The Mutual Shaping of Social Networks, Learning Experiences, and Literacies: The Methods Revisited

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Abstract. This paper is a follow up to the paper *Studying the Influence (or Mutual Shaping) of Social Networks in a Learning Experience: Methods for a Pilot Study*, which was presented in QQML 2011. It summarizes some of the developments that have taken place within this doctoral research after its pilot study, specifically, the methodological refinements done in order to conduct the final study. The research aims were related to determining: significant issues, challenges and opportunities emerging from the integration of social networks in a higher education learning environment; how students experience learning under such conditions; to determine if their literacies affect the way they face this type of learning experience; and how social networks and learning experiences can be mutually shape one another. The method used in this research is participatory action research. With this methodological approach, a series of learning interventions were planned. These were comprised of three physical meetings and different assignments between. The participants of this study were a complete income of an international master course, divided in four teams. All students were actively involved in all the activities and filled the survey and the questionnaires; the participants interviewed were four team leaders, chosen by their own teams. The instruments used for the collection of data were: a diagnostic survey, online and offline forums, students' reports, questionnaires and semi structured interviews. The method for analyzing data was content analysis and so a framework of categories could be created to provide an order and present the data. The last part of this paper presents a preliminary list of such categories.

Keywords: social networks, higher education, teaching, learning, participatory action research, literacies, information literacy, digital literacy, new literacies.

1. Introduction

This paper presents a follow up to the previous paper titled *Studying the Influence (or Mutual Shaping) of Social Networks in a Learning Experience: Methods for a Pilot Study*, which was presented in QQML 2011. This previous paper summarized the methods and preliminary findings from the pilot study conducted to test the methodology put into place to use of social networks (SN) for learning purposes. The present paper summarizes the methods utilized in the

final study, which as the pilot study, was conducted within a PhD dissertation in the Institute of Information Studies of Tallinn University.

The research aims of this study were to determine some of the challenges and opportunities of using SN in a learning experience; how students experience learning when using these tools; to determine if their literacies (information literacy and digital literacy) affect the way they face such a learning experience; and how SN, learning experiences and literacies can mutually shape one another.

In order to fulfill the aims and answer to the research questions of this study, the method chosen was Participatory Action Research (PAR), and so the research methodology was based on a series of learning interventions to be experienced by the participants, who are students of a Library and Information Science (LIS) master program. At the moment of writing this article, the refined methodology, which is summarized here, is finished and ready to be applied for the final study.

The learning interventions were intended at the same time to reinforce some of the courses the participants were taking and also to gather data for the present study. These learning interventions developed for this study are comprised of physical meetings and different assignments between them. The physical meetings involve participatory knowledge construction between the researcher and the participants, dealing with the subject matter of the use of SN for organizational and educational purposes. The research design was structured according to IFLA's information competencies (access, use, and evaluation of information), in order to analyze the students' learning processes and relate them to this simple but comprehensive differentiation of information competencies (or literacy). The assignments use real problems for the students to solve by accessing, using and evaluating SN for said purposes, thus providing a basis to analyze the varying degree to which the students possess information literacy (IL) and digital literacy (DL).

1.1 Brief background theories

The activities and learning interventions planned for the students follow the learning theory of constructivist learning. Some of the bases of this research follow Vygotsky's ideas of learning, as his theories stress the fundamental role of social interaction in the development of cognition (Vygotsky, 1978). Moreover, social interactions leads to learning scenarios that lead to practice, as this constructivist model "acculturates students into authentic practices through activity and social interaction in a way similar to that evident, and evidently successful, in craft apprenticeship" (Ackerman, 1996).

