

University of Lapland  
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**Social Media in collaborative learning in Higher Education**  
*A qualitative case study of teachers' and students' views*

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## **Master's Thesis in Media Education**

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Social Media in collaborative learning in Higher Education- A qualitative case study of teachers' and students' views.

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In this study, it was investigated how social media are used in collaborative learning in higher education and also how it can be better used in teaching and learning according to the students and teachers. The research questions of this study were: 1) How social media are used in collaborative learning by the teachers and students in higher education for educational purposes? 2) How could social media be used in collaborative learning process in higher education, according to the students and teachers?

Qualitative interviews were conducted to collect the data from ten students and five teachers from the different faculties of University of Lapland and Lapland University of Applied Sciences.

In conclusion it was found that, social media were not much used in collaboration with teachers by the students of both institutions. In case of teachers, it was found that all of them were using social media in their collaborative ways of teaching design and they have found social media as useful tool to deliver their teaching.

Most of the students and all the teachers found social media to be useful in their teaching and learning. But there were also some challenges faced and areas of improvements identified by them. Thus the higher educational institutions should understand the importance of using social media in teaching and learning and take initiatives to overcome the current challenges identified by the students and teachers.

**Key words:** Social media, Collaborative learning, Higher education.

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## **1. Introduction**

### **1.1 Defining social media**

The lives of people have changed radically almost all over the world, even if it is compared with the daily routines of five years earlier (Davis, 2012). It is sometimes hard to understand the change, if we do not stop and look back. The emergence of information and communication technology (ICT) has encouraged the new patterns of daily lives and many other ongoing changes. Now people have many options to make viable and faster communications with many affiliated social groups around them. Over the last few years the internet has brought opportunities for us to access information, gather and exchange knowledge using ICTs. Simultaneously social media has opened a new window for the educational institutes to reshape the concept of learning process for the learners (Redecker, Ala-Mutka, & Punie, 2010).

Kaplan and Haenlein (2010) define social media as, a group of internet-based applications that build on the ideological and technological foundations of the web, which facilitates the creation and exchange of user-generated content. They consist of different internet applications such as blogs, social networking sites, content communities, collaborative projects and virtual game worlds. According to Baines, Fill and Page (2010), the term social media is widely used nowadays. The significance of the implication of social media for educational practices and provision, especially in higher education are considered with importance by the educationalists. The immediate significance could be the changing role of students due to the increasing usage of social media in their everyday lives, which urges the essentiality of social media also in higher education. Many educationalists believe that these types of social media practices can support the collective creation of knowledge among the students and the wider community (Selwyn, 2012).

Social media applications are formed using Web 2.0 technology that enables the virtual creation and exchange of contents generated by the users (Kaplan & Haenlein 2010). These online technology tools allow people to communicate easily, utilizing the internet to share and discuss the information. Web 2.0 technologies in developing social media applications; allow both the developer and user of the application to modify the content of the application in a participative and collaborative way. Safko and Brake (2009) defined these social media

applications as the conversational media used by the user communities to share information, knowledge and opinions through their interactions with others. Thus conversational media are web based applications that enable easy creation and transmission of contents in the form of words, pictures, videos and audios. Therefore, social media sites can be characterized as interactive websites providing information, while at the same time their content can also be somehow produced by the users.

Social media are distinct from the traditional media, such as newspapers, television, and film. Traditional media generally require significant resources to publish information, where as social media are relatively inexpensive and accessible enough to enable anyone to publish or access information. There are various types of social media: social news sites (e.g. Digg, Reddit, NewsVine), social networking sites (e.g. MySpace, Facebook), social bookmarking sites (e.g. Delicious, Magnolia), social sharing (e.g. YouTube, Flickr), blogs and micro-blogging (e.g. Plurk and Twitter), and wikis (e.g. Wikipedia) (Evans, 2010). These different types of social media have different types of goals and each type has a different measure of success and usefulness. This is why, within educational practices using social media, these goals need to be worked into the ICT strategy and teaching design from the beginning. The advents of new media like social media has enhanced the trend towards user-generated content, and have increased options with limited budgets, yet enforcing accountability to the various aspects of the society including education. In recent years' social media, likely more than anything else has significantly influenced most of the daily lives of people. Among the various social media, Facebook, blogs, Twitter, YouTube and LinkedIn are the top listed from the user and usage point of view (Davis, 2012). A global social group and conversational world that has developed over the past few years because of tools like Facebook and Twitter, which might have a strong impact or influence on the radical change of lives. In formal media education has had an influential aspect of moving towards development of a much broader new forms of learning beyond the class room, and the ubiquity of social media is apparent at the universities where the technology is transforming the ways students communicate, collaborate and learn (Buckingham, 2003; Tess, 2013). Social media like Blogs or Facebook are nowadays commonly used in learning and education.

## **1.2 Recent studies on social media in collaborative learning**

In recent years several studies explored the usefulness of social media in educational learning and found collaborative learning settings as a very effective and ideal stage to implement the social media practices (Ntlabathi, Nkonki & Mkonki, 2014; Martín-Gutiérrez, Fabiani, Benesova, Meneses & Mora, 2014; Aghaee, 2010; Liao, Huang, Chen & Huang, 2015). Due to rapid information and technological infrastructural advancement in the recent past, usage of new media tools like social media became an increasingly important issue which had a great impact on modern teaching and learning. Gokhale (1995), examined the effectiveness of individual learning versus collaborative learning in enhancing drill-and-practice skills and critical-thinking skills. It was found that students who participated in collaborative learning performed significantly better on the critical thinking test than students who studied individually. Most of the participants felt that group work helped them to better understand the material and stimulated their thinking process. In addition, the shared responsibility reduced the anxiety associated with problem solving. The participants commented that also humor played a vital role in reducing anxiety. However, a couple of participants mentioned that they wasted a lot of time explaining the material to other group members.

A recent research by Rocca, Margottini and Capobianco (2014), shows that collaborative learning can create a motivational situation for the students to perform their studies in an affectionate way. They investigated the hypothesis that collaborative learning and peer tutoring in a university environment can positively influence students to maintain a constant motivation and affection towards their study and also help to reduce the drop-out rate and encourage greater regularity in the academic career. Their pilot study was performed in a university setting among the students who were taught in a collaborative way within a certain time span. At the end of their research they found that students felt involved in the building of learning and teaching paths, which they helped with their shared knowledge. The operations of analysis, synthesis, evaluation and online correction of the pathways followed and of the study materials, as well as the in-presence public presentation of the final work, helped to reinforce their self-esteem, their sense of belonging to a community that learns and their positive disposition towards their discipline and their final exam. Thus due to the nature of collaborative learning, it would be interesting to investigate the compatibility and the usefulness of social media in collaborative learning practices.

Martín-Gutiérrez, Fabiani, Benesova, Meneses and Mora (2014), have showed the importance of collaborative learning to implement augmented reality as a new technological tool to develop new teaching methodologies bases on the computer technology. According to the researchers of this study, despite of their validity and successful results, traditional methods are recently avoided by the educational institutions. Rather, the interest now focuses on more productive methods that may improve the learning experience and the students' intellectual level. Varieties of educational tools based on computer technology are provoking the development of new teaching methodologies, and in this study it was found that augmented reality (which allows a combination of real world elements captured through a camera with multimedia elements such as text, images, video or 3D models and animations) as one of the most promising technologies. Computer supported collaborative learning is a pedagogical approach that can be used for deploying educational apps based on augmented reality in higher education. This is because in a collaborative learning setting learners perform common tasks in small groups in order to reach shared goals or learning results through interactions and active learning. In augmented reality where the virtual and physical worlds coexist, users learn while communicating with others in the same space. This naturally leads to collaborative interactions. Mobile devices, particularly smart phones, are an ideal platform for the collaborative augmented reality.

Liao, Huang, Chen and Huang (2015), explored the use of social network sites as in collaborative learning environment, to see how they can be used more effectively. Authors emphasized to explore collaborative learning in a ubiquitous learning (U-learning) context, as it can promote the development of self efficacy, enhance learning motivation and active learning attitudes and lead to improved learning outcomes. Ubiquitous learning indicates the use of wireless and mobile technologies by the students to share virtually their knowledge and experiences gained from the computer supported real world. Also, students learning processes are possible to be detected in both real and virtual situations in a U-learning environment (Hwang, Shi & Chu, 2011). The main purpose of the study was to attempt to introduce collaborative learning strategies into a U-learning environment, and use team cooperation to enhance peer interaction to effectively enhance the learning achievements and learning motivation of students. The aim was to establish a comprehensive evaluation model for the instructors and researchers to take the advantages of social media networking sites for pedagogical purposes. This study evaluated learners' acceptance and usage effects of social networking websites as a collaborative learning platform through technology acceptance

model, collective efficacy theory along with a Jigsaw-based collaborative learning method. The results of this study suggest that using Jigsaw-based collaborative learning approach is very much compatible with the social networking websites, as the platform itself can increase positive attitude to the system and also increase their learning motivation to achieve their learning objectives. The platform was perceived as playful and useful, thus the learning attitude and usage effect was also enhanced.

Fessakis, Dimitracopoulou and Palaiodimos (2013) investigated the impact of interaction analysis on group collaboration through blogs in learning by design scenario. Due to the consistency to the modern learning theories, the uses of social software like blogs have emerged in the educational community. Blogs constitute special instance of social software that is a network application supporting groups of actors in communication and interaction. Students participating in blogging have opportunities to reflect on their texts engage in writing for significant time intervals and trigger long dialogue with their readers leading to new writing cycles. In teaching and learning, blogs can be used to collect learning resources and share ideas and experiences. Log notes and observations during an inquiry learning activity can be maintained using the blogs. To manage a project developing dialogues in an online forum, reflect and communicate with teachers and peers-students, develop collaboration and social skills, run online school newspapers are also possible using blogs. Use of blogs in teaching and learning can be motivating for the participants to participate more actively in a course. A quantitative interaction analysis, of groups collaborating through blogging, was performed to investigate the impact of analysis over the collaborative learning by design. As a research result it was found that interaction analysis can increase the self regulation in a computer supported collaborative learning environment. The effectiveness of collaborative learning design model was increased when the interaction analysis tools were combined within the design. Students learnt to use blogs easily and found it suitable for the communication and information management requirements of the scenario and also believed that blogging in the particular context of the learning scenario makes them better collaborators. The interaction analysis graphs gave students the impression that teachers are monitoring their participation in the groups and this facilitates/urges students to contribute and collaborate more.

Aghaee (2010) implemented collaborative theory to explore, how are students using social media to support educational learning and what are the benefits and limitations? By doing a

qualitative study author concluded that social media is a useful tool for supporting educational learning, although it has some limitations and negative aspects. For example, half of the student thought that interaction is less effective by using social media and the cause might be due to losing body language, lack of symbols and difficulty of writing or sharing formula. Most of the respondents did not consider the collaboration on social media as a substitute of face to face interaction and the traditional campus education. All the respondents used social media but only a quarter of them used it for academic purpose.

