Learning with Social Media: An Information Literacy Driven and Technologically Mediated Experience

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Abstract

This paper summarizes the theories, methods, and results of a doctoral research that integrated social media (SM) in a learning experience for students and explored the roles that information literacy, digital literacy, and new literacies played in such a learning experience. Participatory action research was the methodological approach used for two rounds of data collection, resulting in the development of the research framework 'Doing Online Relearning through Information Skills' (DORIS). The data collection methods used included students' reports, diagnostic, and final questionnaires; and semi-structured interviews. Data analysis relied on content analysis, open coding, and constant comparative analysis. This paper provides a summary of the discussion leading to the answers to the research questions, including topics such as issues and challenges of using SM for learning; participants learning experiences in such a technologically mediated environment, their engagement and the mutual shaping of SM, learning experiences, and literacies.

Keywords: Social media, higher education, teaching, learning, participatory action research, information literacy

1   Introduction

This paper is framed within a doctoral research that integrated social media (SM) in a learning experience for students and explored the roles that information literacy (IL), digital literacy (DL), and new literacies (NL) play in such a learning experience. This research assumed a mutual shaping perspective regarding its three main elements (learning, literacies and SM), thus opposing the perspective of technological determinism [1-2]. This stance allows gaining a better understanding about the role of technology in students' learning experiences and also for exploring how these experiences may affect the way technology is implemented into learning contexts. The main learning theories supporting this research are: constructivist [3] and problem based learning [4]; the three dimensions of learning (cognitive, social, and emotional) [5]; and the theory of affinity spaces [6]. The methodological approach used was participatory action research (PAR) [7-9], which is cyclical in nature [9]. Thus, two rounds of data collection were completed for this study, a first empirical study was conducted and as the methodology was revised, improved and enhanced, it resulted in the development of the research and methodological framework, 'Doing Online Relearning through Information Skills' (DORIS).

This paper is structured in four main sections; section 2 summarizes the main concepts and theories of this research. Section 3 details the methodology used for both rounds of data collection, as well as the methods for the analysis of the data collected. Section 4 provides a summary of the answers to the research questions and discusses the contributions of this research.

2   Main Concepts and Theories

The central concepts used in this study were IL [10-11], DL [12-13], and NL [14-15]. These concepts were used to make a distinction of different skills involved in this research and were also grouped under the umbrella term literacies, which is highlights the presence of the three concepts at the same time and in different circumstances where it is applicable. The need to state such a distinction rather than adopting a multiliteracies (or similarly integrative) approach is due to the fact that in such an exploratory study, the data needed to be gathered on how the participants were challenged by different kinds of issues and which skills they had to use in order to overcome such challenges. For example, some participants could be proficient in IL but challenged by technology. In this case there is bound to be a difference in their level of engagement and success in participating in the study. Conversely, some participants could be the so-called 'digital natives' and they can be challenged by typical IL issues such as seeking or evaluating information, as well as having issues of focus, following instructions, and being critical [16]. In consequence, these participants would have a different kind of engagement. Furthermore, both kinds of participants may be challenged by NL.

Regarding learning, two main theories have informed this research. Firstly, the three dimensions of learning [5], where learning is viewed as a three dimensional process that may occur at an individual and collective level as well as in many different environments, including affinity spaces. The dimensions considered in this perspective are: a) cognitive, which includes knowledge and skills; b) social, involving socialization, participation, communication, and co-operation; and c) the emotional dimension, which entails feelings and motivations of the learner. Although arguably simple, this perspective is useful for analyzing the learning taking place in a technologically mediated learning experience, especially with social technologies (SM). The other learning theory used was that of affinity spaces, which are "… a place or set of places where people can affiliate with others based primarily on shared activities, interests, and goals (…) have an affinity for a common interest or endeavor" [6]. This theory accounts for content, interactions, and thinking about teaching and learning mediated by technologies. The concept of affinity spaces provides a useful alternative to the theory of communities of practice in a case such as the present, where the value of membership is difficult to determine in the participant of the study. Both these theories provided useful analytical lenses for analyzing and discussing the data gathered.