The social dimension of learning is important within this study. However, other dimensions were contemplated, as according to Illeris (2003), learning has three different dimensions: cognitive, emotional and social. The cognitive dimension "may be described as knowledge or skills and which builds up the understanding and the ability of the learner"; the emotional dimension, which encompasses "mental energy, feelings and motivations. Its ultimate function is to secure the mental balance of the learner and thereby it simultaneously develops a personal sensibility"; and the social dimension is the " external

interaction such as participation, communication and co-operation. It serves the personal integration in communities and society and thereby also builds up the sociality of the learner. " (p. 399). Probably this is a very simple but comprehensive approach to take into account. Using social networking tools and having the students build something with them and using them to discuss is likely to fulfill their social dimension of learning, as they are interacting with them and myself in the study, both in class and online. Also, they should apprehend some of the content of the lectures in order to reason in front of practical issues. This should be related to the cognitive dimension. The pilot study has shown that there are some emerging insights regarding the emotional dimension. For example, from observing the students, it was possible to see the students were actually having fun with one of the practical assignments and also there was a student who stated in the interview with her that she did not believe that social networking tools were good for learning or that they were worth to use in an organizational or in a library context and for that matter she was very pleased and happy to have had such a learning experience with social networking tools. It is worth to underline here that the program is mainly for Library and Information Science Students and that some of the students have some experience as teachers, which is the case with this student of the latter example.

Mayer (2004) proposes learners should be "cognitively active" during learning and that instructors use "guided practice." It is important to mention that this study involves the social interaction in different scenarios, such as the learning interventions in class, assignments and the socialization through SN. The impact and efficiency of each scenario will provide interesting points for comparison.

The epistemological assumptions forming part of the basis of this study can be summarized as follows:
- The concepts of learning and knowledge are closely connected
- Knowledge is created through socialization (Vygotsky, 1978; Nonaka & Takeuchi, 1995) and can be discovered (Whitehead & McNiff, 2006), as people possess tacit knowledge within (Polanyi, 1958).
- Teachers are capable of generating personal theories by systematically studying their practice (Whitehead, 1989)

1.2. Social Networks

The working concept of social networks (SN) used throughout this research is: Web based applications that allow the publication or posting of user generated content and interactions between users. Kaplan and Haenlein (2010) set the genesis of these computer based SN on 1979, when Tom Truscott and Jim Ellis, both from Duke University, created Usenet, establishing it in 1980. Usenet allowed its users to post and read messages into categories or newsgroups, resembling a bulletin board system. However, they claim that the age of "social media" as we know it, probably started when Bruce and Susan Abelson founded Open Diary in 1998: "an early social networking site that brought together online diary writers into one community" (p. 2).

The importance of the consumption or the use of multimedia information in the era of SN is high. However, it can be argued that textual information is very much used everyday in SN, for example in the form of links for our friends, comments, products reviews or blog posting. Perhaps there is more text produced now than ever.

To use SN in a learning experience is a good opportunity to see how students can use these tools that they usually use for entertainment and communication, with the purpose of learning. The literacies needed to use these tools for entertainment purposes might not be enough for achieving learning goals, but each individual might reshape them. For example, while attempting to evaluate a piece of information only for entertainment purposes can be clearly different than to evaluate a piece of information that might enrich a person's knowledge or to contribute to learning outcomes. Also, an individual with poor digital literacies might find challenges in using social networking tools. It is one aim of this study to find out how much it can affect learning, what opportunities this issue pose and finally how this can be alleviated.

