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Lameras, P. , Paraskakis, I. and Levy, P.

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Please note Dr Lameras was working at the South East European Research Centre, Greece at the time of publication.

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Handbook of Research on Social Software and Developing Community Ontologies

Stylianos Hatzipanagos
King's College London, UK

Steven Warburton
King's College London, UK

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Chapter XIX
Using Social Software for Teaching and Learning in Higher Education

Petros Lameras
South East European Research Centre, Research Centre of the University of Sheffield and CITY College, Greece

Iraklis Paraskakis
South East European Research Centre, Greece & Research Centre of the University of Sheffield and CITY College, Greece

Philipa Levy
University of Sheffield, UK

ABSTRACT

This chapter focuses on discussing the use of social software from a social constructivist perspective. In particular, the chapter explains how social constructivist pedagogies such as collaborative learning and communities of practice may be supported by the adoption of social software tools. It begins by briefly discussing the social constructivist perspective considering certain pedagogies such as collaborative learning and communities of practice. Then, it explains how these pedagogies are reflected in actual practice by using a variety of social software tools such as discussion boards, blogs and wikis. Finally, the chapter presents the implications of using social software based on the impact of certain factors such as teachers' understandings of, and beliefs about, teaching in general. The purpose of this chapter is to support higher education practitioners in theory-informed design by distilling and outlining those aspects of social constructivism that addresses the use of social software tools. It is perceived that a gradual introduction of social software to institutional Virtual Learning Environments, with a strong focus on collaborative learning processes and engagement in online learning communities, will highlight the need for discursive tools, adaptability, interactivity and reflection.

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INTRODUCTION

The diversity of perspectives on, and approaches to, the pedagogical use of social software can prove overwhelming to practitioners and researchers alike. In order to make sense of this, this chapter explains how social constructivist theories such as communities of practice and collaborative learning may be assist in the use of social software. This chapter aims to explain the different pedagogical responses to social software tools and social networks regarding specific characteristics of learning, which may inform practitioners in their use of such tools. This is particularly useful in the context of e-learning where higher educators and researchers seek a clear understanding of the affordances of social software and guidance on how to use and integrate these into their educational practice. This may draw practitioners' attention to the relationship between espoused theories and theory in use (Argyris and Schon, 1974) and also for acknowledging curriculum design as a social practice (Conole et al., 2004).

Teaching and learning using social software may require teachers to rethink their beliefs and approaches in order to develop patterns of learning that at least allow and preferably encourage collaboration as a process of planning, criticising and evaluating. This could also allow learners to personalise their learning within a framework where teachers may monitor their progress. In this context, a better articulation and mapping of different pedagogical processes, tools and techniques may provide a pedagogical approach that can be regarded as more consistent and with teachers' theoretical and practical perspectives for teaching and learning using social software. As Downes (2005) argues, educators and practitioners should recognise that social software is not a technical revolution but is about encouraging and enabling collaboration and participation through applications and tools that can support the social constructivist approach to learning. However, adopting teaching and learning activities with the use of social software in a way that promotes interaction and collaborative knowledge building does not mean that it will result in learning per se. These practices require from the teachers an awareness of how students learn and this adds an increased responsibility for teaching and learning. Twigg (1994) argues that many students are concrete-active learners, that is, they learn best from concrete experiences where they engage their senses, and their best learning experiences begin with practice and end with theory.

The purpose of this chapter is to support higher educators for theory-informed design by outlining current issues of social constructivism in a way that assists the use of social software tools but also taking into consideration that creating a network of interactions between the instructor and the students may not lead to effective communication and collaborative knowledge building. For example, the design of a group project may not necessarily lead to the desired learning outcome. At best, it would appear that learning benefits can be achieved under certain circumstances. Students have to contribute to the learning process by posting their thoughts and ideas to an online discussion because learning is an active process in which both the teacher and the students should participate if it is to be successful. Research by Sharpe et al., (2005) provides examples, from a learner scoping study, about the roles of the teacher and the learner for ensuring and enhancing the quality of instructional design and how this relates to effective online learning processes. The scoping study highlighted the holistic nature of students' experiences of learning and proposed that learning design should focus on students' motivations, beliefs and intentions and the meanings they attach to e-learning. For example, as is well known, collaborative learning may not suit everyone (Laurillard, 2002, Mason and Weller, 2001). So a plethora of questions remain about how to design online learning activities whose purpose is understandable by the students. The important issue to note, from research in teaching and learn-

