloud computing are the ubiquity of broad-band and wireless networking, falling storage costs, and improvements in progressive Internet computing software” (p. 10). The authors suggest that the “cloud” can organize itself according to an approach which is restricted to a single organization or group (*private clouds*), available to the general public via the Internet (*public clouds*), or shared across multiple groups or organizations (*hybrid clouds*). It should also be noted that some issues relating to security, privacy and interoperability of data is identified as major constraints in integrating these systems (Bates and Sangrà 2011; Kaufman 2009; Mitchener 2008). In this sense, Bates and Sangrà (2011) underline the importance of the specific needs of each context by adding the following: “the concerns about cloud computing services disappearing if the hosting company goes bankrupt, and perceived difficulties in adapting services to specific local needs” (p. 29). In short, this generation can be identified through the occurrence of the following characteristics (Brown 2005):

- The use of webquests as a particular type of learning (learning by doing rather than listening),
- The multitasking phenomenon (the permanent use of technology accompanied by multiple stimuli),
- The need for immediate feedback, and
- The need for independence and involvement in the learning process.

In this way, the students of the twenty-first century tend to be autonomous in the selection of their learning styles, choose (most often) online readings, interactive multimedia presentations and group/collaborative work. In this sense, some perspectives have contributed to the emergence of different learning patterns,

reflecting, perhaps, a relevant impact on formal and informal learning process. Accordingly, Veen and Vrakking (2006) add:

(...) this generation is the first generation that teaches their parents how to use the forum, how to use a mobile phone, and to do their telebanking and other online bookings, this was the first time we can notice 'inverse' education taking place, a phenomenon never seen before (p. 50).

In an intelligent way, Redecker et al. (2009, p. 24) identify and categorize some characteristics of the NML in the following six dimensions:

- *Society* (e.g., ubiquity of ICT, ease of access and use, information overload);
- *NML's ICT usage* (e.g., preference for electronic environments, multiple media usage, connected, always on);
- *Personal attitudes* (e.g., active involvement, constant engagement, very creative, expressive);
- *Cognitive patterns* (e.g., non-linear, less textual, less structured, multimodal, visual, dynamic representations, discontinuous, cognitive overload, distracted);
- *Working attitudes* (e.g., less fear of failure, instant gratification, impatient, surface oriented, multitasking);
- *Social attitudes* (e.g., extremely social, egocentric, need sense of security).

In summary, it is important to strategically take into account the advantages of multitasking phenomenon for effective learning gains rather than superficial entertainment gains. Effectively, NML are the first generation that born and grow with digital technologies and, therefore, tends to learn differently, mirroring a relevant opening to diversity, social differences and sharing information, in general. So, it seems prudent to say that these students (NML) expect, at the beginning, more interactive and efficient pedagogical approaches, rather than traditional classes (in one direction) or face-to-face (F2F) without link to ICTs.

2.2 Coresponsibility in the Negotiation Process

According to Wenger (1998), the emergence of *Communities of Practice* (CoP), i.e., groups of people who come informally together to learn, build and are responsible for the management of knowledge, can be seen as a real educational solution. From the community concept, the (co) production of knowledge embraced by users (user-producers) – *produsage* – has been supported by various Web 2.0 applications (e.g., blogs and wikis). In fact, other forms of interaction, gradually, arise, including the designated virtual communities. However, Kester et al. (2006) argue that for the process of social interaction in this ecosystem (in particular at the level of cooperation) it is necessary to take into account three factors: *continuity* - two individuals that interact with each other must interact at least a second time, in the future; *recognizability* - all individuals can identify each other; and *history* - all individuals may be aware of behaviors occurred in the past.

On the other hand, Garrison et al. (2000), consider that the creation of an online community of inquiry is the result of a learning process that occurs through the relationship of three key elements: (i) *social presence*, which in online learning is described as the capability of the student to develop social and emotional competences, and is related to characteristics, such as affective expression, open communication and group cohesion; (ii) *teaching presence*, which presents an important contribution with regard to the student's satisfaction, perceived learning, and the role of the community. As a matter of fact, in the learning context, the quality of discourse and the level of depth are influenced by the metacognitive thinking, being the teacher primarily responsible for these effects; and (iii) *cognitive presence*, characterized by four phases of the inquiry process, i.e.: *triggering event*, *exploration*, *integration* and *resolution*. Indeed, this community seems to focus on online learning, interaction among participants, as well as the development of collaborative work. The knowledge, in turn, is acquired from the interpersonal relationships in which students are not passive learners once they actively collaborate and learn as a group (Garrison et al. 2000). Subsequently, the structure of the *Community of Inquiry* (CoI) framework was redesigned by Redmond and Lock (2006), originating the phenomenon "Knowledge in action". However, Garrison and Arbaugh (2007), in the context of higher education, showed this type of community mainly as a tool, aiming to critically reflect upon the learning processes and focusing, particularly, on OLEs. So, from the increase of OLEs and the consequent technological development emerge the first distance education (DE) experiences related with the use of e-learning platforms (e.g., LMSs). In this line, Zhang and Wang (2005), add the following:

In the early 1990s, having realized the great potential of online learning, some higher education organizations with advanced educational technology support started to develop online courses. (...) some educational and business organizations developed online teaching/learning tools (learning management systems), in order to meet the increasing need for education and lifelong learning (p. 245).

In higher education context, e-learning platforms are widely used as institutional promotion to attract target audiences, without a profound pedagogical change (Delta Consultores 2008), and at the same time regarded as one of the pillars of the promotion of student-centered education and lifelong learning (Bih 2007; Erazo 2006). However, some authors, such as Lewandowski (2003) and Bartolomé (2008), point out that fully DE (e-learning) did not reach all the expectations that had initially created, due to high costs and susceptibility of the environment to high dropout rates. As a result, inevitably, other modalities have emerged, characterized by a mix of distance and F2F learning environments. From this perspective, several studies have indicated the existence of a wide use of mixed solutions—*blended (b-) learning* (Aiello and Willem 2004; Gebera 2008; Lewandowski 2003; Marsh et al. 2003).

In general, the spectrum of different types of e-learning can be seen as a continuum from F2F (no e-learning) to fully e-learning (DE). With regard to the b-learning mode, three intermediate modes can be understood, namely: *Classroom*

aids, Computer Labs or Hybrid. In particular, in Classroom aids mode, the teacher uses ICT during the F2F lessons through the creation of a course website (supported by a LMS). Moreover, in Computer Labs mode, the course is mainly realized around PCs or laptop programs. On the other hand, the distributed (d-) learning mode can be hybrid or support courses fully in e-learning.

Inevitably, particular changes in online teaching and learning environments tend to occur; however, new educational environments require renewed attitudes and competencies of teachers and students, in order to avoid the traditional approach where the teacher is seen as the unique source of information/knowledge and students seen as passive receivers (Adell 1997). In turn, the effectiveness of education systems and distance learning, among other issues, is based on the ability to adapt the system to the different teaching and learning styles (Felder and Brent 2004). Also, online communities across a variety of platforms are considered privileged places of learning, which, due to their interactive and collaborative nature, enable the sharing information among several users, as well as the ability to motivate new people to use ICTs (Ala-Mutka et al. 2008). According to “engaged, empowered, enabled” logic, based on collaborative environments, Romeo (2006) notes that: “Anywhere/anytime learning will be characterized by student-centered, project-based learning with the role of the teacher and the learner redefined. The future will belong to the e-teacher and the e-learner” (p. 156). In this vein, the role of e-student and e-teacher is discussed in the following two subsections, respectively.

2.2.1 *The Role of e-Student*

According to Bruns and Humpherys (2007), the teaching-learning process has adopted new styles of work, promoting the concept of *produsage*, in order to emphasize certain skills and attitudes, namely:

- Creativity—students need to develop certain skills, in order to become co-creators, embedded in collaborative work environments, play flexible roles, and highlighting their self-efficiency for creative production;
- Collaboration—it is important to develop skills that will guide them to a shared (collaborative) participation/engagement;
- Critical capacity—students in co-creative contexts need to develop critical-thinking skills (Yeh 2012), in order to establish the most appropriate context for their involvement in the process of *produsage*. During the collaboration process, the critical meaning is indispensable, in order to give and receive constructive feedback;
- Communication—in a collaborative environment, there is a particular concern with regard to effective and assertive communication among students. In this sense, students need to be able to receive constructive criticism and available to communicate in creative processes with other individuals. These are aspects of communication that seem to need be worked specifically, rather than being

assumed, from the beginning, as inherent to the communication skills of the students.

In this scenario, Visser (2005) also proposes some practical suggestions to enhance the potential of online environments; more specifically:

- (a) Students can share and discuss the diversity in experiences and expectations present in the class;
- (b) Students can take an active role in providing evaluative feedback on the work of their peers;
- (c) Students can become sources of motivational support for one another;
- (d) Groups of students can build mutually beneficial collaborative relationships;
- (e) Students with greater experience in distance education can be encouraged to serve as a resource for students who are at risk of dropping out or falling behind (p. 299).