1.3. Literacies

The concept of literacies was chosen in this research to be used instead of just IL based on the point that there are an almost indeterminate number of literacies, depending on the field where the different researchers that have used a literacy associated concept come from; such as: new literacies, digital literacy, media literacy, numerical literacy, scientific literacy, musical literacy and so on. What all these and other sorts of literacies have in common is that they define the ability to handle a certain kind of information object or technology. As such, different literacy based terms may come together under the umbrella term of literacies, and be partly related to the term of IL. The working definition of IL used in this research is defined as the varying degree with which an individual possesses or has mastered competencies or skills for handling information of different nature or information, mostly in paper or traditional media and formats. The main interest of this research regarding these concepts lies in information handling as a general-purpose skill and also in the handling of information and communication technologies (ICTs)- they include SN.- Hence, the scope of this research regarding different literacies is limited to information literacies and digital literacies. It might be useful to include the concept new literacies, although problematic in its nature that gives uncertainty regarding when something is new and when it is not. In summary, the term literacies is used as an umbrella term to refer to the sum of different literacies, as stated before: information literacies, digital literacies, and new literacies. IL refers to the skills used to handle information, or an individual's capacity to handle information, mostly within traditional media; and DL refers to the skills used to handle, or an individual's capacity to handle ICTs. Finally, the term New Literacies (NL), would go beyond DL, as there are DL skills that are helpful to develop NL, but there are new activities that involve unique skills that might not correspond to traditional DL.
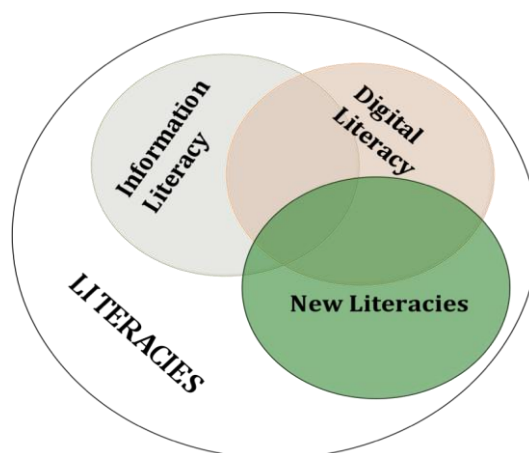
Figure 1. Articulation of literacy related concepts

Figure 1 above represents the articulation of literacy related concepts mentioned in the previous paragraph. The term literacies contains the other three concepts. Some ILs are translated to the digital world (ICTs). NLs are less intersected with IL and more with DL, as in their majority they imply the use of newer technologies, frameworks or workflows. Some NL might be the ones related to the content creation and curation using SN (as they might not be considered established skills). Obviously, DL and NL are related with one another because of technology, but at the same time, they would be somehow related to IL, as this technological side is related at the same time with the ICTs.

1.4. Research Questions

Research questions of this study were:

What significant issues, challenges and opportunities emerge when social networking tools are integrated into learning environments in higher education?

a) How do students' experience learning when they are engaged in a learning activity that integrates social networks?

b) In what ways are students' experiences of engaging in the learning activities dependent upon their literacies?

c) In what way do learning, literacy and social networking tools mutually shape each other?

2. Methodology

The methodological approach taken is qualitative. It involves the collection of in depth data related to: participants' experiences and interactions when using social networking tools, their performance of learning activities, the emergence of issues according to their literacies, and their learning processes. Data gathered is bound to be highly diverse and subjective. The methods and design of the methodology follow a participatory action research (PAR) perspective. This form of research builds on the action research and "group dynamics" models developed by Lewin (1958). Its focus lies on the effects of the actions of

the researcher on within a participatory community in order to discover or improve practices.

McIntyre (2008) cites as the main tenets of PAR:

a) A collective commitment to investigate an issue or a problem,

b) A desire to engage in self- and collective reflection to gain clarity about the issue under investigation,

c) A joint decision to engage in individual and/or collective action that leads to a successful solution that benefits the people involved,

d) The building of alliances between researchers and participants in the planning, implementation, and dissemination of the research process.

McTaggart, R (1997) sees PAR as a living dialectical process, one that changes the researcher, the participants, and the situations or realities where they act. Additionally, McIntyre (2008, p. 1) claims that the aims of these studies "are achieved through a cyclical process of exploration, knowledge construction, and action at different moments throughout the research process."

As it is intended to apply this method to education, we follow other pertinent literature, for example the works of Freire, supporting the active participation of students and his approach regarding the teacher-student dichotomy (e.g. 1990); and also Fals-Borda, with his incorporation of the community action into research plans (e.g. 1973).

The methods planned for the collection of data in the final study are: a diagnostic survey, a blog as a dialog space and manner of registering students' input, students' reports that are related to the assignments, and by the end of the study another survey and semi-structured interviews. Many methods were chosen for collecting data to be able to triangulate the data obtained using each of them, in order to achieve a comprehensive analysis of the interactions and experiences that occurred along this study.