Ntlabathi, Nkonki and Mkonki (2014), showed the importance of web based technologies in higher education. Their main concern was the usage of social media by the teachers and students at higher education level. They mainly studied social media as a web based technology in higher education. Their main was to find out, what are other technologies than Blackboard (Learning management system) are there used? They found that web based social media technologies are widely used in higher education for different purposes. After the investigation, it was clear that most lecturers use Blackboard, followed by v: drive and e-mail. Along with these technologies, other technologies used at the institution are mostly emerging technologies and still very new both in the social space and academia. They are also widely used by students in their social environments for example; Facebook, Myspace and others. Students would find it easy to work with these technologies as they use them most of the time to communicate with their peers and to source information and they support each other on how to use them. This should be seen as a positive aspect of these technologies as enriching collaborative tools.

### **1.3 Research context**

In this study the use of social media is studied in the context of higher education in Finland. Students can start their bachelor degree studies either in polytechnics or in the universities after completing basic and secondary education. (Finnish National Board of Education, 2015.) Finnish higher education consists of a dual structure of Universities and Universities of applied sciences. There are fourteen universities and twenty four polytechnics are operating under the Ministry of Education and Culture in Finland. Other than these there are also two more self governed polytechnics operating in different locations of the country. (Study in Finland, 2014.) According to the Statistics Finland (2015), a total number of 163,800 students attended university education leading to the degree in 2014. In the same year, 138,700

students attended the polytechnics in Finland. Finland has maintained its long term commitment of free high quality schooling from kindergarten to university to the Nordic form of welfare state. Finland was ranked first in the UNDP Technology Achievement Index in year 2001. (Kozma, 2005.)

A study by Atjonen and Li (2006), shows that all university computers are connected to the internet through multimedia computers and pedagogical use of ICTs is very common. The ICT infrastructures in Finnish higher educational institutions are found to be of good by these researchers. There have been various in-service channels to guide the teaching staff and IT literacy for the students to improve their ICT skills. The development of technological infrastructure and human resources were found to be well promoted by all the higher educational institutions. The enhancement of web based courses using platforms like WebCT or Moodle had been in practice. The establishment of Finnish Virtual Universities with the aim of creating a network of universities shows the significance of ICT infrastructural development in Finland; even though it was closed at the end of 2010 (Atjonen & Li, 2006; Vuojärvi, 2013). Web based Open University initiated by all the universities also shows the richness of Finnish higher education and technological infrastructure. The integration of mobile technology and wireless networks has also opened up more opportunities in this field.

Two Finnish higher educational institutions as Lapland University of Applied Sciences and University of Lapland were purposefully chosen by the authors as the case institutions of this study. These two particular case institutions were chosen based on researchers own judgments regarding the research purpose and needs (Gray, 2005). Between these two higher educational institutions, University of Lapland has the university settings and Lapland University of Applied Sciences has a polytechnic status. Combination of these two institutions as the context of this study reflects the dual structure of Finnish higher education. Thus studying the phenomenon of the use of social media in collaborative learning within these two higher educational institutions can give a balanced view of the phenomenon.

Both of the case institutions are situated in Rovaniemi city of Finland. University of Lapland was founded as the University College of Lapland in year 1979. In the first January of 1991 it has become the University of Lapland and started operating as the north most university in Finland and in European Union. The university has four main faculties: Faculty of Art and Design, Faculty of Education, Faculty of Law and Faculty of Social Sciences. The University

has near about 5000 students, 4886 adult education students, 652 of academic and administrative staffs and 63 professors. (University of Lapland, 2015.)

Lapland University of Applied Sciences is a higher educational polytechnic institution, which is maintained by Lapland University of Applied Sciences Ltd. Along with many others organizations, University of Lapland is also one of the owners of this institution. The polytechnic has four field of expertise: Wellness services, Business and culture, Tourism services and Industry and natural resources. It has total number 5618 students and 560 employees operating in different municipalities in Lapland. (Lapland University of Applied Sciences, 2015.)

By looking into the previous research studies it is clear that the usage of social media can have a significant impact over the educational sectors, and collaborative learning situation can play a vital role while designing and implementing the social media towards effective learning. It is a challenge for the Finnish higher educational institutions to effectively integrate social media within their strong ICT infrastructure to improve learning and foster the new learning experience. Thus, it would be interesting to study this issue in the context of Finnish higher education, both from the perspective of teachers and students of higher educational level. In this thesis, the usage of social media in collaborative learning (Dillenbourg, 1999) has been investigated in the context of Finnish higher education through a qualitative case study of two higher educational institutions. The aim was to examine the usage of social media in collaborative teaching and learning situations in higher education and to find out the better ways of integration of social media in collaborative learning process, if needed.

Data were collected from students and teachers in both of the case institutions. After analyzing the collected data it was found in the study that, social media were not much used by the students in collaboration with the teachers. Most of the students were using social media for learning purposes from their self motivation. Students have used social media in their learning and collaboration found it very useful and effective. Some specific students were found to be using social media not at all and think that it may not help much in their patterns of learning activities. In case of teachers as the participants it was found that, all of them were using social media in collaboration with their students and also found those as the effective tools for delivering their teaching towards efficient outcomes from the students.

In the following chapters of this paper, the applied theoretical concepts of social media in collaborative learning theory by Dillenbourg (1999) are presented followed by methodological perspectives, participants, findings, analysis and conclusion. Methodological perspectives include the description of research design, participants, data collection and analysis. After analyzing the collected data, analysis and discussion leads to the findings of this study in relation to the selected theoretical framework. This paper concludes by presenting recommendations based on students and teachers responses along with providing the ideas of further research and developments.

## **2. Theoretical Framework**

### **2.1 Collaborative learning theory**

The term collaborative learning has a variety of uses inside each academic field and across the field. Dillenbourg (1999), described collaborative learning as a situation in which a pair, a small group (3-5 subjects), a class (20-30 subjects), a community (a few hundreds or thousands of people), a society (several thousands or millions of people) and all intermediate levels learn or attempts to learn something together.

Learning can be performed by following a course, studying course material, or by performing learning activities such as problem solving or learning from lifelong work practices. Learning includes more or less any collaborative activity within an educational context, side effect of joint problem solving activity which creates new knowledge or improves the problem solving performance (Dillenbourg, 1999). From the development perspective learning is a cultural or a biological process that occurs over years. The collaborative activities like sharing course assignments or studying course material together can be termed as collaborative learning more specifically. From this view point learning can also take place in collaborative work, which refers to the lifelong acquisition of expertise within a professional community. Thus it seems like learning is more about collaboration than the learning itself. To learn something together can include different forms of interactions such as face to face or computer mediated, synchronous or not, frequent in time or not. Labor can be divided in a systematic way or it can be a truly joint effort (Dillenbourg, 1999.)

Collaborative learning can be understood as a pedagogical method, where a teacher asks two or more people to collaborate with the expectation of learning efficiently. It can also be described as psychological, where one observes that two or more people have learned through the collaboration mechanism. However, Dillenbourg (1999) argues that collaborative learning is neither a method nor a mechanism. He further explained that, individual cognitive system do not learn because they are individual or peers, but because they perform some activities as reading, building, predicting, which triggers some leaning mechanisms as induction, deduction and compilation. But in case of interaction among subjects, it generates extra activities as explanation, disagreement, mutual regulation, which triggers extra cognitive mechanisms as knowledge elicitation, internationalization, reduced cognitive loads.

Collaborative learning field is precisely about these activities and mechanisms which may occur more frequently in collaborative learning than individual learning. But there is no guarantee that those mechanisms will occur in any collaborative interactions and also they do not occur only during collaboration.

Collaborative learning is not a method because of the low predictability of specific types of interactions (Dillenbourg, 1999). He furthermore explained that, as collaborative learning takes the form of instructions to subjects, a physical settings and other institutional constraints, hence collaborative situation is a kind of social contract either between the peers, or between peers and a teacher. This contract specifies under which some types of interaction may occur but there is no guarantee that they will occur. Thus, collaborative learning describes a situation in which particular forms of interaction among people are expected to occur, which would trigger learning mechanisms but there is no guarantee that the expected interactions will occur actually occur.

To sum up, it can be said that in a collaborative learning two or more people interact together to learn something or at least attempt to do so. In their theory of collaborative learning Roschelle and Teasley (1995), describe collaboration as a coordinated, synchronous activity rather than a situation. Such a coordinated and synchronous activity occurs as the result of a continued attempt to construct and maintain a shared conception of a problem. However, according to Dillenbourg (1999), while performing learning activities together collaborative learning can be asynchronous as well. A mutual effort of shared understanding can occur in non collaborative learning activities like teacher-pupil interaction and in virtually all verbal interactions. However, there is always a process of performing conceptual changes by peers and also collaborative activities are the precondition of effective verbal interactions. A shared understanding can occur when a group builds common grounds, aiming to perform well together in future.

Rodriguez-Donaire and Amante (2012), described collaborative learning from the context of new teaching methodologies. According to them, collaboration includes planning, sharing, coordinating, decision-making and general communication between two or more members working together on a specific task. With such new contexts modern teaching methodologies includes project collaboration through BSCW (Basic Support for Cooperative Work), content collaboration through Wikispaces, Moodle and video streaming through YouTube. These

social media, creating collaborative web based environments (CWBEs) have changed the ways of sharing documents and rich media by providing new communication tools for efficient team collaboration helping team members to achieve a common goal. In such a dynamic collaborative environment, learners can interact, engage in critical thinking, share ideas, defend and challenge each other's assumptions, reflect on the learning material, ask questions, test their interpretations and synthesis and revise their ideas. According to Rodriguez-Donaire, Amante and Del-Olmo (2010), Web based collaborative learning is very much harmonious in changing the context of teaching methodologies and reshaping the learning environment. New generations of web based collaborative tools such as social networks, blogs, wikis, and video streaming etcetera are included in the collaborative learning environments (Birenbaum, 2003). Collaborative web based learning environment have improved the learning methodologies, group work, team performance and also opened the area of distance learning which ultimately improved the quality of education.

However, collaborative learning theory by Dillenbourg (1999) was used as the main theoretical framework of this research work to evaluate the usage of social media within that. The theory was specifically preferred by the researchers because of the simplicity and clarity in the explanation of different elements of the theory, which was found to be competent with this research work. In this theory, interaction is considered as the key for collaboration and learning includes more or less any collaborative activity within an educational context. Some preset criteria while designing collaborative situation can increase the probability that some types of interaction occur. Preset criteria can mean setting up group size and criteria to ensure symmetry of status, action and knowledge within the group, clear specification of roles, imposing interaction rules, and monitoring and regulating the interaction (Dillenbourg, 1999).

## **2.2 Collaboration**

According to Dillenbourg (1999), a theory of collaborative learning concerns four aspects of learning as: situation (symmetry, degree of division of labor), the interactions (synchronicity, negotiability), process (rounding, mutual modeling) and effects.