ing, is that there may be contradictions between what teachers and students conceive as effective teaching. Highlighting such differences may be helpful in assisting teachers to design learning activities that are adjusted to students' needs. For example, Jones et al., (2004) used semi-structured interviews to compare the student and the teacher perspective of what is good teaching. Students emphasised effective feedback, teacher enthusiasm, encouragement and good organisation and direction for learning. Teachers mentioned these but gave less attention than students to feedback, but added that disciplinary knowledge and technical expertise are important for students' learning. Laurillard (2002) and Thomas et al., (2004) also identified the importance attached by students to feedback, as well as teacher availability and approachability.

This chapter continues by briefly explaining social constructivist theory. This is important because it allows pedagogies to be described and related to social constructivist theory in terms of the use of specific technological tools and resources. It then discusses pedagogies that could be mapped to a social constructivist perspective such as collaborative learning and the idea of communities of practice. A number of issues related to these pedagogies will be highlighted. Then it explains how these pedagogies may be reflected in practice by using a number of social software tools such as discussion boards, blogs and wikis. Social software could be defined as technologies for the social construction of knowledge that emphasise the design of teaching and learning activities which promote collaborative learning processes and group interactions. Finally, the chapter discusses emerging issues regarding the use of social software in educational contexts. It is perceived that a gradual introduction of social software in the institutional context with a strong focus on collaborative learning and the creation of online learning communities may encourage teachers to design learning tasks which afford the use of these tools while at the same time taking into consideration students' own perceptions of e-learning and how they use technology to learn more effectively.

RETHINKING PEDAGOGY FROM A SOCIAL CONSTRUCTIVIST PERSPECTIVE

The social constructivist perspective views learning as a social activity which is created by the process of conversation, discussion and negotiation (McConnell, 2002, Ernest, 1995). In addition, social constructivists argue that a learner may be able to understand concepts and ideas by teachers or peers who are more experienced. This collaboration between teacher and student may be achieved in learning activities that are situated in real-world contexts. From this perspective, meaning making is the process of sharing perspectives and experiences through collaborative processes and within communities of practice. Therefore, learning can be derived from meaningful discussions with other peers who have similar or different perspectives based on their own experiences.

An important context for thinking about social constructivism is in relation to particular learning processes that are described from two concepts: (1) Vygotsky's 'Zone of Proximal Development (ZPD)' (the term became part of mainstream thinking in pedagogy since the translation of his Mind and Society in 1978) , and (2) 'Intersubjectivity' (Jonassen, 1999; Lave and Wenger, 1991). Vygotsky defined the ZPD as the distance between a learner's current conceptual development, as measured by independent problem solving, and the learner's potential capability, as measured by what can be accomplished under the assistance or in collaboration with more capable peers (Vygotsky, 1978). With practice and personal support, learners may increase their learning skills, until they can manage on their own (Cole, 1992). 'Intersubjectivity refers to the mutual understanding that has

been achieved between students through effective communication. The social constructivist theme is reflected in the way in which learning occurs through the process of intersubjectivity in the Zone of Proximal Development. That is, learning occurs through negotiation of meaning and communication between students and teachers within a context of real-world activities. Peal and Wilson (2001) summarise the design of web-based tools as ZPDs by adopting the following features:

- Learning activities that are part of real or simulated activity systems, with close attention to the tools and interactions, characteristic of actual situations
- Structured interaction among participants
- Guidance by an expert
- The locus of control passes to the increasingly competent learners