2.1. Participants

The choice of participants is purposive, as Pickard (2007) states, it is used for ensuring that participants chosen contribute different perspectives on the phenomena to study. The participants for both the pilot and the final studies were students from LIS master programs. In the pilot study, a whole income of students was used, as there was enough organizational support to include this study within the courses of the students, after seeking their consent with a privacy statement and an assurance that no identifiable information was going to be used or needed for the study. However, this support was lost for the final study and as a limitation, the participation of the students has to be sought on a voluntary basis, outside of their class hours. It is a limitation in the sense that it presents a challenge for this methodology to be able to be implemented in fewer hours than in the pilot study, because the present and final   methodology is more extensive. The limitation of the time the students can dedicate to the study is crucial, as it is uncertain if it is possible to achieve significant and meaningful results by doing the study in a short time with the students and with a formal disconnection from their courses.

Under this methodology, the participants are to be divided in teams and each team is to choose a team leader. The teams are to perform the activities

indicated in the learning interventions part below, they were observed by the researcher and took the questionnaires. By the end all the participants have to be fill the surveys and the team leaders would be interviewed. The motivations for the choice of participants were because of their age and interests, their competence as SN users was assumed. So they should be individuals who have experience using SN in order to get valuable data.

2.2. The Learning Interventions

Figure 2 below indicates the design of the learning interventions planned for the final study, this intervention is divided in five stages, each of them have a series of topics that were discussed in class with the students, before each topic, students' input (what they do/what they think about) was noted, then the researcher started explaining the topics from that input, by the end of each of the four stages, that are the ones with topics discussed in class, there was a time opened for the students to discuss and then after class the blog was open to receive the online discussion of the day.
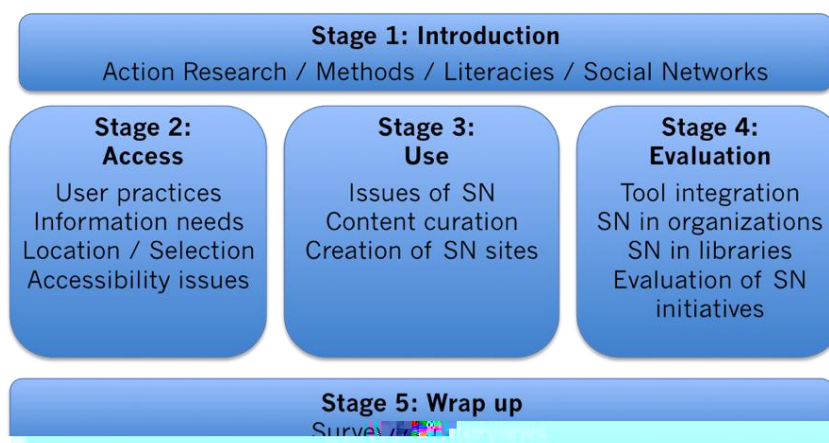

Figure 2. Design of the Learning Interventions for the Final Study

Three of these stages were modeled after the International Federation of Library Associations' (IFLA) core information competencies (Lau, 2006), the reasoning behind designing the learning interventions in this manner is, firstly, because the experience from the pilot study determined that the experience should be more coherent and uniform; and secondly, because this provides a better framework to determine how students' literacies (information and digital literacies) have a stake in their performance. The stages of these learning interventions and the assignments are briefly summarized in the following paragraphs.

- **Stage 1 Introduction:** the researcher introduced the students to PAR, the methods of this research, addressed privacy and ethical concerns, handed out the privacy statement and the ways he intended to conduct the study. According to the tradition of PAR, it is indicated that the participants must

have all the information possible concerning the research. Under the positivist tradition, this would carry a bias in the research. However in PAR, the issue of bias, trustworthiness and ethical issues are different. After gaining the consent of the participants, the researcher introduced the concepts of literacies and SN.

