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Article

Learning in Social Networks: Rationale and Ideas for Its Implementation in Higher Education

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Abstract: The internet has fast become a prevalent medium for collaboration between people and social networks, in particular, have gained vast popularity and relevance over the past few years. Within this framework, our paper will analyse the role played by social networks in current teaching practices. Specifically, we focus on the principles guiding the design of study activities which use social networks and we relate concrete experiences that show how they contribute to improving teaching and learning within a university environment.

Keywords: social networks; teaching; learning; higher education

1. Introduction

Information and Communication Technologies (ICTs) are increasingly prevalent in our society, and consequently, they entail new conditions and opportunities for teaching and learning processes. On the one hand, the new generation of students enter university with a strong command of competencies to communicate via ICT, a situation which obviously facilitates the introduction of such resources as learning supports [1]. On the other hand, there is apparently widespread participation in different social networks and increasing evidence of their use as support for study activities.

Facebook and other social networking sites (SNSs) are ubiquitous in everyday life, seeping into educational environments and leaving educators little choice but to explore how best to incorporate such tools into teaching and learning [2].

However, we still know very little about how this state of affairs affects student experience and, in particular, how it impacts on their learning. SNSs seem to be used rather informally, more as a means of socializing and talking to friends about work than for actually doing work [3]. Given the keen interest in the topic, especially in university environments, this article will first present a basic review of the literature on the principles guiding the design of study activities using SNSs. Based on this preliminary overview, we will then discuss some practical ideas on how to use SNSs to promote student learning. In summary, our aim is to present an overview of current research on the matter and put forward some practical ideas to stimulate the debate and encourage further research.

2. Social Networks as Spaces for Learning

Social networking sites (SNSs) can be defined as those sites sharing a variety of technical features that allow individuals to form associations, linked by heterogeneous motives, and constitute a social structure (“social network”) made up of nodes interlinked by more than one type of relationship [4]. SNSs typically combine individual profile pages with various interaction tools, such as chat, blogs, forums, *etc.* This reinforces a sense of community and collaboration, which makes SNSs a viable alternative to proprietary course management systems such as Blackboard [5].

The learning process that takes place in a social network is the result of various transactions, of multiple exchanges between participants, who switch between teacher and learner roles. In our opinion, this characteristic is what distinguishes a teaching-learning situation that may occasionally emerge in the SNSs from those being promoted in a Learning Management System (LMS). The most substantial difference is that an LMS is an application that allows instructors, coordinator trainers and managers to monitor student participation in web-based and classroom training.

Both applications may be combined so that SNSs (an informal learning environment) may be used to support the development of a learning task that has been set and will be carried out essentially in an LMS (formal learning environment).

Thus understood, the learning results in a SNS closely match those from a collaboration experience between “colleagues”, who share and explore an area of knowledge. This idea acknowledges that the participants in a network have common learning objectives; they strive to create a common ground to share their experiences in class. These could be, for example, learning about how to carry out a certain procedure or how to use a new tool, discussing the expectations for an exam, their satisfaction/dissatisfaction with the results, or with the grades, or with the teachers’ teaching methods, among many others. As a result of these exchanges, interpersonal links and common knowledge are created; that is to say, a community is formed [6]. Nevertheless, sometimes a sense of community needs to exist before such interactions can occur.

For example, Lockyer & Patterson [7] relate a case study to examine the nature of interactions among students using social networking technologies in a formal learning context. In this case, the learning activity involved the use of Flickr, a popular photo-sharing website. To analyse the collaboration process, postings on the discussion forum were studied. For this analysis, Gunawardena,

Lowe, and Anderson's model was applied [8], resulting in evidence of sharing/comparing, dissonance, negotiation/co-construction, testing tentative constructions, statement/application of newly constructed knowledge in relation to understanding the functionality of flickr implemented as a social networking site linked to a collaborative learning task. Given the focus of the subject—that is, Network-based Learning—this was an important learning opportunity. Pedagogically, the potential for deeper engagement in the topic may be realized by more closely linking the research-based reading component to the social networking component in different learning activities.

Over the past few years, programmes allowing interaction via virtual social networks, better known as SNSs, have brought about an authentic revolution, both in terms of their rapid assimilation but also in terms of their extension into further applications. It is a revolution perhaps only comparable to the emergence and popularisation of email, due to its power to modify human relations via the web. Thus, social networks have fast become powerful interaction spaces between diverse social groups, some of them highly specialised, and where it is possible to meet people who share the same interests or reacquaint themselves with others, as is the case with LinkedIn, Twitter and Facebook.