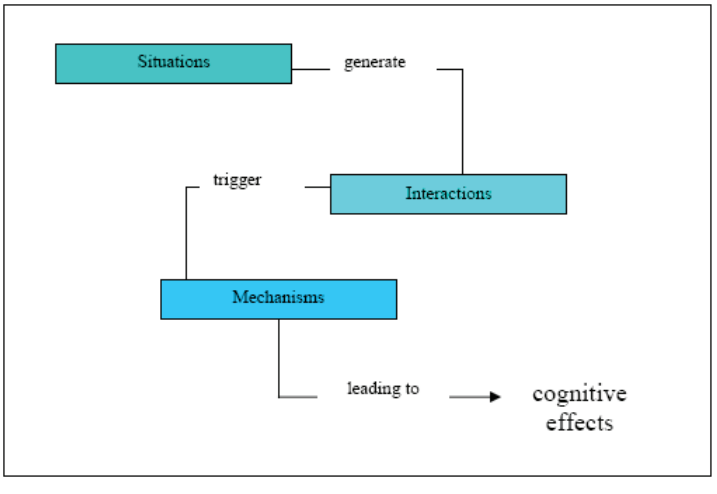
At the same time, there is a wide range of pedagogies that can be mapped to a social constructivist perspective such as collaborative learning (McConnell, 2002) and the accounts of community facilitated by technology with social and situated views of learning. That is, the idea of communities of practice (Lave and Wenger, 1991).

Collaborative Learning as a Process of Interaction

Given the potential of more able peers to help less able ones, researchers have tried to identify the characteristics of collaborative learning. For example, Goodyear (2003) argues that collaboration may be viewed as a mechanism for causing interaction among students which may enable certain processes such as explanation, disagreement and social negotiation of meaning. Dillenbourg (1999) offered an account of collaborative learning processes in terms of developing ways to increase the probability that learning interactions will occur within an educational context (Figure 1).

One way to think about these mechanisms constructively is to consider how these situations can be designed for online learning activities and how these activities can generate interactions between students. At the same time, a key challenge is the question of how to use these mechanisms in order to empower learners to engage actively with the range of tools and resources of the online environment. For example, online discussions may provide learners opportunity for reflection through creating explanations and by posing alternative positions, where negotiation of meaning between

Figure 1. Situations, interactions, mechanisms and effects (Excerpted from Dillenbourg, 1999)



peers may occur. In addition, an alternative online activity such as a group-based task within an online learning environment, peers may share learning tasks for ensuring mutual engagement and cognitive load especially when students' skills within group are in advanced level In each case, however, less able peers in particular areas may develop their understandings by observing the more able ones in conducting particular learning activities. An interesting challenge is to think the types of situations that can create collaborative processes within learning communities where learners may give their own interpretations of different views. This might be encouraged by creating and engaging students in communities of practice.

Communities of Practice

The notion of community facilitated by technology have been explored by many researchers with social and situated views of learning and the idea of communities of practice in Computer Supportive Collaborative Learning (CSCL). Accounts of situated learning (e.g. Brown et al., 1989; Lave and Wenger, 1991; Wenger, 1998) have had a particular influence for e-learning. Wenger (1998) argues that issues of education should be addressed primarily in terms of identities and modes of belonging, and secondarily in terms of skills and information. This view regards pedagogy for e-learning not just in terms of procedures and techniques for supporting the construction of knowledge but in terms of their effects on the formation of identities (Mayes and Fowler, 1999). The essence of a community of practice is that, through a joint engagement in a particular activity, learners form identities and develop and share practices (Mayes and de Freitas, 2004). A community of practice has been defined by Wenger (1998) based on three aspects:

- What is about – as a joint enterprise as it is understood and continually renegotiated by its members
- How it functions – as a mutual engagement that binds members together into a social entity.
- What capability it has produced – the shared repertoire of communal resources members have developed over time, e.g. routines, sensibilities, artifacts and vocabulary.

Involvement is central here because it means making conscious commitment to a group. Shaffer and Anundsen (1993) refer to this as 'conscious community' and as described by Wenger (1998) this is a community that emphasises participants' needs for transformation and personal growth, as well as the social aspects of the community. In some instances these learning communities may be more interesting and stimulating because they involve participants with similar objectives and interests. This aspect may be a part of what differentiates community for social networking (e.g. Facebook, YouTube or My Space) and communities that nurture personal growth and development.

The attraction of applying communities of practice in higher education is whether or not students are motivated for conceptualising learning as a process of guided construction of knowledge. This means that teachers need to focus on the student's cognitive activity otherwise there will be no useful learning. For example, Rohde et al., (2007) proposed a design of practice-based courses where students created a community of practice. The online community's purpose was to facilitate the view of knowledge as a construction of students' online interactions within the community and remains within the virtual domain to be accessed, challenged and developed further by other members in the community. At the same time, Goodyear (2003) gives an account of communities of practice as knowledge-sharing by describing a cycle of learning, moving through phases of externalisation (of tacit knowledge) sharing, discussion, refinement and internalisation.