### 2.2.1 Situation

A situation can be termed as more or less collaborative based on the level of peers or the collaborators. For example, collaboration between students can be more collaborative than collaboration between a teacher and a student. A situation is more collaborative if the peers are of more or less at the same level and can perform the same action, have a common goal and work together (Dillenbourg, 1999). Thus symmetry of action, symmetry of knowledge and the symmetry of status can support the creation of a collaborative situation. Symmetry of action indicates the extent to which the same range of action is allowed to each subjects, symmetry of knowledge indicates the level of knowledge or skill or development possessed by the agents. The symmetry of status indicates the extent of similarity of status of the agents within their community. Some preset criterions or initial conditions can increase the possibilities of creating symmetry of action, knowledge and status within a group which can lead to the collaborative activities. If the situation is designed carefully, there is always a higher probability to occur some sort of effective interaction. Designing can include setting various criteria like group size, gender distribution among the groups, homogeneity or heterogeneity of the group members, level of the knowledge of the group members and group orientation. However, these conditions may interact with each other in a complex way. Effect of these criteria can differ according to the context of the tasks, thus it is very difficult to set up initial conditions that guarantee the effectiveness of collaborative learning.

For a situation to be characterized as collaborative there should be a common goal among the collaborative agents, whereas competition relies on conflicting goals. Shared goals can be only partially set up at the outset of the collaboration; they have themselves to be negotiated (and probably revised as work progresses). Through the negotiation of goals agents not only develop shared goals but they also become mutually aware of their shared goal (Dillenbourg, 1999). Work together concerns with the degree of division of labor among the group members. If partners in a group, doing the division of labor by splitting the work and solving the subtasks individually to assemble the partial results into the final output then there occurs cooperation instead of collaboration. Whereas in collaboration partners do the work together; however some spontaneous division may occur even when two people do really work together.

### 2.2.2 Interaction

A situation can be collaborative if learners interact in a collaborative way (Dillenbourg, 1999). A collaborative way means interactivity, synchronicity and negotiability of the learners in a situation. Collaborative situation should be quite interactive. To create a collaborative situation of interaction, approach to over specify the collaboration contract with a scenario based on roles could be imposed (Dillenbourg, 1999). This approach tends to turn collaborative learning into a method by defining a clear specification of roles. For example, a) asking subject to play a specific role in an argumentation, even if the expressed viewpoint is not their personal at the outset, b) giving different visual view point to the subjects, c) controlling data access in such a way that group members have access to different data. The level of interactivity of the collaboration is determined by the degree of mutual interactions among the learners. However, the degree of interactivity among the peers is not defined by the frequency of interactions but by the extent to which these interactions influence the peers' cognitive process (Dillenbourg, 1999). Thus the criterion to determine the degree of interaction and action varies according to situation and the context of the collaboration.

Synchronicity indicates doing something together rather than cooperation in collaborative interaction. Synchronicity is less a technical parameter than a social rule. Here, the speaker expects that the listener will wait for his message and will process the message as soon as it is delivered. If the medium breaks the conversational rules established for another medium, users create new ways to maintain this subjective feeling of synchronicity of reasoning (Dillenbourg, 1999). Thus to scaffold productive interactions by encompassing interaction rules in the medium, the probability of synchronous interaction can be increased. The probability of occurring interaction increases if there are interaction rules specified for the groups. For example, teacher can imply the rule for every member in a group to provide their opinion in a face to face collaboration. In computer supported collaborative learning, interaction rules can be continuously reinforced by encompassing them in the design of the computer mediated communication medium.

Collaborative interaction is negotiable and unlike the hierarchical situation, one partner will not impose his view on the sole basis of authority but will argue, negotiate and attempt to

convince on his stand point. There should usually be a space for negotiation and also possibility to negotiate how to interact in a collaborative situation. The degree of negotiability should be grounded among the collaborative partners so that there remains a possibility to negotiate how to interact. Negotiation cannot occur if there is no determined space for the negotiation. Space for negotiation and space for misunderstanding, both have a similar role while grounding the collaboration. In fact space for misunderstanding constitutes an important element in modeling the dynamics of collaborative learning. Even though there is always a chance of misunderstanding in any well designed collaborative situation, the space for misunderstanding narrows down the chance when partners negotiate the next action to be performed or which problem they have to solve.

### **2.2.3 Process**

Some learning mechanisms of individual cognitions can be more intrinsically collaborative. The learning mechanisms involved must be those that operate in the case of individual cognition, since there are still individual agents involved in group interaction (Dillenbourg, 1999). Some mechanisms, as the central of individual cognition can occur in collaborative learning situation. Those mechanisms are induction, cognitive loads, (self) explanation and conflict. Even though it cannot be specific to say that these mechanisms will occur in collaborative situations, it just simply may happen often or spontaneously in those situations.

Induction is tendency of a pair to represent a more abstract form of a problem at hand as their joint drawing had to integrate the common features of the representation built by each individual. Keeping as relevant features of both of the representation is basically an inductive process (Dillenbourg, 1999).

The division of labor reduces the amount of processing performed by each individual. Thus reduced cognitive load may occur because of regulating ones partner leads to improvements of group members' regulatory skills. Conversely, the interaction with other group members can increase the cognitive load which is not usually such significant but may become significant and detrimental in case of over-load.

While collaborating in a pair, members have to justify themselves to each other, to explain what they are doing and why they are doing it. Intuitively, these efforts should be related to the learning that is frequently observed during collaboration. Learning might take place between both of the individuals while explaining to each others. According to Webb (1989), the amount of learning by the individual who provides explanations seems to be related to the cognitive activities necessary for constructing and presenting explanations and the amount of learning by the individual who receives explanations seems to be related to variables such as how relevant, understandable and elaborated the explanations are.

Conflict can occur while collaboration in an intra-individual and inter-individual form. Conflict is a social concept which explains the social interaction and can occur among the members due to the differences of individual knowledge, view point and perception which can lead to the conflicting statement in a collaborative situation.

#### **2.2.4 Effect**

Effects are generally measured in collaborative learning based on some individual pretest or post test with respect to the task performance. According to Dillenbourg (1999), as a collaborative learning situation includes a variety of contexts and interactions, effects should be measured in terms of a particular category of interaction instead of being general. To monitor and regulate interaction, teachers' responsibility could be to be a facilitator rather than a tutor. This role is more important when group size is larger and less structured tasks are discussed. Facilitator's role is not to provide the right answer to a problem or to say which group members are right but to provide hints and guidance in order to redirect group in a productive direction and to monitor which members are left out of interaction to ensure some sort of interaction by all the members.

The effects of collaborative learning are often assessed by individual task performance measures. However, Perkins (1993) argues that a more valid assessment would be to measure group performance instead of individual performances. Thus the concern there would be, weather the performance of a specific group has increased or not and if individual

performance assessed, the group members have developed some generic ability to collaborate or not, which they could re use in other groups.

## **2.3 Social media in collaborative learning**

Due to the participatory and collaborative aspects of social media with a sufficient critical mass of users and applications are of genuine collective benefit to the students and educators in teaching and learning especially in higher education (Selwyn, 2012). Different collaborative aspects of social media can have different benefits and usefulness for collaborative learning. Aspects of collaborative learning such as situation, interaction, process and effects could be well supported by social media in many ways.

### **2.3.1 Social media creating collaborative situation**

Use of social media in teaching and learning can create a situation of interaction, as within the social networking sites people create personal information profiles with information, photos, videos, audios and blogs to share with friends and other people by offering them an access to the site and also interact with them exchanging message comments (Kaplan & Haenlein, 2010). Social network sites, such as Facebook and Google+ offer an easy way to access and exchange information within the circle by posting of ideas using links, shares and also by commenting on others (Liao, Huang, Chen & Huang, 2015). Social networking sites are used to foster collaboration and these platforms facilitate the cooperation and collaboration among the learners in a wider scale. Thus they help to expand the reach and capability of collaboration with improved functionality (Crawford, 2011). These offer an autonomous platform for students to exchange ideas and develop shared knowledge (Liao, Huang, Chen & Huang, 2015). As these social networking sites do not need any special skill or knowledge to operate in and also works as a common ground for a large scale of users, thus those create symmetry of knowledge, action and status among the users which lead to a collaborative situation (Dillenbourg, 1999). And teachers can also control the group size, group orientation, gender distribution and heterogeneity or homogeneity of the group members to facilitate the effective interactions on social networking sites.

Facebook with its collaboration supporting tools can be of a potential in collaborative learning and education. Facebook represents the opportunity to generate knowledge and inter-group cohesion. When a student interact in a network with shared goal on a specific topic, can build interpersonal network and support and also achieves the feeling of belonging and social identity (Francesc & Neus, 2011). This way Facebook is creating a collaborative situation with a common goal and symmetry of status (Dillenbourg, 1999).

In the same way, use of blogs can create a situation in which students feel themselves to be important parts of the classroom community and that their needs and opinions are recognized and addressed (Churchill, 2009). Like social networking sites, blogs and wikis also have some aspects which facilitate collaborative situation for interaction. In the blogging arena, EduBlogs based on educational courses or research has begun to emerge in educational circles (Williams & Jacobs, 2004). Blogs have their own various educational uses which can create a situation for collaborative interactions. Like social networking sites, blogs are also can be created easily, and discussions within the blogs can make them effective in teaching and learning. The collaboration and interaction between learners and teachers over the blog is a sophisticated practice in teaching and learning. The minimum required technological skills to operate in a blog can create feeling of symmetry of knowledge among the users towards creating a situation of collaborative interaction. Therefore, blogging has the potential to be a transformational technology for teaching and learning, and setting up blog for teaching and learning is a considerable factor for the universities (Williams & Jacobs, 2004). Blogs can include collaborative activities like, reading blogs of others, receiving comments, previewing tasks of others and reading feedback. Also, students can use blogs to present their regular learning task outcomes for assessment. (Churchill, 2009.) To support these collaborative activities blog provides a forum of academic discourse that reaches beyond the subject matters and augments the knowledge creation. Student can learn as much from each other as they learn from instructors or textbooks in this significant common place. (Williams & Jacobs, 2004). Teachers and students can use blogs as a central location where the information can be stored and managed (Churchill, 2009). Thus, blogs provide a platform for working together and also there are scopes to set up initial conditions like group size, group orientation and symmetry over blogs to create an effective situation of interaction.

Wiki platforms have some particular properties that support collaboration in a collaborative learning with different context. Wiki was found to be able to provide a sufficient inter-

subjective space to support students' collaborative work. An inter-subjective space is important to hold collaborative learning activity together and for functioning of a group. Space has to be rich enough for joint learning. Basic wiki (not prefabricated according to the conditions) is able to support a variety of collaborative learning activities. (Larusson and Alterman, 2009.) Through wikis it is possible to facilitate distance learning by publishing syllabus, handouts and other resources and student can directly interact by commenting and revising (Duffy & Burns, 2006).