A Massive Open Online Course (MOOC) also works on the notion of bespoke learning (that is, learning tailored to participants' needs, preferences, previous experience, *etc.*), which is a feature of learning via SNSs, too. In fact, a MOOC will be offered and typically spread through an online social network. However, like LMSs, these environments are not student-initiated in practice. A MOOC integrates the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a collection of freely accessible online resources. Thus, the emergence of MOOCs in a continuum from open educational resources to open access to the results of scientific production provides anyone, anywhere in the world with the same content available at the most prestigious universities and by the most renowned specialists, for a more structured education and the award of degrees (7). Probably the greatest point of similarity between MOOCs and SNSs is when a MOOC builds on the active engagement of several thousand "students" who self-organise their participation according to learning goals, prior knowledge and skills, and common interests. Therefore, SNSs are capable of boosting the opportunities for joint learning offered by MOOCs.

However, despite the huge potential afforded by these communication resources among young people, their use as a learning support remains deficient. We seem to know rather little about how to introduce them to learning in a way that truly acknowledges their peculiarities as a support to communication [9]. Yet, on their own initiative, students are increasingly using social networks with educational objectives [10]. Moreover, informal learning in social networks has great potential to bridge the gap between the so-called "digital natives" (the students) and the "digital immigrants" (the teachers) [11].

Interestingly, many Learning Management Systems (LMS) seem to replicate the status quo at real university campuses, by making a distinction between social spaces and formal learning situations, by designating class areas and chat areas within the LMS forums, in the same way that you would find student bars and classrooms in a campus. In contrast, SNSs appear to erase this distinction and seem to suggest that mixing all types of activity is something useful.

It would appear that the problems and tensions faced when trying to link SNSs to formal learning arise when the network structure comes into conflict with the hierarchic structure of traditional learning. The problem lies in that the traditional learning structure is teacher-centred and the flow of

content is generally one-directional, usually conducted (controlled) by the teacher. When teachers start designing online activities, more often than not their traditional roles are transferred online, onto a medium that until then was characterised by its lack of authority.

Undoubtedly, it is crucial to further examine how SNSs best fit into university learning or alternatively, what modifications are needed in current teaching methodologies so as to introduce SNSs as learning catalysts. In particular, we must heed growing tensions, such as those between formal and informal learning, structured and non-structured learning spaces, students' and teachers' control, open and closed content within social networks and privacy and security issues in the SNSs [12].

There is currently an interesting and rigorous debate on the role that SNSs play in learning [13]. From an educational point of view, there have been many attempts by teachers and students themselves to introduce learning activities into social networks, for example, with the idea of creating communities of practice [14]. However, although research keeps advancing, university leaders are still questioning what teachers can do to start changing their educational practices to take advantage of the new opportunities generated by social networks [13].

Conversely, we must also take into account that SNSs are not explicit learning environments. And although they could potentially become an important learning support, they are still far from being it, at least formally. Among other reasons for this, students still consider it an invasion on their social space [3]. Consequently, the presence of teachers in SNSs may generate a conflict of roles due to the academic authority generally attributed to teachers, a circumstance which may appear to condition communication; for example, it may generate confusion on what language register to use or what image to present [15]. One of the most delicate issues about the use of SNS in higher education is that they attract students precisely because they are not controlled institutionally like LMSs, which most universities implement with a sole objective (namely, learning).

Without ignoring current limitations and possible risks, we believe that all of us, university teachers, must remain optimistic and advocate for teaching innovations, in favour of promoting SNSs or recognising them as an additional support to the learning generated in the classrooms. Firstly, we must legitimise the social interactions and exchanges taking place in these social spaces, which attract participants mainly because of their shared interests. This is not simply a matter of sharing knowledge but also of implementing collaboration during problem-solving and even developing innovative thinking. On the other hand, whilst it is true that social networks are established via social software services such as Blog, Wiki, Facebook, Del.icio.us, Flickr, *etc.*, we must recognise that the most important thing is not the software itself (of which there is in fact quite a diverse range out there), but the possibility that social network offers users (in our case, university students) a way of locating others with similar interests. In turn, this dynamics becomes a modern alternative to traditional learning (centred on the individual) as it calls for the creation of learning communities which are in themselves exclusive opportunities for social creativity, as required by the contemporary professional world. Undoubtedly, this is an issue that cannot be left unresolved; idling hoping that the answer will find us with the passing of time. We must look deeper into the opportunities afforded by SNSs and also into the factors which are currently limiting their use.