The design of online learning tasks is central here. Goodyear (2003) distinguishes between a

task (what gets set by the teacher) and an activity (what follows as the learners' response to the task specified). A number of taxonomies of task types exist, and these can be useful for teachers to decide what specific tasks to set according to the desired software tools to be used. Paulsen (1995) has reviewed a wide range of e-learning and teaching techniques and has produced a taxonomy of online learning tasks. At the same time, in face-to-face mode these learning tasks may be accomplished through the use of simulations, group activities and small-group projects and by encouraging students to pursue topics of their own interest. A sense of community in the classroom may emerge from these activities which may allow students to create physical interactions.

USING SOCIAL SOFTWARE TOOLS FROM A SOCIAL CONSTRUCTIVIST PERSPECTIVE

Successful collaborative processes and the creation of online learning communities emerge and are shaped by their own members. The teacher as a member of that community may influence the structure and the character of the community but not the creation of that community. The teacher, therefore, may set up or modify learning tasks, select and design software tools that may assist to the emergence of the learning community where each student may customise these tools to meet their own needs. The design of these tools may be modified to meet the requirements of a new learning task on which students are working. For example, the teacher has assigned an online collaborative learning task for students to share opinions and ideas. The teacher could initiate that particular task by designing supportive organisational forms and structures necessary for establishing an online social network. These supportive organisational forms may include social software tools for triggering students' action. Social software can be broadly defined as 'software that supports group interaction' (Owen et al., 2006). The most common type is likely to be discussion boards. However, applications like weblogs, and wikis are now widely used for teaching and learning. According to Owen et al., (2006) some of the key attributes of these tools, in relation to higher education, are that they:

- Deliver communication between groups
- Provide gathering and sharing resources
- Deliver collaborative collecting and indexing of information
- Enable communication between many people
- Support conversational interaction between individuals or groups ranging from real-time instant messaging to asynchronous collaborative teamwork spaces
- Support social feedback
- Deliver to many platforms as this is appropriate to the teacher, student and context

Table 1. Paulsen's taxonomy of online learning tasks

Techniques	Example methods
One-alone	Online databases; online journals; online applications wikis, blogs, social bookmarking; software libraries; online interest groups, social networking
One-to-one	Learning contracts; Apprenticeships; interviews, collaborative assignments, roleplays, wikis, blogs, social networking
One-to-many	Symposiums; lectures; role plays; interviews, wikis, blogs, social networking
Many-to-many	Discussion groups; simulations; games; debates; case studies; brainstorming; Delphi techniques; Forums; project groups, wikis, blogs, social networking

Weblogs are updatable personal websites, often used as personal journal, consisting of brief paragraphs of opinions, information and links, called posts (Anderson, 2006). Wiki software allows learners to easily upload content and easily edited by anyone who is allowed access (Owen et al., 2006; Anderson, 2006). One of the well-known examples is the online encyclopedia Wikipedia (http://www.wikipedia.org/). The principle behind the operation of Wikipedia is that a wiki may be regarded as a collaborative tool that may facilitate both the needs of a large group but also may be used as an asynchronous social tool for the particular needs of small groups (Owen et al., 2006). Flexibility, ease of use and open access are some of the many reasons why wikis and blogs are useful for group working.

This section will consider a range of social software tools such as discussion boards, blogs and wikis in relation to the two social constructivist perspectives: collaborative learning and communities of practice. The particular approaches proposed may provide, to teachers, a starting point for reflection on how collaborative learning and communities of practice may be mapped to teaching and learning using social software. However, there are a number of elements that determine the level of learning that can be achieved by using social software. These limitations may often be apparent to the design of learning activities because students may perceive their engagement, for example, into online learning communities differently often causing lack of engagement, interaction and participation. Social presence becomes a critical element in community building in a way that the instructor should empower students to participate in the community building and exploration of content (e.g. Goodyear, 2001; Ellis et al., 2007). Also, establishing guidelines as a starting point for collaborative processes in a group may serve as a means by which the group defines shared goals and purposes (e.g. Goodyear, 2007; Kanuka, 2007).