Learning, literacies, and SM were conceived as elements that mutually shape one another. This corresponds to a mutual shaping perspective that is opposed to the idea of 'technological determinism' [1-2]. This particular perspective of mutual shaping arguably allows for a better understanding about the influence of technology over the practices of its users and at the same time assess how user practices can affect the ways technology is used,

developed, or implemented into learning contexts. For example, SM can drive the way a learning experience is planned and, furthermore, the characteristics of a learning experience may determine to a certain extent how the educator plans this experience or uses this particular technology. The framework issues of SM was used in order to analyze challenges and nuances in the use of SM from a Library and Information Science (LIS) perspective. This framework comes from the researcher's past investigations [17] and builds upon available literature [18]. This framework is a categorization of the issues that these technologies may bring from an information behavior perspective, which consists of the following issues: trust, decision making, users' satisfaction, information overload, quality control, permanence, repackaging, crowdsourcing, privacy, and 'the clash with the real world'.

3   Methodology

This research was qualitative and the research method used was Participatory Action Research (PAR) [7-9]. It aimed at determining significant issues, challenges, and opportunities that emerge when SM are integrated into learning environments in higher education. Considering the stated aim, the research project was guided by the main research question: What significant issues and challenges emerge when SM are integrated into learning environments in higher education? Sub-questions to this study were:

- How do students' experience learning when they are engaged in a learning activity that integrates SM?

- In what ways is students' engagement dependent upon their literacies?

- In what ways do learning, literacies and SM mutually shape each other?

3.1 Data Collection

This study used a two-stage research design; the stages are referred to as 'first round of data collection' and 'second round of data collection'. PAR was the methodological approach used in both rounds. While the first round was originally conceived as a pilot study, its results emerged into useful research and therefore it was decided to use it as part of the main study. This is also justified by the cyclical nature of PAR [9].

The first round contained the following five stages: a) Assignment, b) Lecture, c) Online discussion, d) Lecture 2, and e) Wrap up. The learning strategies that integrated the learning interventions planned and executed with the participants of this round included: two lectures, class discussions, an assignment where the students had to set up a SM site, group presentations about the assignment, and online discussions using the university Learning Management System (LMS). The participants of this round were 18 master's students from an LIS program; all of them participated from the beginning to the end of the study and formed four groups to in order work together in the assignment. Data collection methods used in this round included the students' reports that they wrote to summarize their experiences from doing the assignment, questionnaires, and semi-structured interviews with

the four group leaders. The amounts of instruments analyzed were four student reports, 18 questionnaires, and four interviews.

The second round of data collection was an expansion of the first, with more assignments and strategies that were developed and grouped under the DORIS research and methodological framework. DORIS also contained five stages but they were not named after the main activities conducted as in round one, instead, they were more clearly defined and its main stages were named after the core IL skills: access, use, and evaluation [11]. Introductory and concluding stages were added at the beginning and at the end. Hence, DORIS' five stages were: a) Introduction, b) Access, c) Use, d) Evaluation, and e) Wrap up. The learning strategies that integrated the learning interventions planned and executed with the participants of this round, included: lectures, complementary readings, a blog used as a content hub and a space for online forums and interactions among participants and the researcher, and three assignments. The three assignments included a) an individual reflection on the participants' use of SM; b) the development of a SM site; and c) the evaluation of an established SM site. Due to space limitations, a further explanation of DORIS is not provided here; however, interested readers and researchers can read find complete accounts and details of this framework in other articles [19] and in the doctoral dissertation [20]. The participants of this second round were 11 bachelor's students enrolled in different programs but who were together in an IL course where this round of data collection was inserted as an alternative module. Only five of these students participated from the beginning to the end of the study and most of them found group mates from other courses to work on the second and third assignments that had to be done in groups. The data collection methods used in this round included the students' reports that they wrote to summarize their experiences from doing the assignments; diagnostic and final questionnaires that were completed, at the beginning and end of the study; and semi-structured interviews. The amount of instruments analyzed were six students' reports from the first assignment, five students' reports from the second assignment, five students' reports from the third assignment, 11 diagnostic questionnaires, 5 final questionnaires, and four interviews.