3. Possible Educational Applications

Based on the literature review performed for this article, we will now discuss some ideas and suggestions on how to introduce SNSs as learning support in university environments. Integrating SNSs into formal learning can be achieved in a number of ways (for example, creating a dedicated Facebook Page, create a debate on a topic via Twitter, encourage students to keep blogs on a specific topic on Blogger, *etc.*). However, the actual decision of what to do and how to do it must ultimately come from the teachers themselves after carefully considering the student's needs, the nature of the topic they want to impart and the specific learning activity they want to develop, among other issues. Also, given the incipient development of research into the educational use of SNSs, undoubtedly the teachers' decision will also be influenced by their own personal experience and preferences, and of course, by the students' experiences and preferences. In this regard, it would be worthwhile to gather teachers' views on their experiences in order to identify necessary adjustments for the best use of this technological tool as a learning support.

Therefore, to advance the discussion, we consider that, firstly we must pay attention to the role generally attributed to the teacher in these environments. Secondly, we must look into the opportunities afforded by these resources for improving teaching practices, that is to say, for promoting significant and profound learning, and fostering collaboration and the development of basic competencies for future professionals.

3.1. The Teacher's Role within the SNSs

To discuss the teacher's function within the SNSs, we must refer to the notion of learning in communities [16]. In these environments, learners actively take responsibility for and regulate their own (collaborative) learning, meaning that the teacher is no longer in full control. The teacher acts as a secondary "guide" and students are encouraged to take active control. This allows them to achieve their learning goals and coordinate the process by agreeing on rules and deadlines [17]. This apparent switch of roles stresses the need to devise new pedagogies enabling teachers to design and promote a more student-oriented learning environment. Students actively plan their activities and assume different roles within a group, instead of simply concentrating on the learning content. As such, every member of the community may be seen as both a learner and a tutor.

Of course, teachers continue being responsible for the overall coordination of the workshop and its educational goals. Research shows that students still highly value teacher involvement and active participation. The students find communication with the teacher constructive and encouraging, and the teacher can support the students by setting the right tone for the discussion and contributing to developing a sense of community [18].

In summary, the teacher's role in the SNSs is defined as "rich and delicate". In practice, this presupposes a balanced performance, creating a climate of openness and using pedagogical experience to create supportive structures for learning. It requires a lot of trust and sensitivity on the part of the teacher not to interfere with the activities of the learner immediately; it seems to help to build in (throughout the work) a kind of subtle support framework for the group ([19], p. 280). Based on this premise, any successful intervention of the teacher in the SNSs has:

- To allow the group to be emergent in their learning.

- To allow the participants to seek their own rhythms and ways of working together.
- To keep a close watch on the group without interfering, but being ready to assist.
- To use advanced organisers to build a pedagogical framework for participants to use when they are ready.
- To create specific scaffolding in particular contexts.

Furthermore, the teachers' performance in an SNS must also include supporting dialogue between the group, as well as providing feedback on task performance, and helping to develop personal identity in a community of learners. All of this will enable university students to gain confidence and autonomy in managing their learning, which is an essential requirement for their development as future professionals.

3.2. *Promoting Collaborative Work vs. Transmitting Information*

Collaborative work increases motivation; it generates higher levels of academic performance, as individual and group learning processes feed-back into each other; it improves retention of the content learned; it fosters critical thinking; and it greatly increases the diversity of the knowledge and experiences being acquired [e.g., 19-21].

Therefore, the first practical recommendation is never to use SNSs to transmit information or supervise learning, but to use them rather to facilitate interaction with the students and to promote formative dialogue, especially with collaborative work, which is understood as the exchange and development of knowledge by small groups of peers, oriented towards achieving identical academic goals [22].

SNSs can become an incredible tool in collaborative work; the didactic possibilities afforded by these tools are almost endless when they are intended to promote interaction between the group, between the group and the teacher, and among teachers, all of which takes place outside the time and spatial constraints of a school environment. Virtuality allows for breaking these coordinates and facilitating interaction, sharing limitless files, of an also varied nature, and communicating in a way most similar to the way young people often do, combining audio, video and texts. In this regard, they function as independent systems, which are both personalised and diversified, and which undoubtedly multiply their educational potentials towards continuous learning, a result of exchange and collaboration.