Using Social Software for Engaging in Collaborative Learning Processes

Collaborative learning may be instantiated in actual practice by using a number of different tools. For example, discussion boards and blogs may be used to create processes of collaboration and interaction by introducing online discussions through linking and posting information and resources. The interactive nature of online discussions assists in promoting discussion among learners by creating a forum for sharing opinions and ideas. By engaging students in online discussions, teaching and learning may be transformed from a one way instructional approach to a highly interactive approach to learning (Ellis et al., 2006). Additionally, reflection and reflective practice may be seen as one of the most valuable affordances that online discussions can provide. This is particularly useful when face-to-face discussions and online discussions complement each other. For example, the online discussion may be planned not just to be an 'add on' but to be an integral part of the learning environment. Therefore, by integrating blogs or discussion forums for engaging in online discussions into the teaching and learning flow of the classroom, students have the time to foster a habit of reflective practice, critical thinking and articulating online, which can subsequently further develop during in-class discussions.

Research findings show, that online discussions often focus on similar kinds of learning tasks such as the encouragement of participants to put their thoughts into writing in a way that other peers can understand, promoting self reflective dialogue and dialogue with others. That is, effective online discussions through the use of social software tools foster effective collaborative learning (Ellis et al., 2007). However, students may only achieve this deep reflection on the online postings made by other peers, if the purpose of the learning activity is understood by them (Ellis et al., 2004).

For the purpose of developing student's understanding, teachers should view the reflective practice as a part of an active learning structure, for the use of blogs and discussion boards, which facilitate the sharing of different viewpoints and ideas. This is central here, particularly for using blogs where a permanent record of a student's thoughts is provided for later students' reflection and debate, by automatically saving the messages posted in the discussions. This may create a network of interactions, which may form a social network. For example, if blogging activity is combined into two models which can function simultaneously then the particular application can be both user and content focused or a mix of either. The user - focused model may be designed for the purpose of interaction, sharing and formulating social networks. The content –focused model may be used for assigning learning content which can be written from a personal point of view, with students expressing their own range of interests, rather than on an assigned project or a course topic. This provides to students the ability to create their own content by adopting a research-based approach. For example, Britain (2004) argues that the teacher should gradually engage students in collaborative learning by primarily focusing on making explicit students' conceptions of the phenomenon in question which, in turn, they will determine their prior knowledge of that phenomenon. The second stage is to help students to be aware the level of knowledge they already have and this could be accomplished by engaging them in online discussions for exchanging opinions that would assist on experiencing other students' views on the same issue (e.g. McLoughlin and Luca, 2001). Interaction may occur throughout the students' group instead of between students and the teacher within the group setting and therefore, the teacher is acting as a group member who is contributing to the learning process thus, encouraging students to form different communities with different knowledge-building practices. Such communities may be academic or vocational, at a first instance, and ideally students should recognise that both the creation and the application of knowledge within the community are well-understood and have value for the members (Goodyear, 2007).

Creating Communities of Practice With the Use of Social Software

Conceptualising the use of a blog from a content-focused approach, there is the possibility to build learner knowledge networks. That is, the design of a Knowledge Forum, as Scardamalia and Bereiter (2003) addresses it, aiming at supporting learners to pool ideas and reflecting to these by developing supportive arguments. In the form of content, like notes, a multimedia community knowledge space is created through students' different perceptions, models, theories, evidence and reference material in a shared space. Through this space, students may develop a collective responsibility for the solution of knowledge problems, and the teacher is assisting students to grow into that responsibility. The learning activity includes the development of ideas and explanations which then are shared with a group of peers. Then, refinement of these ideas is important as new ideas develop. In this way the use of a blog as a Knowledge Forum has the potential to include an interplay between socially defined knowledge and personal experience which is mediated by a membership of the group. This provides a learning situation that negotiates both an individual's experience, and the knowledge that the individual takes from, or brings to, the community. Consequently, the use of a blog as a Knowledge Forum supports the creation of communities from a focus of carrying tasks and activities to a focus on the continual improvement of ideas and creative problem solving (Scardmalia and Bereiter, 2003).