### **2.3.2 Social media in interaction**

It is clear that along with other social media, blogs and wikis can support a wide range of people collaboration but it is the collaborative ways of interaction which makes the situation as collaborative (Dillenbourg, 1999). From this point of view, the scope for interactivity is the main reason for the popularity of blogs (Williams & Jacobs, 2004). Interaction is the key to build a successful blog, which also provides an opportunity to provide feedback and build interactive relations (Cass, 2007). A possibility to comment make them interactive media which is commonly in a text based form (Kaplan & Haenlein, 2010). Blogs provide students a high level of autonomy and scope of greater interaction with peers (Williams & Jacobs, 2004). Continuous monitoring and analyzing of students' interaction graphs and trends over blogs, urge and motivate students to contribute and collaborate more (Fessakis, Dimitracopoulou & Palaiodimos, 2013). The analysis of interaction graph of collaborating students could help teachers to monitor, moderate, coordinate and assess, and students to increase their awareness and self-regulate during their participation. Thus blogs are convenient for better collaboration and help students to self regulate (Fessakis, Dimitracopoulou & Palaiodimos, 2013). This way blogs demonstrate the scope of greater mutual interactions and Wikis can facilitate group authoring where the group members together can build and edit a document on a single central wiki page other than doing it individually (Duffy & Burns, 2006). Wiki pages are easy to co-edit and are automatically published online for a common sharing regardless of space and time (Larusson & Alterman, 2009). Wikis have significant potential for synchronicity, which indicates doing something together by collaborative interaction (Dillenbourg, 1999). To increase the probability of effective synchronous collaboration, interaction rules can be imposed in wikis. For example, every member must have to edit the document or a specific part of that. The numbers of edits by an individual are possible to be tracked on wikis.

Facebook as a social networking site has also a wide scope of synchronous activities. Facebook can provide several communication channels to communicate with peers or instructors to facilitate synchronous and asynchronous discussion (Alotaibi & Bull, 2012). An individual or a group wall and discussion boards are examples of asynchronous communication whereas interaction can also be synchronous (Francesc & Neus, 2011). The group tool of Facebook can be used to create online learning communities where open groups can be created to post ideas for any specific collaboration. Private groups are effective for discussion and sharing more confidential matters. (Crawford, 2011.) To increase the possibility of specific interaction within a collaborative situation, specification of collaboration and roles can be imposed by controlling data access in such a way that group members have access to different data to make the interaction effective. Thus social networking sites with Web 2.0 technologies, with their wide-ranging interactivity potential and collaboration facilities can foster active participation of peers towards the student-centered collective learning. Diverse virtual student groups with shared goals can be organized to promote collaborative working. This can lead to construction of shared meaning depending on the purpose. (Francesc & Neus, 2011.) Even though social networking sites were developed to facilitate the social interactions, with the new generations of Web 2,0 technology, social networking applications offer significant supporting tools for collaborative learning as well (Alotaibi & Bull, 2012). Students with considerable self regulation abilities and involvement in online communities can create efficient interaction through exchange of opinion and feedback while collaboration leads to the greater learning effectiveness (Liao, Huang, Chen & Huang, 2015). Thus social networking site applications have widen the scope of learners interaction and collaboration significantly (Alotaibi & Bull, 2012).

### **2.3.3 Social media facilitating the process**

In the process of collaborative interaction, social media can facilitate some mechanisms of individual cognitions. Social networking site applications help as an intellectual partner for students to promote critical thinking and cognitive processing. Social networking sites allows the use of text, voice, music, graphics, photos, animation and video to promote users thinking and along with many other tools within them they can be used for problem solving, critical thinking and collaboration (Francesc & Neus, 2011). For example channels in Facebook, including private messages, public wall postings, status updates, instant messaging, groups,

and applications may facilitate collaborative sense making among students (Lampe, Wohn, Vitak, Ellison & Wash, 2011). Thus in addition to the social interaction, Facebook can also be used to enhance critical thinking through using its communication and interaction tools among learners, and result in collaborative shared knowledge building (Alotaibi & Bull, 2012). In the same way posting and commenting in blogs can generate new ideas and evaluation where personalized responses and criticisms deliver a common understanding of a collective knowledge which provides a forum of learning (Williams & Jacobs, 2004). The nature of blogging engines makes them as the warehouse of captured knowledge (Williams & Jacobs, 2004). While writing entries and responding to the feedback there is always a reflection of the personal character of a blogger and also a reflection of their own traits and idiosyncrasies which can explain any situational conflict or can also take the shape of self-explanation.

#### **2.3.4 Social media in measuring effect**

To measure the effect of collaboration a continuous supervision of a written task is possible through wiki rather than commenting only on final draft. A wiki can be very useful for tracking and streaming group projects. Wikis can facilitate the group work evaluation by the tutors and course evaluation by the students as well (Duffy & Burns, 2006). Perkins (1993), states that the effect of collaborative learning should be measured by group performance instead of individual performances, thus social media like blogs and wiki can be very useful in that point of view. Within the social media like wikis, Google+, Facebook discussion groups and blogs have the scope for teachers to monitor and regulate the interaction. However, according to Dillenbourg (1999), within a collaborative situation, teacher's role should be as a facilitator rather than a tutor who provides direct answers or solutions of a problem.

#### **2.4 Research questions**

From the perspective of collaborative learning theory by Dillenbourg (1999), with the purpose of examining the usage of social media in collaborative learning in higher education and to find out the better ways of integration of social media in collaborative learning, the research questions of this study are:

*I. How social media are used in collaborative learning by the teachers and students in higher education for educational purposes?*

*II. How could social media be used in collaborative learning process in higher education, according to students and teachers?*

### **3. Methodology**

#### **3.1 Research design**

A research design provides a framework for the collection and analysis of the data (Bryman & Bell, 2011). The research design in this study is a qualitative research interview and the data were collected through the qualitative face to face interviews. This is because to serve the purpose of the research, authors have collected primary data both from the students and the teachers of Lapland University of Applied Sciences and University of Lapland to understand how they are using social media within collaborative learning situation. According to Kvale (1996), the qualitative research interview is used to describe a particular phenomenon through live experiences of subjects by collecting their experiences regarding that particular phenomenon and interprets the meaning from the subjects own point of view. In this research, the particular phenomenon as the experience of using social media in teaching and learning and specifically in a collaborative learning situation by some specific students and teachers of the Lapland University of Applied Sciences and University of Lapland were studied and explored. As qualitative interview and their analysis seek to describe and understand the meaning of a specific theme of a phenomenon experienced by the subjects, here in this research the use of social media in teaching and learning are investigated to understand, how those are used and also to find out how those could be better used in collaborative learning (Kvale, 1996).

Moreover, according to Saunders, Lewis and Thornhill (2009), a case study involves the empirical investigation of a particular contemporary phenomenon within its real life context, using multiple sources of evidence. In this research, the opinions of the teachers were collected in the context of Lapland University of Applied Sciences and University of Lapland through face to face qualitative structured interviews.

Research strategy indicates a general orientation to the conduct of a scientific research. It is like a plan of action that gives direction to conduct the research systematically. Strategies can be either quantitative or qualitative (Bryman & Bell, 2007). This study investigates, how social media is being used by the students and educators in higher education for teaching and learning, with the purpose of examining the usage of social media in collaborative learning

situation towards the better ways of integration of social media in collaborative learning process, if needed. According to Creswell (2008), strategically a qualitative research is an educational research based on views of participants with a large scale of information, which are to be described and analyzed for a specific theme. The research can be conducted in subjective manner within a qualitative research strategy (Creswell, 2008). A qualitative research focuses on a broad analysis of an entire phenomenon or context by describing variation, explain relationship, describing individual relationships (Drew, 2008).

Thus, the principle strategy of this study was to conduct qualitative interviews with teachers and students to get their in-depth view on this specific topic, by attaining certain types of information from them. This study involved two case institutions as Lapland University of Applied Sciences and University of Lapland from where a certain types of information are collected, and it is the specific and in-depth nature of the required information from the participant to serve the purpose of the study, leads this research towards the qualitative strategy. A research of qualitative strategy includes data in narrative description form, expert information samples, narrative result summery and holistic description (Drew, 2008).

Research approach can be explained through either inductive or deductive approach. A qualitative study such as this is considered inductive in nature whereas quantitative study is deductive in approach (Saunders, Lewis & Thornhill, 2009). In an inductive approach the picture of the phenomenon that is being studied can also be described through the observation by the researcher (Lodico, Spaulding & Voegtle, 2010). Even though in an inductive approach, plans can be made for data collection before hand and after the data analysis it may possible to construct generalization, relationships and even theories (Gray, 2005), but here in this study data are collected based on specific theoretical framework of social media in collaborative learning to understand how some specific students and teachers are using social media for academic purpose rather than having any generalized idea. However, this study can also create least induction by producing new knowledge about the use of social media in collaborative learning situations by some specific students and teachers of the case institutions.

This study is also of the exploratory type of research in nature. According to Robson (1993), based on the purpose of the study, a research can be of exploratory, descriptive and explanatory in nature. According to Saunders, Lewis and Thornhill (2009), an exploratory study is a valuable mean to find out, what is happening, to seek new insights, to ask questions and to access phenomena in a new light. This study is of the exploratory type as the main purpose of the study is to examine the usage of social media in collaborative teaching and learning situations in higher education and to find out the better ways of integration of social media in collaborative learning process, if needed. Gray (2005), confirms that an exploratory study helps to understand a phenomenon “what is happening” and ask questions about it. He furthermore added that an exploratory study helps to decide whether a study is viable, practical and exploratory types of study can be conducted by literature searching, talking to an expert of the targeted field and conducting focus group interview. Thus accordingly, the main focus of this thesis is to explore the use of social media by the specific groups of students and teachers by conducting individual in-depth interviews. This study also applies a case study design. A case study is most often used in exploratory research (Saunders, Lewis & Thornhill, 2009). In this research a case study is implied to gather the view of teachers through the face to face interviews which is a qualitative study and explorative in nature (Malhotra, 2005).

### **3.2 Participants**

To serve the purpose of this study data were collected based on specific theoretical framework of social media in collaborative learning to understand, how students and teachers are using social media for academic purpose rather than having any generalized idea. From this view point, all the participants were chosen in a purposive way. According to Cohen, Manion, and Morrison (2011), purposive selection of samples are formally termed as non probability sampling where the chances of being selected is unknown.

Within this non probability sampling two case institutions - Lapland University of Applied Sciences and University of Lapland - were purposefully chosen under the higher education strata, following the stratified purposeful sampling (non probability sampling). According to Gray (2005), in a stratified purposeful sampling, cases are chosen purposefully within strata and also can be chosen based on the researches own judgments according to the research

purpose and needs. These two particular types of case institutions were purposefully chosen by the researchers to have a view, from both of the vocational settings and university settings of higher educational institutions, regarding the use of social media in collaborative learning. Cohen, Manion, and Morrison (2011) state that participants can also be chosen on the basis of convenience sampling where the nearest, available and accessible individuals are chosen to serve as respondents and continuing that process until the required sample size has been obtained.