Online academic communities emphasize the social aspects of learning, but they also essentially stress the notion of learning through enquiry [23]. In this regard, SNSs can act as a platform which brings together certain learning communities, in which the participants perform various actions in order to attain a common goal. In essence, these communities are formed with the objective of exchanging information and creating knowledge in a collaborative fashion. Participants support and/or challenge one another intellectually. They also bring about the benefits associated with collaborative learning, as long as the participants attempt to develop and maintain a shared notion of a problem, with the ultimate goal of working jointly to solve it or to perform a given task [24].

Ultimately, if teachers want to take part in this learning community, which in principle has been designed by the students themselves (*i.e.*, Facebook, Twitter, *etc.*), it would be advisable for them to intervene mainly to provide information (the academic content) that will promote or re-direct the analysis by means of a student discussion. This would be an effective way to contribute to the construction of knowledge. If this goal is achieved, then SNSs can act as an informal learning platform, complementing the LMSs in use by universities. Besides grabbing students' attention and

increasing their motivation, this option becomes a bridge towards fruitful communication between the academic community and the wider population in general [5,25].

3.3. Inducing Self-Regulation of Learning vs. Teacher-Led Work

An obvious feature of online learning is the possibility afforded to students of choosing freely what they want to learn. By networked learning (NL) we mean the use of internet-based information and communication technologies to promote collaborative and co-operative connections: between one learner and other learners; between learners and teachers; between a learning community and its learning resources, so that participants can extend and develop their understanding and capabilities in ways that are important to them, and over which they have significant control [26]. In this sense, SNSs increase the opportunities for self-regulation of learning, as they not only facilitate localisation of and access to a wealth of information from anywhere in the world, but they also enable participants to take part actively in the interactions prompted by these materials and their setting. These added benefits contribute to and enhance social learning, which is a way of learning based on the premise that our grasp of new content is socially constructed via informed conversations and interactions with others about certain problems and actions [8,27].

In actual fact, it is not easy to instil a self-regulatory learning attitude in students, and thus plenty of support and advice is essential [28]. Therefore, designers of social learning web sites face a twofold challenge: being able to offer various ways to tackle the problems currently limiting self-regulation and also enabling the students to have significant interactions with the other members of the platform in order to enhance their knowledge and better assimilate the learning content.

On the other hand, usually in such educational circumstances students have limited or non-existent access to the teacher or tutor, given that online collaborative learning environments are typically organised under the assumption that students will take responsibility for their own learning. At the same time, there is also a danger that, due to the vastness of resources available in the web, students may find themselves drifting in an “information ocean” [29], straining to solve ill-structured problems with little idea of what concepts, rules and principles are required for the solution or of how to organise themselves and what is the best solution [29]. A clue to alert us to the existence of such difficulties within an SNS learning context can be found in the questions usually asked by the users, in this case the students using the SNS. Asking questions enable the members of a learning community to seek help to understand and complete the work they are required to do. This is an opportunity to reinforce and support interaction among peers in this social process of learning.

In this regard, it is worth noting that searching for information and asking for help are two essential components of learning, which is sufficient reason to plan ahead when introducing SNSs as a learning support, and ensure that students will have the possibility of requesting help to find other resources or to ask somebody else to help them carry out a given task [30].

In any case, teachers may intervene (and even participate) in SNSs in order to strengthen their relationship with the students. Research along these lines shows that university students emphasize possible negative associations between teacher use of Facebook and teacher credibility [31]. However, caution is advisable. Teachers must strike a balance between promoting communication in online environments, whilst at the same time demonstrating they are competent and trustworthy.

3.4. Contributing to the Development of a Sense of Community

Sense of community is defined as “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together” [32].

In an online learning environment, a learning community is defined as a social community of learners who share knowledge, values, and goals. A sense of community in online learning is comprised of two components: 1) connectedness, which refers to students’ feelings of cohesion, spirit, trust, and interdependence, and 2) learning, which refers to the students’ feelings of the extent to which their learning goals and expectations are satisfied [33].

Some researchers have shown that a sense of community in online learning environments contributes to student motivation and increased learning [34,35]. Also, a sense of community is closely associated with interaction. Researchers have also shown that a sense of community helps reduce feelings of isolation and facilitates learning by making more resources available in the form of other learners from whom learners can seek help [36].