Thus, the Information and Knowledge Society can be seen as a collectivity of multiple learning opportunities. Knowing that the students with negative attitudes in OLEs are less able to understand the contents of the courses, it is necessary to construct feelings of trust, more dynamic and interactive paths, shifting the role of mere passive receivers to proactive agents in the search, selection, processing and sharing information (Howland and Moore 2002). In this way, it seems reasonable that the platforms (e.g., LMSs) as well as pedagogical models should try to fit to the differences of the students. Also, for DE institutions in transition to the Web (1.0/2.0/3.0), there are opportunities and responsibilities to redefine/readjust the role of the teacher and the student (Visser 2005).

2.2.2 *The Role of the e-Teacher*

Berge (1995), identifies four key-areas of intervention, concerning the general role of e-teacher. More specifically, he refers to:

- Pedagogical area—i.e., the e-teacher is seen as a facilitator of the teaching-learning process, stimulating group work, discussions and questioning;
- Social area—i.e., the e-tutor promotes relations between all stakeholders of the group, establishing, *a posteriori*, a harmonious learning community, constituting a group identity in sharing information;
- Management area—i.e., the e-teacher needs to concern with issues related to the organization, planning and management of the course, establishing rules and objectives; and
- Technical area—i.e., the e-teacher implements efficient technologies, focusing the attention of the student to the contents (e-activities), rather than to the actual ICT that is used.

In this context, Stevens (2010) also underlines that:

The relationship of e-teachers to traditional face to face teachers had to be considered, the creation of m-teachers and, subsequently, m-teams developed and administrative and technical support for virtual educational environment had to be provided (p. 235).

In the above line, in the United Kingdom, several Master’s programs (in particular ICT modules) have been realized in a b-learning mode (integrating a hybrid model with a F2F component, online, and video conferencing), enhancing the role of the e-teacher (MTutor) as manager of the online learning environment. An example is given below (Wheeler 2005):

MTutor was created by the University of Plymouth’s Faculty of Technology, the department specializing in research into artificial intelligence. (...) The designers of MTutor have incorporated an intelligent tracking system into its functionality, which enables course tutors to monitor students ‘ progress through a series of online activities. The ‘meeting minds’ occurs when the students within the clusters begin to discuss their solutions online and develop a community of practice through collaborative learning (p. 151).

Furthermore, Visser (2005) identifies some strategies (in terms of design, development, and implementation) as a key to increase the effectiveness of teachers in the context of distance learning, tabulated in Table 2.1.

Table 2.1 Visser’s (2005) strategies to increase efficiency in the context of distance learning

Strategies	Examples of teachers’ possible activities
Design	Employ deliberate, systematic course design and evaluation; Design course calendar to chunk submission of assignments; Design activities that embed software learning so students can adjust to the LMS; Design group assignments or activities; Create external administrative and technical support.
Development	Refine and reuse instructional materials; Develop clear assignment and activity directions; Identify outside resources for student support; Develop self-assessments and peer assessments where possible; Use self-correcting quizzes; Create FAQs and tutorials.
Implementation	Send group emails; Define a clear process for handling student questions; Provide sample products for highly complex assignments; Provide general class feedback on assignments; Create support groups or dyads; Restrict mentor communication with individual students and small groups; Share moderating roles with students.

As it is deduced from Table 2.1, in the whole of negotiation process, the implementation of more flexible online learning models seems to promote the adoption of open approaches to various forms of DE and training considering the particular characteristics/needs of each context.

2.3 Epigrammatically

From the previous sections, it is clear that a variety of issues should be taken into account for the development of OLEs, related with the coresponsibility of the stakeholders on negotiation process within a b-learning environment. The rapid development and availability of the Internet produced a sea of change, fostering fundament alterations in the way ICTs can be utilized in the classroom. Access to the Internet outside of formal classroom settings has opened up possibilities that were inconceivable 10 years ago. Gradually, and according to the twenty-first generation description discussed in [Sect. 1.1](#), for many students their home will be the principal place of access to the Internet and the word *classroom* will assume a whole new meaning.

The technologies, however, can easily become solutions looking for problems to solve, a trap that will be avoided by e-educators who have a vision for what they can achieve. It is naive to think that e-education can happen without the associated technologies, but it is perversity to think it will happen without teacher buy-in and participation in the vision-building that will be required. Solutions developed by instructional designers and multimedia specialists will not change the e-education world unless the teachers are the learning designers of the future. E-teachers will support and promote change when they feel they are an indispensable part of the process. In this endeavour, it is essential to embrace and integrate the appropriate techno-pedagogical strategies, as it is clearly explained in the chapter that follows.

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