The participants of this research were ten students from different faculties from both the Lapland University of Applied Sciences and University of Lapland and five teachers of different faculties from the same institutions. Ten students were interviewed following the convenience sampling method within the non probability sampling. To get a more in-depth view on the matter, in the same way following convenience sampling method, numbers of teachers from both of institutions were proposed to participate as respondents. A convenience sample strategy can also be selected for a case study or a series of case studies (Cohen, Manion, & Morrison, 2011). There were altogether five teachers who volunteered to be interviewed as in most of the cases the research topic itself was not convenient for the teachers to provide their views as they neither use social media nor collaborative learning (Appendix 3) in their teaching designs. These were early indications to the researchers that social media within collaborative learning had not been used much in University of Lapland and Lapland University of Applied Sciences. Also in some other cases teachers were just not willing to participate in the study from their own choice.

The main focus was to see how some specific students and teachers are using social media for academic purposes; this study depicts the view and experiences of these above mentioned specific participants rather than generalizing it for the whole two institutions. Cohen, Manion, and Morrison (2011) states that within the purposive sampling (non probability sampling), stratified purposeful sampling or convenience sampling each participants represents themselves rather than attempting to represent the whole undifferentiated population towards the generalization. In their interviews, it was also investigated that how the use of social media in teaching and learning could be done in a better way. Table 1 presents the participants of this study at a glance.

**Table 1:** Students and teachers as the participants of the research

<b>Participants</b>	<b>Department</b>	<b>Gender</b>	<b>Institution</b>
Student 1	Faculty of Law	Male	University of Lapland
Student 2	Faculty of Law	Female	University of Lapland
Student 3	Faculty of Social Sciences	Female	University of Lapland
Student 4	Faculty of Education	Male	University of Lapland
Student 5	Faculty of Education	Male	University of Lapland
Student 6	Nursing	Female	Lapland University of Applied Sciences
Student 7	Business Information Technology	Male	Lapland University of Applied Sciences
Student 8	Tourism	Male	Lapland University of Applied Sciences
Student 9	Tourism	Male	Lapland University of Applied Sciences
Student 10	International Business	Male	Lapland University of Applied Sciences
Teacher 1	Faculty of Education	Female	University of Lapland
Teacher 2	Faculty of Social Sciences	Female	University of Lapland
Teacher 3	Faculty of Art and Design	Male	University of Lapland
Teacher 4	Nursing	Male	Lapland University of Applied Sciences
Teacher 5	Tourism	Female	Lapland University of Applied Sciences

As it was mentioned earlier, the researchers were following the convenience sampling method (Cohen, Manion, & Morrison, 2011) to choose participants for this research. Along with personal social networks, students were also found on campus or outside campus and proposed face to face to take a part in the study. In response, some students who found the matter as interesting to them participated. Five students from different Faculties of the University of Lapland and an equal number of students from Lapland University of Applied Sciences were participated in this research. Two students from the Department of Law, two students from the Faculty of Education and one Tourism student participated in the study from the University of Lapland. In case of Lapland University of Applied Sciences, two students from Tourism and one student each from the Nursing, International Business and

Business Information Technology gave their opinion regarding the use of social media in their own studies.

To gain more insight about the situation, teachers from the different study units of both of the institutions were asked through a formal email (Appendix 3), using the institutional email list found on the university web sites. In response, all together five teachers from different study units of both of the institutions were agreed to voluntarily participate in the research according to their own convenience. One teacher from the Faculty of Education, Faculty of Social Science and Faculty of Art and Design of the University of Lapland participated in the study. In case of Lapland University of Applied Sciences one teacher from the Nursing and another teacher from the Tourism provided their opinion about using social media in collaborative learning. Thus this research depicts the some specific individual views of ten students and five teachers of different study units from both of the case institutions rather than generalizing it for the whole two cases.

### **3.3 Data Collection**

This study is based on a primary level of collected data. Primary data is usually gathered by a researcher for a specific study; moreover, it is usually gathered for the first time (Wrenn, Stevens & Loudon, 2002). In this research data were collected from teachers and students from Lapland University of Applied Sciences and University of Lapland. Data were collected through the face-to-face qualitative theme interviews using a specific form of questionnaire based on the theory and also along with a casual conversation within that. To discover exactly how higher education students and educators use social media sites in a collaborative learning, participants were asked to designate any usage related to teaching, instruction or guidance and learning, no matter whether it was traditional in class room education or online distance learning. Both teachers and students were interviewed by researchers during the spring of 2015.

The main themes of the interviews were structured based on the collaborative learning theory by Dillenbourg (1999), where it was investigated that how social media supports various

elements of the theory as situation, interaction, process and collaboration while their teaching and learning. It was also asked about how social media could be used in a better way to support collaborative learning. For students, interviews mostly took place either in a discussion room of the library of both of the case institutions or in any other silent place inside the case institutions as the interviews were also taped. Before the recoding of the interviews participants were asked for a permission for recording and researchers also promised that the collected data would only be used for academic purpose and their names and identities would be kept anonymous to readers for the sake of anonymity and privacy. All the teachers were interviewed in their own office and their opinion were also recorded accordingly. The duration of the interviews was thirty minutes to maximum sixty minutes. It was found that the information has been saturated as the participants were providing more or less similar information regarding their usage of social media within learning and collaboration. Cohen, Manion and Morrison (2011) explained that, number of participants can be shaped by the thickness of generated information and the saturation (repetition of similar information) of the information provided by the participants.

### **3.4 Data analysis**

The choice of data analysis method depends on the purpose and the legitimacy of the research and also on the kinds of data gathered (Cohen, Manion & Morrison, 2011). In this research content analysis was considered as a suitable analytical approach, because data were collected with a defined problem in hand along with a clear purpose of investigation (Gray, 2005). The focus was to gain a new insight about the phenomenon of using social media in higher educational teaching and learning. According to Gray (2005), in content analysis data are classified and broken down into smaller units to find out characteristics, elements and patterns to interpret, understand and explain the phenomenon towards gaining a new insight. Thus, in this study data were classified according to the different elements (situation, interaction, process and effect) of collaborative learning theory by Dillenbourg (1999) with the aim to analyze, how social media were used to support different elements of the theory and also how those could be used in a better way according to the students and teachers of the University of Lapland and the Lapland University of Applied Sciences. The results of the analysis are presented in following chapter.

## 4. Results

### 4.1 Social media in students' and teachers' personal lives

To understand how social media was used in collaborative learning, it was important to know first, if students and teachers were using social media in their personal life. This was important because even if anyone of the participants found to be not using social media in their teaching or learning, they were asked to at least comment from their personal usage experiences that how it could be useful if those were used in teaching and learning, specifically in collaborative learning. Thus the concentration was to identify that to what extent the participant's are familiar with social media in their personal life. From the interviews it was found that all the students are using social media in their personal life. Among the various preferences, Facebook and YouTube were the most commonly used applications. After these two social media applications, WhatsApp as a mobile application was found to be popular, as according to the students it is a fast and convenient way to communicate with others. Other than these some of the students are also using Twitter, WeChat, LinkedIn, Google Drive and Blogs to some extent.

In case of teachers as participants, it was found that all the teachers used social media at least to some extent and some of them claim themselves as the heavy users of social media in their personal and professional life. It was hard for them to draw a line between their personal usage and professional usage because they are mixed in a way that it is hard to separate.

*'I use social media every day and it's the first thing in the morning what I do. I use it in a way that sometimes I try to live social media free holidays.'* – Teacher 2.

Mostly used social media application among the teachers is Facebook, as every one of them is on it and checks it every day. They use Facebook as a means of contacting with the friends, colleagues and their family members. Along with Facebook they also use WhatsApp for text and voice messaging, YouTube for making and watching educational videos, Instagram for sharing photos and Google Drive for sharing documents. One teacher said that she makes educational YouTube videos a lot and also teaches her students how to do that. She is also moderating a social blog related to her teaching field. Another teacher is using Flickr for a

long time for showcasing his photography. Some of them use Twitter but to some others experienced it as too fast for them to follow.

As it was found that all participants use social media in their personal lives and everyone has some ideas about how different applications work, it would be interesting to see how they are using these social media in their teaching and learning. Thus the next point of investigation was how social media were used by teachers and students specifically in collaborative learning. While analyzing, researchers were aiming to find some patterns of the collected data and to interpret how those social media were supporting different elements of collaborative learning as creating situation, generating interaction, facilitating the process and measuring the effect if they used it in their collaborative teaching and learning (Dillenbourg, 1999). It was also a concern while analyzing the collected data to identify how social media could be used in a better way to support collaborative learning according the participants.

#### **4.2 Social media in collaborative learning**

The first research question of this study was how social media are used in collaborative learning by the teachers and students in higher education for educational purposes? To understand the phenomenon both the students and teachers of two higher educational case institutions of this study were interviewed. To investigate if students and teachers are involved in collaborative teaching and learning, students were asked how frequently they did group works or peer works during their studies. It was also asked if they used social media within those group works or in other learning situations or not? One student studying Nursing has confirmed that she had to do collaborative group works almost in all of the courses she attended. The reason behind this is that Nursing studies seeks the learning skills of different areas as, operational skills, social skills and cultural learning. Thus as one of their learning objective is that the students have to learn to deal with different people from different cultures. For this reason teachers require collaborative group works as this could be the means of a good practice of those skills throughout their studies. Similarly, in case of Tourism students, it was also found to be important to learn how to deal with different kinds of people thus working in a group is very common in their studies. Different kinds of group works in Tourism include tutorials, reading articles, making conclusion and presenting the result in class. Most of the assignments in Tourism studies were done through the collaborative group

works by the participants of Tourism studies from both of the higher educational institutions as Lapland University of Applied Sciences and University of Lapland.

It was also informed by the participants from both of the Nursing and Tourism studies that students use social media frequently to perform those group works. According to them, if they have to do an assignment together then to cooperate with each other they use social media like Facebook to create a group and talk to each other about the assignments. This way they really do not need to be close to each other. Even though teachers impose the group assignments to the students, using social media to perform the assignments depends on students' own choice. Basically teachers use their own learning management systems provided by their universities and use social media as a supportive means to that. However, teachers always encourage students to use tools like social media to perform assignments in a group.

In the same way, collaborative group work was found to be common means of learning by participants of Media Education taught under the Faculty of Education of the University of Lapland. Participants from that faculty also added that they usually do their courses through collaborative group work or peer work but the individual way of working was also not ignored and both techniques are considered as important for students. According to students they use social media a lot in their studies as it is a part of their learning skills which they have to achieve throughout their studies. In many cases teachers themselves designed the learning environments using various social media platforms as Google Drive, Blogs, Wikispaces, and Facebook. YouTube had been also a useful means of demonstration of the practical implementations of various theoretical matters in Media Education studies.