3.2 Data Analysis

Data were analyzed by relying on the technique of content analysis in a way to explain participants' shared meanings and assumptions [21]. Furthermore, this study borrowed several values from grounded theory research. The first of these was the use of the technique of constant comparative analysis for the coding and analysis of the data, in order to compare data from both rounds in order to develop stronger conceptualizations and relations [21]. Thus, the procedure of analysis was to use open coding with the data from the first round, which allowed refining the methodology in order to adjust, plan, and conduct the second round of data collection. After the second round data was analyzed, there was a return to the data of the first round in order to better define categories, so similar data were grouped. The same was made with the second round. At such stage, constant comparative analysis was applied between the categorized data from the first and the second rounds and, in the end, the data from the second round were very useful for developing more exact categories

for the data from both studies. Ultimately, through stages of axial and selective coding, it was possible to arrive at properties, dimensions, and relationships among the categories of data analyzed. This allowed arriving at the integration of the theory resulting from this research. The other value taken from grounded theory was the concept of theoretical saturation [22]. This concept was adopted because the low number of participants, especially for the second round of data collection, was a concern. However, using and analyzing the data from both rounds of data collection allowed the achievement of a moment of theoretical saturation, meaning that after the two rounds no new knowledge emerged and, hence, it was decided not to conduct a third round.

4   Conclusion

The following section provides a summary to the conclusions to the research questions of this study regarding topics such as issues and challenges of using SM for learning; participants learning experiences in such a technologically mediated environment, their engagement and the mutual shaping of SM, learning experiences, and literacies. The final part of this conclusion advances some directions for further research and provides a brief indication of the contributions of this study to IL research, practice, and for the development of IL programs.

4.1 Conclusions to the Research Questions: A Summary

What Significant Issues and Challenges Emerge when SM are Integrated into Learning Environments in Higher Education? The framework of issues of SM [17] proved to be a most useful framework to study the use of social technologies in learning environments. Actually, it was surprising that, despite very few exceptions, such a holistic approach is not common in the literature. Instead, some studies commonly concentrate on only one issue or a few at a time, such as privacy, trust, identity, and information overload, which seem to be the most common in studies of this kind.

From the issues of the framework, the most important issues according to the participants were trust, privacy, and quality control. Students were very concerned with these aspects to the point that in both rounds of data collection they discussed amongst each other and with the researcher the privacy statement handed over to them under the light of these three elements. This was, in the end, productive in that it provided the students with an opportunity talk about those issues more in depth under the light of the study at hand.

In order to integrate SM into higher education learning environments, the teacher must ensure that all their students actually want to use social technologies as an additional affinity space for their learning experiences. As this study showed, not all students would want to do it. Furthermore, a learning environment using SM must create a climate of trust between students and teachers about what is shared, when, and for what purpose. Otherwise, the focus might be easily lost due to the distractions of these technologies. Moreover, there should be quality control standards set in place regarding the content that is consumed and produced in a SM learning experience. Then, it should be decided if public types of SM platforms are the best to use when having privacy concerns in mind or if, conversely, they should use SM that allow to keep aliases between participants. Many students would not like to have their private profile associated to their academic life.

The most challenging element surprisingly was IL and not DL nor NL. This must have been due to the fact that most students that participated in the study were young and many of them did not really dominate their IL skills, especially regarding the skill for information evaluation. Because the literature is critical in pointing out that students' perceptions of their literacy skills may differ from their actual skills, further research should be complemented with objective instruments such as SAILS or iSkills that can help determine if DL or NL were not also part of the students' challenges.

How do Students Experience Learning when They are Engaged in a Learning Activity that Integrates SM? It was interesting to see that, although some students were hesitant or even reluctant toward the use of SM for their learning, some students claimed to have very positive emotions toward what was done. This is likely because learning with technologies generally can be very ludic. Furthermore, it was surprising that, although most of the students were avid users of SM, very few of them actually created pages or groups so they could get a deeper appreciation of these tools they use so much every day.