3.5. Accommodating Individual Differences

SNSs cater for individual differences to a great extent. It can easily be observed that in the SNSs, various subgroups are formed depending on the students’ preferred cognitive styles (characteristic ways of taking in and processing information), their approaches to learning (surface, deep, and strategic), and their intellectual development levels (attitudes about the nature of knowledge and how it should be acquired and evaluated). This structure boosts student commitment, facilitates adjustment to communication patterns and fosters leadership opportunities, thus simulating the behaviour in corporate societies, typical, for example, of engineering environments [37].

Diversity among university students is a fact. Student communication within a particular network is undeniably influenced by differences in ethnicity, class, language, gender, nationality, disability, capability and religion amongst themselves. This diversity can either enhance or inhibit the student learning, but one clear advantage of this type of environment, from a student’s perspective, is the free access to a wide range of students in other year groups and other courses, which can broaden their network to receive support and/or gain knowledge. An online social network has the potential to reduce social exclusion, thus increasing a student’s self-efficacy.

In distance learning and virtual universities, the recommendation is that tagging and sharing of resources and ideas can be highly beneficial given that students do not meet physically. The social value of face-to-face discussion can be partially replaced through the use of social software. Furthermore, if distance learners tend to be in the same network (university social network) and using social software for entertainment, this may result in their becoming more socially connected, thereby enhancing their social learning environment and student experience [38].

3.6. Innovation in the Assessment of Learning Linked to Tasks in SNSs

Recent studies have looked into the possibility of linking learning assessment tasks to activities in SNSs. For example, a research carried out at the University of Melbourne, in Australia [39], identified

“good assessment practices” reported by the teachers as authentic examples of innovative assessment supported by social web technologies (also known as Web 2.0).

Assessment activities which use social web technologies generally tend to differ substantially from the usual “traditional” assessment tasks. For example, students may be asked to keep a public blog throughout the course, or to create or critique video clips published on YouTube, or to use a wiki to produce a new text book or a magazine in collaboration with the rest of the class. Social web technologies, such as SNSs, would enable multiple authorships of texts and would facilitate the creation of texts spanning different styles, even informal ones, using different means of communication and expression.

However, if a decision is made to make these practices part of the formal assessment, it is important not to lose track of the required coherence, observing the socio-constructivist approach to learning, in which assessment forms part of learning and demands the completion of authentic tasks. This also requires careful design and implementation of the assessment, especially by means of an effective feedback [40,41].

4. Final Comments

The ideas extracted from the literature review carried out for this article seem to support two main notions.

Firstly, SNSs on their own are not learning environments *per se*, but they afford ample and potentially effective opportunities to improve student learning in a university environment. This notion is supported by the fact that the proper functioning of a learning group in a social network arises from multiple transactions of exchange of knowledge and ideas among the participants, who switch roles from teachers to learners and vice versa. That is, in principle they share common learning goals and strive to create a common ground in which to share their experiences.

Secondly, despite the ongoing debate and questioning about the role of SNSs in learning, the scientific literature on the matter offers plenty of evidence of the effective use of online social networks to foster student learning. In this regard, key emergent questions will include: reviewing the teacher’s role in these environments, looking for methodological alternatives to foster collaboration amongst students, to contribute to self-regulation of learning, and even to innovation in assessment. In addition, plenty of areas remain to be explored, such as the value of SNSs in developing a sense of community, as well as in accommodating individual differences and the diversity of cognitive styles and socio-demographic variables, ever so present in any class in current times.

However, this conclusion should be considered with the appropriate caution, recognising the limitations and the need to continue to investigate the issue.

Lastly, we must not ignore the fact that promoting the use of SNSs present universities with a series of ethical and political issues. For example, it is worth questioning if promoting the use of a given SNS implies approval of the same and if certain criteria need to be established to justify the selection of one over another. There are also pressing privacy policy issues, which will need to be explored and clarified. Furthermore, using these resources in an orderly and systematic fashion necessarily entail the need to train and offer technical support to teachers and students alike.

Ultimately, it seems worth encouraging the use of SNSs as a further resource to improve student learning, especially given their potential to boost active and committed participation in the construction of knowledge in a social community, which is ever more open and international.

Conflicts of Interest

The authors declare no conflict of interest.

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