- **Stage 2 Access:** the topics explored in this session are related to the students' practices, information needs, location and selection of information, and accessibility issues. At this stage, the students have their first assignment: to write a short reflection on their own practices as users of SN.
- **Stage 3 Use:** the topics explored in this session involve the issues of SN, tool integration, content curation, and the creation of SN sites. In this stage, the students had to do their second assignment: to create a social site for a fictional information service and present a report about what they did, and the challenges and issues they faced.
- **Stage 4 Evaluation:** the topics explored in this session were: use of SN in organizations and libraries; evaluation of Information in SN; evaluation of social networking initiatives. This session was purposively located after the stage related to the use, because the third assignment was to evaluate one social site of a library or information service and, as they did one for themselves in the previous stage, they are gaining a better understanding for the evaluation and of the quality of such sites. It is hypothesized that this way of ordering the assignments would bring an interesting learning dissonance which would help students gain better insights and provide feedback on that. The report for this assignment had to include firstly, the evaluation of the social site; and secondly, the students were asked to revisit their assignments and say if they would change something after analyzing a real social site.
- **Stage 5 Wrap up:** this stage started just after the previous ended, this stage was intended to finish collecting the data to analyze. All students filled the survey and the researcher made appointments with the team leaders to have the interviews.

The Assignments were intended as role-playing types of activities, these types of hands-on activities are effective in the way that they "can equalize the relationships between the literate and illiterate, between the marginalized and the self-confident" (Mikkelsen, 2001, p. 118.) McIntyre (2008) states that because "PAR is context specific means that practitioners draw on a variety of quantitative, qualitative, and creative-based methods to engage participants in the construction of knowledge" In the learning interventions and the assignments, students contributed their own different abilities to do the assignment, the reports handed in are a reflection of these abilities, the challenges and issues they found by doing the assignments. It is important to note, then, the limitations individual students may have, which is something the individual surveys hope to address. The assignments were three, one per each main stage, the first involved a reflection on their practices as users of SN; the second asked them to create a social networking site for a fictional information

service; and the third one had them evaluate an existing social site for an information service. For each assignment they were to hand in reflection reports and at the end they had to reflect given the whole experience, if would they change anything in their way of doing the second assignment.

2.4. Ethical Considerations

A privacy statement was handed over to the participants, although no personal information was needed given the purposes of this research. This privacy statement asserts that, among other things, that no information that could be used to identify these individuals, was used in this work and that no personal information will be given to third parties. The lectures and the class discussions were recorded in audio and video after receiving consent from all participants. All questionnaires were made anonymous. All interviews were recorded in audio format, with consent from the participants and then transcribed for analyzing the raw data derived from them. For this final study, the researcher created an agenda for the learning intervention, which was based on the time and availability of the students.

2.5. Methods for the Analysis of the Data

The method chosen for the analysis of the data was content analysis, as Pickard (2007) puts it, "is [used] to present an explanation of those shared meanings and assumptions." (p. 241). This refers to the shared meanings and assumptions of the participants. For the analysis of the data, it was coded and a framework of categories was created to present it in a certain order.

The categories that were created given the data from the pilot study are:

- The identification of the most important issues of web 2.0 and SN that are faced by users within a learning environment
- A look at some of the challenges and opportunities of using SN in higher education instruction related to the students' literacies
- A look at the most useful activities for learning, within this study
- The topics the students learned about throughout the activities of this study
- Additionally, the refinement on the methodology in respect to the one for the pilot study, and the addition of new objectives and research questions, brought other set of categories, which are as follows:
- Insights into the mutual shaping phenomenon between SN, the learning experience and students' literacies.
- The challenges and opportunities of using SN in higher education instruction related to students' literacies.
- Students' reflections on their practice based on the learning dissonance created by the order of the assignments.
- The researcher/practitioner's reflections on his practices between the two studies conducted within this research.

4. Conclusions

Although faced with an important limitation, as it is the loss of the support the study has in the stage of its pilot study, it is still ongoing. This required a rethinking of the methodology, on how to conduct the study on the minimum amount of time possible and at the same time, to gather significant and

meaningful results. This limitation represented a challenge as well because the study has to be conducted in disconnection of the courses the students are taking. However, and hopefully, the students would be able to connect the dots and see the relationship between what they are learning in their courses and within this study, in order to better provide the researcher with some meaningful insight into the usefulness of this tool in higher education.

This time around, the methodology was better organized; as it added two research questions to the pilot study and a more solid philosophical background. One of the most important changes done in the methodology was to better structure it by borrowing the simple framework of information competencies, in order to better differentiate literacy skills the students may be using per stage of the learning interventions. In this manner, it is expected that the role of students' literacies in this type of study would emerge and would be possible to better analyze it.

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