Finally, it is fascinating to see that, despite working with these technologies, the students claimed that lectures and class discussions are still important. This result underlines their willingness to continue having physical contact in the classroom with their colleagues and lecturers. Even so, it was interesting to see that others sought different learning spaces that were not necessarily technological.

In What Ways is Students' Engagement Dependent upon Their Literacies? In learning environments, every individual might have their own idea of their goals or purposes. Individuals control their own level of participation and engagement, but engagement could be a matter of choice or personality. Because SM may provide a kind of provocation that compels engagement, they can provide attractive spaces to foster engagement in order for students to find further motivation to participate in their learning spaces and activities. In order to use SM for learning, students must have discipline and develop skills for being critical participants. This is important because limited engagement will not extend their current knowledge. Certainly, students' literacies played a role in their engagement, because IL provided them the tools to select the best information for completing the activities. While DL and NL provided the means for them to use SM at varied levels, the extent of their learning was still dependent on the development of their skills. However, students indicated that NL and DL did not pose challenges. Still, it was possible to see that this was mostly due to the fact that while some students might know how to use these types of tools for education, the did not consider their use for education, and not precisely because they do not know how to use them in general. This response is subjective since their familiarity with these technologies might be influenced by generational differences and access to technology.

In What Ways do Learning, Literacies and SM Mutually Shape Each Other? It was confirmed that these elements mutually shape one another and do not support the idea of technological determinism. The learning purpose can drive our use of SM and it may compel designers to enhance and design their features for learning. The use of SM brings many implications for learning that call for good planning behind their use. This opens many new

ways to interact and learn with technologies. These ways are associated to the development of literacies. Still, if a person does not have necessary literacy skills, they may not be successful in these new technological spaces.

4.2 Implications for Further Research and Research Contributions

The methodology proposed, especially that of the second round of data collection can be applied to a larger and more heterogeneous group of participants, in order to see how further results compare. Hence, this methodology could be established as a reference in studying the roles of literacies in a learning experience mediated by technology. Most of the issues covered in this study can surely be further studied and more educational and sound refinements can be built upon the basis of the methodology used. It would be especially interesting to find quantitative values to the issues discussed on this work and design and implement an objective instrument to evaluate IL, DL and NL skills. This further study could be used to check if actual skills developed and students' perceptions of their skills can match. There are some established commercial instruments that can be used to achieve this, such as SAILS and iSkills.

DORIS was proposed as a powerful and effective way to organize PAR based on constructivist, blended (physical and online), and problem based learning interventions through the structure of information skills. This model was grounded on research-based and inquiry learning pedagogies as well as in PAR and constructivist learning, which can be set up as a blended learning intervention. Practitioners, researchers, librarians, or educators can adapt this model to develop learning interventions for learning and researching about and with SM or other technology mediated learning environments. DORIS can be adapted for teaching IL programs or other topics, by going through the aspects of access, use and evaluation of the information, as it is available and related to such topics, and by changing the themes discussed in the different stages. This could result in a powerful framework for scaffolding learning and for teaching different topics with an information skills structure, as they are needed to research and manage the information, resources or devices relative to different disciplines.

The above ideas and this research in general may offer different contributions to IL research, practice, and for the development of IL programs. Researchers, librarians, teachers, and related professionals can use its elements to enrich their social investigations, IL programs, and their pedagogies. IL programs can benefit from the grounding of IL activities on PAR, the theories used in this study, as well as its epistemologies, the mutual shaping perspective, its methods and results. DORIS can be used to organize learning interventions with a structure driven by IL skills. As such, it can be used for teaching, learning, and researching technologically mediated learning environments. It could also be adapted for facilitating IL programs or teaching different subjects from an information skills framework. The three dimensions of learning and the concept of affinity spaces are theories that might be worth considering by practitioners, because they can be powerful analytical lenses for assessing learning and interactions in learning experiences that are technologically mediated.

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