An important element for social software is linking as it may deepen the conversational nature and also the sense of immediacy (Anderson, 2006). From a user-focused perspective, the process of

linking to different communities may lead to 'boundary crossing'. For example, through linking, students can be members of online learning communities that include other cultures, experiences and ages. By this way, students have the opportunity to move beyond their particular social community and enter other communities where new skills are developed with the assistance of more experienced members of the community. In particular, White (2006) argues that teachers may start thinking about strategic approaches to using blogs as a medium for community development. That is, in terms of (1) technology and design: the impact of blogging tools on the community and (2) the social architecture: locus of control, power, identity, interaction processes and the role of subject matter. White (2006) distinguishes blog based communities in three main patterns: The blog centric community, the central connecting topic community and the boundaried community.

The main difference between these kinds of blog based communities is based on locus of control power and identity. In blog centric communities the power is firmly held by the blog owners as they can set the rules and norms of engagement. The topic centric blog community's power and identity is distributed across the community because there is no technological platform and bloggers may select their own tool. In boundaried communities, blogs and blog readers are hosted on a single site or platform. Learners may become members of the community where are offered the opportunity to create a blog. Often boundaried communities have other social software tools such as discussion boards, instant messaging and wikis. Power in boundaried communities is held partly by the owner of the platform, who may impose rules but also is exercised by bloggers in terms of the frequency of posting and interest as measured by how many comments a blogger gets. An example of adopting a boundaried community for teaching and learning would be to design a learning activity where each student would have the chance to log in a Virtual Learning Environment (VLE) where there would be collections of other students' blogs for the students to post their opinions and ideas for the issues discussed. This may lead to faster social connections and community building. However, these blogs are not replacing the forum instead they offer a new community activity because bloggers have more control of the message than in a forum in terms of controlling the pace of the postings and determining their relevance according to their own learning experiences. Therefore, blogs can be regarded as a more personal part of the VLE where the students reflect, criticise and control different posts based on their personal interests.

An interesting point made by White (2006) is that blog communities may take the form of a network since they are not bounded by the technology and may grow beyond the ability of an individual to keep track of the network. With the perspective of social architecture including the roles and forms of interaction within each type of blog communities, teachers may be able to design their blog community while taking into consideration the role of content or subject matter, their role as facilitators and the role of the technology. In essence, the view of online communities provided by White (2006) may form pedagogical approaches for designing and nurturing blog communities by distributing control, power and identity.

A strong element of this socio-cultural view of using blogs and other social software tools is online identity or social presence – what persons become when they are online and how they express that person in virtual space (Palloff and Pratt, 2007). For example, an introverted student, who tends to have more difficulty establishing presence in face-to-face teaching, may become more extroverted by establishing presence and interaction with other peers online. This notion of changing identity when interacting with technology may be caused by the fact that introverted students process information internally and are more

comfortable spending time thinking about information before responding to it (Palloff and Pratt, 2007). Consequently, introverted students may have less difficulty creating a blog for exchanging opinions within a boundaried community where the establishment of a social presence may be easier than in-class. It can be argued, therefore, that the degree of social presence that may be developed within a boundaried community may be attributable to the particular technological tool in use. For example, introverted students may still be introvert when using a synchronous chat because it may be perceived as a "noisier" space where they have to post instantly their thought without having available time for reflection, but when they use a blog they may become more extrovert as they have a sense of control and time to reflect their arguments before posting. However, recent studies that investigated social presence have suggested that the medium does not affect the development of online presence. Instead of the particular tool, the way that the student interacts and behaves with other peers impacts on the development of online presence (Wenger, 1998; Polhemus, Shih, and Swan, 2000; Stein and Wanstreet, 2003).

Learning through an online community may not be accomplished only by designing online learning activities that promote interactions between a learner or learners and an environment that is carried out in response to a task with an intended learning outcome (Beetham, 2004) but by focusing also on the process of learning and on the learning activities that students carry out to develop understanding. Although the teacher is responsible for designing appropriate learning activities that facilitate the process of participation, interaction and expression of different opinions and ideas, students also have to contribute for achieving successful online learning activities. Therefore, in order for the students to be considered 'active' in an online community, they must not only access the online learning environment but they must post a comment of some sort. By posting comments students are considered as active participants and as a result ideas can be collaboratively developed and socially negotiated.