Other participants from both institutions were also united in their opinion that they had been using collaborative group works while performing their courses except the students of the Faculty of Law of the University of Lapland. Law students denied and said that they rarely did any collaborative group work as it is not needed in their studies. While doing most of the courses in Law they had to read a lot individually rather than in groups. They also think that collaborative group work can help in studying Law but not so much because of their subject matters. It was also found that in Law studies social media had not been used at all and the students think that because of the nature of the subject matter, use of social media would not make any difference. They only use social media like Facebook for some student to student informal communications. One Law student mentioned that some teachers of the same

department are really concerned about their privacy and information security, so they do not want to be on social media.

Students other than Law studies think social media is a fast and easy medium of communication and found it effective and helpful in doing group works while their studies. They also mentioned that even though the teachers usually do not impose the use of social media for a group work but they encourage and suggest various possibilities those could be helpful to perform the group assignments.

To find out, if teachers are involved in collaborative teaching and also if they use social media to facilitate that, they were asked, do they usually encourage collaborative group work within the courses taught by them? And, how do they consider using social media in a collaborative group work? In response, all of the five teachers who were interviewed confirmed that they use collaborative way of group work or peer work while teaching course. But some of them also could not deny the importance of individual assignments for a student. Thus along with the collaborative group works or peer works, sometimes individual assignments are also designed as a part of a course work as the students need it.

*'I think in my every course, there is at least one collaborative assignment so that the people work in small groups but I also use individual assignments like learning diaries, essays or reports as I try to make a balance between collaborative work and individual work. Because I think you need both.'* Teacher 1.

Some other times, whether a course can have a collaborative group work or not, depends on the nature of the course and also it was left open to the students to choose their way of doing the course work. However, according to the teachers some courses with large numbers of participants or significant amount of work load really seek the need for collaborative group works.

Use of social media also to facilitate the collaborative works found to be common among the teachers. Some teachers guide their students to use some particular social media applications which are convenient according to the design of a course, but in most cases the decision of choosing social media to do a collaborative work are left open to students. However, regardless the teachers suggestion of using any particular social media applications, students

use whatever applications as they find convenient and comfortable to work with. Sometimes students use Google Docs to write the assignment but they publish it on Wiki. It was informed in common by the teachers that students use Google Drive to collaboratively write something. If the students have a collaborative essay or assignment then they tend to write it using Google Docs. If they do a presentation, sometimes they use Google Drive for that. Blogs and Wikis are also used to present the work as well. A teacher from the Faculty of Education of the University of Lapland mentioned that it is very hard for her to remember a course, where she did not use either blogs or a Wiki for collaborative group works. Other than these, Facebook groups were also used in many cases. Some teachers suggest the students to create a secret group for a particular course work and to invite the teacher in the group to collaborate together. Twitter was also encouraged to be used by the students in terms of searching information as it is a good way to find latest information. According to a teacher from Lapland University of Applied Sciences,

*'The ones who have tried Twitter, they always liked it and you will find the latest information on tweeter if you know whom to follow.'* Teacher 4.

One teacher as participant found social media like blogs, Wikis or Facebook groups as the good ways of visualizing and writing down what is done and can be kept in track in creative learning process. It was also found to be useful for adult education where the students rarely participates on campus learning but have to do significant amount of collaborative works.

Other than these, another teacher from the social work of University of Lapland found to be taking one course using only social media. All of her lecture videos and course works were done using only social media. She basically used Facebook group for teaching and collaboration but she also provided internet lecture consists of lecture video, recorded voice, slides and text using Prezi. As a part of that course work, student writes blogs administered by the teacher herself. She also guides her students to make educational videos on YouTube and encourages using Instagram and Twitter.

Thus to sum up, three patterns were found in students' interviews and one pattern was found in teachers' interviews. These are presented in Table 2, which shows the findings in brief regarding the usage of social media in collaborative learning by the different patterns students and teachers.

**Table 2:** Findings in brief

Participants	Findings
Pattern 1	These students were doing collaborative group works in their studies but they were using social media within that from their own motivation. Students of this pattern found social media as supportive to the different elements of collaborative learning and effective for their group collaboration. They never collaborated with teachers on a social media platform.
Pattern 2	Students of this pattern were very much involved in collaborative learning in their studies. Usually teachers designed the collaborative learning environment for them using social media. They found different social media as supportive for different elements of collaborative learning. According to them, use of social media makes them efficient to achieve their learning goals.
Pattern 3	Students of this pattern neither used collaborative learning nor used social media in their studies. They think that collaborative learning is less suitable for their content of study. From their personal social media usage experience they added, use social media can facilitate some of their learning activities but it cannot make a big difference.
Teachers	All the teachers found to be using both collaborative learning and social media in their teaching approaches. They also expressed a positive impression towards using social media as they found it very helpful to achieve the learning goals by their students. To them the uses of social media for academic purposes are still in early stage and they are having challenges to implement it.

First pattern includes the students who had used social media in their collaborative ways of learning and even though the teacher's did not design their courses based on social media but they encouraged the students to use it (Pattern 1). As the use of social media was not the part of course design, students use that from their own motivation. Second pattern is of the students for whom the collaborative learning environment using social media had been designed by the teachers themselves (Pattern 2). And third patterns of students neither used collaborative ways of learning, nor used social media in their studies (Pattern 3). All the

teachers were found to be using collaborative learning as their teaching approach and also using social media to support that.

Thus in the next phase, students and teachers who used social media in collaborative learning were further investigated based on the elements of collaborative learning theory by Dillenbourg (1999) to understand how social media were supporting those elements. Collected data were classified according to the above mentioned patterns to analyze how social media were used by different patterns of students and teachers to support different elements of collaborative learning theory by Dillenbourg (1999). Students who did not use social media at all in their studies were asked to make comments from their personal usage experiences, about the prospective usefulness of social media in their own studies.

#### **4.2.1 Social media creating collaborative situation**

According to Dillenbourg, (1999) symmetry of action, knowledge and status can promote a collaborative learning situation and teachers can create a higher probability of interaction within that collaborative learning situation by imposing some initial conditions within a collaborating group. That is why both the students and teachers were asked about, if they feel same of status, skill and knowledge while interacting with each other within a group work using social media. And how social media were helping the teachers to impose different conditions to create a collaborative learning situation with symmetry of action, status and knowledge?

Students, who used social media from their personal interest (Pattern 1), never did any interaction with the teachers using social media. This happened because even though the teachers encouraged them to discuss on social media but they did not integrate the use of social media in their course design. That is why students of pattern 1, never did any interaction with teachers on social media as they use social media for group work from their own interest. But from their experience they think that if the teachers were also involved in a group work on social media then the interaction within a group could be different. Even though one student had found that teachers are very open minded and easy to access and they actually come the level of the student while academic interactions and make the situation comfortable for the students. But according to all other student participants, teacher and students are not considered to be of same status. Students think the teacher as a respected

person and behave formally with them. They also think that, if the teachers are involved in a group work using social media then the interaction with the teacher by the students would be different compared to the interaction among the students themselves. In that case interaction would not be realistic and natural as they are teacher and that would be always in the minds of the students. But they also admit that it could be at least better than the face to face interaction as the teachers are not directly looking at the students, and in that way the situation could be little bit more comfortable. Also they can connect themselves with the teachers anytime. But in reality, with the present condition students do not have any experience of interacting with the teachers in a group work on social media, usually they do face to face interaction with the teachers and the interaction is more formal than the interactions with other students as group members. In social media it is possible to get all members opinion but students also have more chance to avoid the discussion as no one is looking at them with the expectation of participation. If any student is not comfortable in face to face interaction, than online is the best place for them to express their views. According to these students interaction on social media is more flexible and comfortable compared to the face to face situation. They never had any feel of big difference among each other from the viewpoint of skills, knowledge or expertise.

Students of Pattern 2, who used social media for the course work together with the teachers, found that when a teacher is involved in a group work they might have to use formal language with the teachers. On the other hand, they were not strictly formal while interacting with other students within the same group. Students are not sure about the expectation of the teachers within a group work but if the teachers take it positively then it will help to create a warm relation between the teacher and students as well. Collaboration with the teachers on social media was found as flexible by the students and helps to decrease the distance between students and teachers. They think that there already a standard had been developed regarding the approaches of interaction in their cases. As a result both the teachers and students feel comfortable to collaborate in a common platform as social media. Students of this category have also added that teachers in their courses had been found to be friendly and open minded. One student expressed that,

*'I was not too much worried about who is a student or who is a teacher in the group. I just said whatever I felt as needed to be said. It was equal for me.'* - Student 5.

Students of pattern 3 who did not use either social media or collaborative learning in their studies commented based on their personal social media usage experience that it is really hard to control the privacy on social media like Facebook. Someone can misuse others personal information and pictures. So, most of their teachers do not want to be on Facebook or any other similar social media. These students think that there can be differences with the status, skills and actions among the students but it can also be a good chance to go near to others including teachers and share each other's skills and experiences.

Students of Pattern 1 were found to be agreed that teachers usually impose some conditions to encourage interactions and to create symmetry of status, action or knowledge among the group members. But all those criteria's had been imposed in face to face collaborative group work situations. This is because, social media had not been part of their course design and students did not have any interaction with the teachers on social media. But they think that same criteria's could also be imposed within a group interaction on social media. Use of social media could provide more flexible options for the teachers to be creative while setting up conditions to ensure interaction. Those conditions usually depend on the situation of the class room and nature of the courses. For example, if the students in a course work need to understand some sort of Finnish language then may be the teacher would encourage every groups to have at least one Finnish student who could help others regarding this. Sometimes teachers want encourages creating bigger groups so that the volume of discussion and arguments also becomes bigger. According to one participant,

*'I think group size really influence the amounts of interactions and the speed of doing assignments.'* - Student 6.

Some other times, teachers impose some criteria to select the group to increase the multicultural interaction. According to a Tourism student, there had been a project group work based on an event management and the teachers created a group of students with different expertise and interest.

The participants who used social media in their collaborative learning (Pattern 2) informed that they did not have much initial conditions set by the teacher while doing course work using social media. Students who have used social media in their learning (Pattern 2) and who did not use social media at all in their studies (Pattern 3), both think that social media can

support the teachers if they want to impose some initial criteria and agree that those criteria can increase the possibilities of interaction along with creating symmetry of status, action and knowledge.

Teachers were asked about the initial conditions imposed by them to create a collaborative situation with the symmetry of action status and knowledge and to work together with a common goal. In response it was found that, to really have interaction and comments, it should be included as the assessment criteria. In that case, students need to know that, this is one thing the teacher is assessing and then they can think that if they comment and help other students, they can get credits for it or it has an impact on the final grade. To some teachers predetermination of group size and variety can produce greater interaction. Discussions within a large group are usually more compared to the smaller groups and it is the teacher's responsibility to keep the discussions as effective and relevant the group purpose rather than being social and personal. Group members with different knowledge and experience can complement each other and helps to generate interaction as well. One teacher deals with adult education expressed her experience as that young people as a part of a group of some other adult participant can bring quite different skills like social media skills and different view to the task. However, in many other cases, teachers disagreed to force the students by setting interaction criteria for a group work. They leave it to the students themselves to create a collaboration using social media of their own choice and may be teachers can only suggest about the tools and possibilities that students may use to find their own way of working. Thus setting the interaction criteria for using social media is bit open in general and the group can decide what they really do with the social media. Sometimes teachers step forward just to steer up the discussion if there is really nothing happening.