This ability to collaborate and create meaning communally is a clear indicator that students are actively participating in the learning process. For example, an active student who participates and generates knowledge may be the one who gives substantive feedback for other students' ideas but also provides additional resources that other peers may want to review. This development may be considered as a successful learning outcome because the student is able to critically evaluate other students' comments and at the same time being able to gather additional learning resources that go beyond the material assigned, thus developing their skills and their confidence as researchers. At the same time, teachers may offer some guidelines for achieving minimal participation, making it more likely that the students will participate in the learning process. Palloff and Pratt (2007) note that this expectation of participation differs from face-to-face teaching and learning because the discussion can be dominated by more extroverted students giving the impression that the class is engaged.

The opportunity for reflection and the ability to think before responding to a post may help to create a level of participation and engagement that may be greater than a face-to-face discussion. For this reason, the instructor needs to be actively engaged in the process and motivating students to participate by posting interesting topics for accomplishing the desired learning outcome. This may encompass the development of a learning community and not just a social community where knowledge about the learning content can be understood and the ability for collaborative knowledge building can be achieved.

However, research studies reported that students may be uncomfortable to engage in online environments for openly criticizing each others work (MacDonald, 2003), engaging them in peer feedback (Ramsey, 2003) or shifting the power

from the tutor to them (Crook, 2002). Sweeney et al., (2004) conducted open-structured interviews with 12 students in a blended course where some sessions were conducted face-to-face and some on discussion boards. Sweeney et al., (2004) concluded that there were students who perceived discussion boards as requiring reflection and hard work whereas others perceived them as offering freedom of speech and deep learning. These variations in students' perceptions may be related to students' understanding of their learning, the role of the learning environment and the activities that are engaged within that. Ellis and Calvo (2006) attempted to investigate these relations by exploring the student experience of learning through discussions in an undergraduate engineering subject. A quantitative approach was used by giving three questionnaires for providing a comprehensive investigation of the qualitative variation in students' experience. They suggested that if students do not understand how discussions could help them reflect on and revise their ideas, they tended not to approach face-to-face or online discussions in ways likely to improve their understanding. They conclude:

"It would also seem necessary to strengthen the relationship between the purpose of the discussions, whether online or face-to-face, in relation to the learning outcomes of the students… Without such strategies, poor approaches to discussions, negative perceptions of workload and a general lack of awareness of the value of discussions for learning will hamper the quality of learning experienced in discursive learning contexts." (p. 67-68)

IMPLICATIONS FOR USING SOCIAL SOFTWARE FOR TEACHING IN HIGHER EDUCATION

Since the use of social software promotes communication, interaction, sharing of resources and social feedback, it is difficult to talk about pedagogically driven practice in terms of using social software without investigating teachers' conceptions, beliefs and intentions of teaching, in order to sketch their main approaches to using social software. However, uptake and implementation does only depend on teachers' beliefs and intentions to using social software but also on students' conceptions of teaching and learning, their conceptions about the learning environment and their conceptions about the subject matter. Part of this section focuses on teachers' conceptions in terms of distilling the main outcomes they imply.

Kember (1997) identified five conceptions of teaching which could be located from a continuum, from a teacher-centered, content oriented conception of teaching to a student-centered and learning conception of teaching as follows:

- Teaching as imparting information
- Teaching as transmitting structured knowledge
- Teaching as an interaction between the teacher and the student
- Teaching as facilitating understanding on the part of the student
- Teaching as bringing conceptual change and intellectual development in the student.

It is apparent that the first two categories have practical implications for using social software. At a first instance these conceptions heavily rely on declarative conceptual knowledge, contemplative forms of analysis and use of textual representations (Barnett, 1997). Therefore, the aim is for the students to absorb predefined knowledge relevant to the discipline's objectives. The main kind of learning outcome associated with these conceptions is the ability to recall prior knowledge and use it for the construction of arguments or for problem solution more generally (Goodyear, 2003). On the contrary, the following three conceptions converge more with the pedagogical assumptions for using

social software because the student is supported to handle with confidence concepts, theories and ideas and communicating them with peers and teachers. Also these conceptions encourage informed but critical action by understanding the power and limitations of the field as a resource for action (Barnett, 1997).

These conceptions of teaching may imply that the way social software tools are used depends on the educational beliefs and presumptions of teachers. This also implies that the use of social software is likely to have varied uptake and implementation because of differences in conceiving how these tools may be used between teachers and also between the educational presumptions inherent in these tools. Connected to this observation, teachers may rethink their conceptions, towards a more social constructivist approach for using social software. Teachers that wish to support the use of these tools may plan curriculum design as a social process by:

- Allowing learners to personalise their learning but in a framework that monitors their progress
- Collaborating with experts in a particular domain so students can participate in discussions and become knowledge creators
- Developing learning tasks that encourage collaboration and sharing of ideas
- Supporting the learning experience in terms of designing different learning tasks outside class environment
- Creating organisational structures and deploying appropriate tools for online learning communities to emerge.

These suggestions involve a detailed consideration of the nature of using social software, which may also influence teachers' conceptions of teaching in general. Therefore, for using social software teachers may need to decide what concepts, tasks and methods to introduce based on their conceptions of teaching and the demands of the curriculum. This suggests that particular beliefs and intentions for teaching may bring certain affordances and constrains to the use of social software. This indicates that there is a need for sustained and influential research to understand teachers' conceptions of using social software for teaching and learning.

Another important implication is the integration of social software tools into institutional Virtual Learning Environments (VLEs). Institutions support that these environments reflect the organisational reality. This means that a VLE provides the student with tools such as discussion boards, email, noticeboards, whiteboards, etc and connects the user to university libraries, resources, regulations and specific content such as assessment and modules. The argument is that since VLEs contain all this data, there is the potential to change the particular learning environment (such as the type of learning tasks, learning resources, type of tools, complexity of material, etc) to the student's preferences. However, practitioners now question whether the idea of a VLE can support the integration of social software tools (Anderson, 2006). In response to these concerns, Johnson et al., (2006) investigated the development of a Personalised Learning Environment (PLE) as having a significant effect in managing personal goals in the context of personal development planning and for introducing the integration of social software and e-portfolios.

CONCLUSION

This chapter explained how the social constructivist perspective can inform the use of social software. Certain pedagogies from a social constructivist approach were discussed including collaborative learning and communities of practice. Then, this chapter discussed how these pedagogies may be used for social software. This is particularly useful for mapping the social constructivist approach against specific character-

istics of learning, which may enable teachers to design specific learning tasks for social software tools. This also may allow teachers to make the link between pedagogy and theory more explicit. It is perceived that using social software tools for helping students to engage in online discussions will promote collaborative learning and interactions amongst learners as well as reflective practice. Furthermore, providing the appropriate organisational structures and technological tools enable learners to develop online learning communities where the sharing of learning material and the construction of new ideas, with the help of more experienced peers, may lead to user-generated content. From a user-focused perspective, an important element of social software is linking which gives the opportunity to students to enter other communities, with different cultures and experiences to create new knowledge and skills. This may generate a network of interactions, which can result in the formation of a social network community. Personal identity and social presence are important for establishing internal dialogue for formulating responses which can be potentially different from how students may respond to face-to-face teaching and learning. The discussion and acknowledgement of these issues support the development of control, power and identity in the online community by designing pedagogically informed learning activities. However, we must acknowledge that designing such learning activities may not lead to intended learning outcomes because students' conceptions of teaching and learning and how they intend to engage in the online learning environment may vary.

Teachers' conceptions of teaching seem to be an important consideration for using social software from a social constructivist approach. Teachers may need to decide their teaching strategies (nature of learning tasks, curriculum design, teaching approaches etc), in terms of using social software, based on their particular understandings of the teaching process. This is particularly useful in the context of e-learning, because through teachers' conceptions of teaching, researchers could investigate the impact of factors such as individual perspectives, cultural and discipline differences in terms of using social software.

Further empirical research is needed to understand the role of social software from a pedagogical perspective by investigating how the use of these tools can support students' learning experiences. Social software tools are currently perceived as technologies that imply a different relationship between institutional boundaries and social forms (Jones, 2008) so further investigation is needed to see how current institutional VLEs can afford the opportunity of greater peer-based pedagogy to allowing more radical or diverse learning activities by integrating social software or whether it is preferable to rely on publicly available social software resources which can be used for teaching and learning.

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