In a collaborative situation, the collaborative agents should be working together to achieve a common goal (Dillenbourg, 1999). Thus all the students and teachers were asked that what advantages social media provides for working together with a common goal? All the teachers found the use of social media are useful to maintain a common goal within a group work as they can see the whole view of the problem in hand from a common platform towards the solution. Even though some teachers are not sure that whether social media are really creating symmetry of status, knowledge and action among the group members or not, because it may need some research to understand that from student's point of view. But some other teachers think that, students not necessarily have to have a same skill on social media. They have

found that students usually do not have the equal skill while began to use social media in a group work but they learn from each other very soon to deal with it. Also more and more students are now-a-days using social media before they come to the course, so they usually have already some sort of experience of using social media which help them to dig more into that for educational purposes. Teachers have found that whenever the students were asked to use social media, they were content and they liked to do that. It is also a good chance for the students who are bit shy for taking in class participation in a collaborative learning, as they may behave differently online by commenting and participating in a discussion. But it was also ensured by the teachers that student to student interactions are more informal than the student with teacher interactions on social media. Even though the teachers try to create an atmosphere where they would be the symmetrical part of the group but it did not work properly. The reason of these could be classical cultural norms and values of this society which may take time to overcome. However, the teachers found the use of social media in teaching proved to be a good way and it should be kept continuing. It could be one of the goal in a course that members teach each other about the techniques of how social media work.

In case of student participants it was found that they could not be specific about the advantages of social media for creating a group goal and working together. But all of them commonly believes that social media can be a good platform to work together to achieve a common goal. One student opined that social media helps to do the assignments faster. They do not need to meet each other every time and whenever someone is confused about group work they can ask it on social media any time. Members can discuss simultaneously in group about the group works towards achieving the group goal.

#### **4.2.2 Social media in interaction**

A collaborative interaction indicates the degree of interaction by the members within a group and also their synchronous involvement towards a negotiable learning situation (Dillenbourg, 1999). Synchronous participation by the group members has the possibility of a greater degree of interaction compared to the asynchronous participation. However, it was already mentioned by the authors that a collaborative learning can be asynchronous as well (Dillenbourg, 1999). As the degree of interactivity in collaboration is determined by the extent to which the interactions influence the agents to learn something, students were asked if social media are more convenient tools to generate degree of interaction towards learning.

Students who used social media in their collaborative group works (Pattern 1 and Pattern 2), think that social media help a lot to learn more within a short time and also it can be a good archive of accumulated information on a specific matter. If the students find any information or idea related to the group goal they share it on social media group discussions for instance Facebook group or Google Drive. When others also do the same, the analysis, comparison and decision making for the students become easier and interactions become higher. Social media are good place to discuss about the assignments. To combine the whole work together students need to know other members contributions which could be observed and traced using social media. Moreover, in case of face to face collaboration some students can be shy to share their knowledge, which can be fluent in case of collaboration on social media. On social media students at least learn from others about how to use social media effectively in group works for academic purposes. Students found social media as the convenient means of learning from each other. They also learn basic communication skills along with the subject matters. It was also found to be good for learning other people and their cultures. Regarding learning different cultures on social media one student opined that,

*'Interaction on social media while doing my course works, made me competent at least to some extent to interact with the people of different cultures.'* - Student 5.

These platforms pose the entertaining aspects also which motivated some students to be frequently engaged there. Some students may not be motivated enough to check their institutional learning environment every day but in this age of social media they frequently go there to follow the activities around. One business student thinks that face to face communication can generate more interactions than on social media. Whereas another student from Tourism argues that when they interact face to face and discuss, it is really hard to remember, track and follow all the views later. But if it is done on social media then they can review all the opinions any time.

When the same groups of students were asked that, the social media make them more involved in a group work or not? It was found that, all the students consider using social media in a group work as more convenient. But it does not guarantee the better involvement by the members to do something together. It can happen or may not be also. It was agreed by these students that face to face group work is more transparent. Some students may feel

comfortable in talking rather than writing and vice versa. The students who do not have a good writing skill will feel comfortable in face to face interaction and the synchronicity would be higher. But those who are opposite will feel more comfortable in writing on social media rather than face to face situation. It depends on the nature or skills of the students. Some person may not be active in group interactions while communicating face to face but when they are at home and got some new idea to share, they can write whenever they want. Teacher's presence in a group work using social media can make the participants more involved to work together and to learn from each other. One student advocates for the social media in this matter as,

*'I have found that response rate has been faster and higher on Social media than traditional face to face group works. Thus it can be that the students are more involved in a group work on social media.'* – Student 6.

Another student argues that there can be a case where some students are really active in the class but not active in the social media. In this case the involvement can be less by those students. Thus for some people it can be more convenient to be involved in a group work using social media but for some others with different motivation it may not happen. If all the group members are active in a group on social media, then the rate of interaction will increase but in this case also, there can be someone who just follow the group activity but not participate actively. But students think that even if someone just follows the group activity, he or she will learn something.

Students who did not use social media in their studies (Pattern 3) are found to be not sure that, it can generate more interaction or not. But according to them it can be a good base to share information with each other. And they also think that the degree of interaction, involvement depends on the persons own attitude towards the use of social media. If someone like it then they will interact more on social media but if they do not like the medium then there may be possibility of least amount of interaction. Also people have to be very careful about their comments so that it does not create any conflict.

*'It's not a good place for argument and negotiation.'* – Student 1.

But all most all the students who have used social media in their learning, found it as a good place to express their own opinion in a negotiable way. According to them negotiation on social media depends on how the users are using it. If the persons interacting in a group are open-minded and flexible then there can be a good atmosphere of negotiation towards learning. This way it can be a good platform to gather knowledge. Though it is a good place to express own opinion but sometimes it can also create confusions as the emotions and expressions of the participants are missing. There is the possibility of misunderstanding on social media collaboration compared to the face to face collaboration. However, they think that in social media people have the chance to negotiate, and form all of the arguments the most perfect decision can be taken. Social media are found to be the good platform for commenting on each other's views. It gives the people enough time and space to think before expressing their ideas in an organized way.

Teachers were also asked, if they think that the use of social media in a group work generates the degree of interaction and crates a negotiable situation to do something together. It was found as some teachers think that, in general use of social media in a collaborative work automatically generates some sort of interaction among the collaborating members. Social media are also good platforms to negotiate among each other with more involvements by the members. As the students were being able to work on social media all at the same time, they had been applying their own ideas whenever it is generated. They were also able to share their ideas all the time for feedback and comments. This way, those are certainly good platforms to generate degree of interaction and for negotiation. But in terms of interaction with the people outside the university, to communicate the outcomes of a group work, is something could not be achieved using social media yet. According to the teachers, the ultimate goal should be to get interaction between the course students inside the university and people outside the university so that they can comment on the work done by students at the university. To do so, it may need a lot more work on this and also the approaches of teaching need to be modified. Some other teachers think that even though the social media are good for generating interaction, but students need guidance for the effective interaction, as they do not get it on their own. Students are may be familiar with using social media in their personal lives. But when it comes to using for academic purposes, it takes lots of facilitation of the discussion as it is not something happens naturally to the students. For the teacher it also appears to be convenient to track at least who are active in group work using social media and who are not. For example, one of the teacher mentioned that whenever he post something related to the

course work using Facebook group, he can at least track that who has seen the information. This way it confirms that at least students are informed what the teacher is talking about. Thus social media can help group collaboration to work but it would need more guidance from the teachers to make it happen effectively.

#### **4.2.3 Social media facilitating the process**

Some mechanisms as induction, cognitive load, self explanation, and conflict may occur based on the individual cognitions in a collaborative learning situation (Dillenbourg, 1999). Induction is the tendency of presenting the abstract form of the problem by the members in a collaborative group. There can be a division of labor to distribute the work load among the members. And there remains a tendency by the members to explain themselves to each other in a collaborative group work. Intra-individual or inter-individual conflicts are also the common phenomenon in group collaboration. Both the students and teachers were asked about the role of social media in case of induction, self explanation and distribution of cognitive load. They were also asked about the impact of conflict on their social media based collaborative learning. Students who do not use either collaborative learning or social media in their studies were asked if they think that social media can facilitate those mechanisms or not.

All the students were agreed that social media can facilitate the group problem solving. Working on social media for group work makes it faster and efficient as every member comes with their own abstract ideas to solve the problem in hand. Social media make it easy to communicate with each other and share the different parts of the solution. Members do their own parts and share it for others to browse through. Thus it helps for solving and combining a group problem and to cooperate with each other. Every student has their own style of writing and doing the things, so it is better to share those on social media for the discussion and improvements before they finally combine and present it. Students think that without social media the group work would be very difficult because in that case every time they had to meet face to face. One student mentioned about the Google Drive as found to be very convenient in group problem solving. With Google Drive other group members can easily check, comment and guide a group work together towards the solution. They found the face to face group collaboration as inconvenient because members cannot view the whole picture of the work together at a time and it is a time consuming process.

*'For problem solving social media are always convenient because I can get the advice, suggestions and guidance from others anytime. It is also easy on social media to bring others parts of solutions together to combine it finally through discussions.'* - Student 7.

According to the students, social media save time and convenient to inform each other about the group work and group member's individual responsibilities towards achieving the common group goal. Distribution work load through social media is innovative and the medium itself can actually minimize the work load by saving time and efforts. Students can communicate with others more efficiently through social media. As the activities on social media platform are transparent to all the members, it is easy to shift the work load among each other. But some of them who used social media in their learning also argued that in face to face collaboration, students are more involved as they can see each other and it is easy to shift the work load among the members in a synchronous way. They also think that use of social media in collaborative group work provides them the opportunity to express their own opinion in a group. They can share their personal opinion on a social media platform comfortably. Sometimes it can create some conflict in a group but still it is better than doing many other things. One student opined that she was always fearless in providing her own opinion in a group work using social media because it gave her ample time to think about her ideas and how to approach those in a diverse group. She also added that it is not that she never faced any conflict or her ideas were not rejected but in those cases she at least had the explanations from others that why her thinking does not work. She could also get the suggestions about how should she really think. Thus the students found social media platform in their learning with the varieties of opinion and ideas which were always appreciated and gave them at least a clue to start thinking about. But there can be conflicts also. So the members in a collaborative group have to express their self explanation in a proper manner. It was found that after a short while in a group work, when members starts to know each other, then the situation becomes easy for them to open themselves gradually.

Students who did not use social media in their studies think that face to face collaboration may be better for the distribution of work load among the members. They said that they do not have any idea about how social media can be helpful in sharing the workloads among the members. They also think that if they need anything more in this matter then they can use university learning environment which is good for them work with as it is more official than

using social media. According to these students, in case of self explanation the main problem is that misinterpretation can happen while communicating through social media rather than face to face and it depends on the people involved in a collaborative group work. However they also admitted that social media may be can make the communication faster.

According to the teachers' opinion, social media certainly help in creating division of labor and distribution of work load in group collaboration. Collaborative group work can be effective in a course, where the course design itself seeks to have a significant amount of work load, and then within a group the students can share the work among each other towards the efficiency. Students can use social media for collaboration and distribution of responsibilities among each others to achieve a common goal. For example, if the students are using Google Drive and creating new text about something, anyone in the group can go and see their writing anytime. So it could be easier than other options like E-mails. They can also meet and discuss virtually any time using social media. It is also should be convenient for the teachers to supervise the proceedings simultaneously. A collaborative problem solving is the matter of being able to create something together which can be supported by the social media. For example, sometimes teachers use social media as padlet for initial brain storming, gathering ideas and grouping them or some mind map tools and get the links for further materials. However, some other teachers think that social media singularly may not be significant for problem solving as they use it as a part of their problem solving techniques. To them it also depends on the nature of the problem in hand and learning cycles. For some topics it is quite natural to do the discussions on the social media and use the similar resources but on the other hand some topic could be much different and convenient to use more traditional ways.

But teachers think that while using social media students are learning from each other for sure and lots of learning can happen outside the class because of using social media. It can be sometimes more, sometimes less depending on group dynamics and collaborations. Social media allow students to work twenty four hours in a course using that and students can participate in their free hours as well. If anyone missed a lecture then he or she can ask questions about the happenings, tasks and homework on social media groups. In that sense social media create more learning possibilities and at least students can know what was going on. Teachers have found that students ask questions not only related to their class but also about other issues around them, so in that way it is really helpful. Students can certainly learn

from each other on social media if they are motivated to read other peoples work. If in a course it is not obligatory to read other peoples text, then it depends on the self motivation of the students. If the student is motivated then it is a very nice opportunity to read and learn from others writing. It is good for the people outside the university as well if the works are somehow shared. So, it is all about sharing the information rather than keeping it restricted only to the teacher. According to the teachers, in a way it is in line with the current thinking focused on social media because social media is about sharing. Thus, in educational context it should be in line with the sharing and commenting each other's work.

#### **4.2.4 Social media in measuring effect**

According to Dillenbourg (1999), effects of collaborative learning generally are measured through some individual pretest or post test and the teacher's responsibility is to being a facilitator by providing hints and guidance or monitoring the process rather than being a tutor. However Perkins (1993) argues that effect of collaborative learning should be measured based on group performances. To understand how the students were evaluated by the teachers while working on social media, they were asked if they were evaluated based on their group performances or not? In this case if the performances of the students were evaluated based on their individual performances, than the development of their generic skills for collaboration in the learning process was taken into consideration or not? And how the uses of social media were supporting the evaluation process?

The performance of the students who used social media in their collaborative learning, had been evaluated based on over all group performances but their performances on social media were not considered. This was because for most of the students of both of the institutions, using social media were not included in their course design. So it had no influence while grading by the teachers. Usually in a course with collaborative face to face group work, the performances of the students were evaluated individually by the teachers. In that case, the development of the generic skills of collaboration was also considered. Sometimes students had been evaluating the cross group performances by themselves as well, which ultimately effected the final grading. Teachers were dependent on the institutional electronic learning environment for evaluating and grading the performances by the students. But these students also feel that social media can make it easy for the teachers to evaluate both individual performance and group performance. In this way social media can be even used as the

substitute of electronic learning environment rather than keeping it only as the complementary to that.

In case of the students who were working on social media platform under the teachers supervision, usually were graded based on their group performance. If the students were doing any separate individual assignment besides their collaborative virtual group works, then their individual performances were taken into consideration while giving the final grade. Law faculty students of the University of Lapland were evaluated based on their individual performances and there were no scope to evaluate the development of their generic skills of collaboration, as they did not use any collaborative work at all.

Teachers think that social media are useful both for measuring the individual performances and group performances. But tracking a work on social media that is not ready is hard because not all the students want to publish the work that is not ready for others to see. Tracking everyone's performance is time consuming also but possible on social media. It takes a lot of time to go through whole the work to evaluate how they have been active or have they been even active. Even though it can be tracked but due to being so time consuming some teachers do not do try to measure individual performances on social media constantly. They do may be a little bit tracking of how active people are in a group work. Sometimes students are also using different applications and web services in a single group work that they are sort of scattered around and difficult to track and hard to create a big picture of that. Thus in those cases teachers think that the whole group work is easier to track and follow and a good way for them to control whether a particular project is proceeding well or not. For some other teachers measuring performances on social media whether from individual perspective or overall group perspective depends on the task. From this point of view some teachers sometimes also evaluate individual performances and in those cases they also impose peer evaluation criteria to facilitate the evaluation process. For example one teacher explained that, Facebook group collaborations are bit tricky and difficult to track, who wrote what and who did not. So it is better for the students to evaluate themselves based on their own activity. Teachers can set certain criteria about how the student should evaluate their own activities they have done. Sometimes peer evaluations are also framed within a group evaluation. In those cases, because of the peer evaluation the students in the same group might get different grades. Even though a teacher doubts that if the students are evaluated from the individual point of view then generic skills developed in a student because of group work are difficult to

measure, another of the teachers also considers evaluating the generic skills of students developed as the consequences of group collaboration and makes it as part of the learning goal. But both of them are agreed that, whatever the evaluation criteria are those should be very transparent and easy to measure. According to the teachers blogs and Wikis are good for exchanging ideas of something that is not quite ready yet but may need a different pedagogical approach so that all the students are ready to publish something that is not polished or ready and receive comments for that. Google drive can be useful to track the previous versions and who has been working on it. Thus to some extent the participation can be tracked using these social media tools because different versions and who has been working at which point can be seen on those.

It was found from the interviews that the roles of teachers are more or less same for all the participants but it varies while relating themselves to the students' group collaborations on social media. Among the common roles played by the teacher are designing the collaborative assignments, providing guidelines, presenting the assignments for the students, designing or the learning environment, suggesting about the possible ways or means of group work, acting as a facilitator while group work and at the end they are grading the students.

Most of the teachers usually provide some kind of lessons to help the students to perform the assignments and after that they remain a bit on the side or stay in the background to observe how the process is going on and helps the students if they are asked for. They often maintain some check points to go and check student's blogs for example, to see how they are doing and may write a comment in the post suggesting any improvements. They are usually not directly involved in group collaboration on social media as they think that the platform is for the students and their own sharing of feelings and emotions. There can be one member from the group who can approach to the teacher about the discussion seeking the further guidance. One of the teachers among them believes from his experience that if the collaboration is interrupted too much with guidance then the performance level of the student's goes down. But there are also few other teachers who prefer to be involved in the group collaborations using social media and tries to push themselves to same level of the students as a group member. In those cases teachers give the students enough space and freedom to choose their own ways and just facilitate the process by suggesting and motivating the members. From this view point a teacher express that students communicate with each other in this context but

they becomes formal to a teacher. Even though the teachers want to be one of them but it does not work in that way.

Students were also asked about the usual role of the teachers while doing a group work either using or not using social media. Students of Pattern 1, who were using social media but teachers were not involved, informed that the role of the teachers were usually as a guide. Initially they assign the task and talks about the requirements. If it is the tutorial lesson usually teachers are just observing and following. They listen to the students and some times change the flow of the discussion if needed. At the end they make comment on the progress of the group and asses the performances. Thus at the first to last her role is as a guide, a referent and a judge. When they were doing the group works on social media, teachers were usually not there and they found it hard to relate a teacher to the group work using social media.

Students of pattern 2, who used the social media under the guidance of the teachers, found the teachers as a tutor who provides the lesson and course related information. Then they arrange the learning environment using social media. At the end, they do evaluation of the performances and grade. In the meanwhile on social media their roles vary according to the platforms used. If it is a Facebook group then the teacher could be one of the group members and monitor the discussion and steer up if needed. If it is Google Drive then they starts the discussion and tunes in different points. For Wikispaces teachers monitor the work and comments for further developments.

#### **4.3 Barriers and challenges of using social media in collaborative learning**

To find out the answer of the second research question as how could social media be used in collaborative learning process in higher education, according to students and teachers? Both the students and teachers were asked about the barriers and challenges they have faced while using social media in collaborative learning. And also, if they have any idea of what could be the possible solutions of those, towards the use of social media in collaborative learning in a better way. Those students who had not even any experience of using social media in the formal learning were also asked if they can see any opportunities in social media while using those in their personal life, which could benefit and improve their learning process.

Students who have experienced the present way of using social media in their collaborative learning think that it is still possible to use it in more productive way. The first point they have made is that there should be a better situation where students and teachers both should feel of the same level and collaborate in a smooth atmosphere. They think that feeling of same status depends on individual's frames of mind, their cultural norms and values. Students and educators who usually work using social media, should have to be open minded to create a multicultural atmosphere where people have to respect each other's and keep the platform comfortable for all the members.

In Finnish culture, teachers are considered of maintaining formal attitude towards students (Teacher 4). In both of the institutions some teachers use social media a lot and some others not much or not at all. Those who are not using should use more, as these really help in setting common goal and the informal atmosphere within makes brings the students and teacher closer to each other and make them open towards learning. Social media help to communicate with the teachers and student through one shared platform. They even do not need to use university email or learning environments separately if they are working on social media. It is possible to track every single progress from anywhere and anytime. They do not need to be at home or university to login to the institutional electronic learning environment if the social media are used to do the same things as done on those. However it was also admitted by the students that, some people who are not familiar with the technology can make problem in this case. If the user is not much comfortable in using social media then whatever is done it may not increase the involvement by the users.

Present use of social media could not yet be able to make it a common platform for education. Wiki, Google Drive, Google+ are good for educational purpose and few teachers use those now a days. In case of Facebook or Twitter, many teachers are not willing to use because they do not think these applications as appropriate for the education. Even though the Facebook is not designed for the educational purposes but it could be really helpful for learning collaboration and communication. Those who are concerned about their privacy, temporary Facebook group pages of collaborating members can also be created to facilitate the learning together. This way students and teachers can be always connected to each other. Still social media are used for fun but university should do something to integrate social media so that it can be used for educational purpose. Though it can increase the operating cost of the

university and increase the work load of the teacher but that will help to improve the education system.

According to the students, discussion with an open mind is the key to do self explanation on a social media platform. Social media platforms themselves are such transparent that the fair distributions of work load are ensured automatically because everyone can see who is doing what.

Students were found to be not having much idea about which social media could be good for tracking student's performance by the teachers. Most of them said they do not have any idea. Some of them could see some usefulness regarding measuring performances on social media. They think that Facebook could be a good means of tracking group performances if the teachers are involved there as a group member. Participants who used actively social media in their studies found that Wiki, Google Drive, Google+ are good for teachers to track students performances, and students also can track each other's work on those.

Students from the Faculty of Law think that institutional electronic learning environments are easy in measuring the performances of the students. Blogs or Wikis were never used in the Law studies and the students have never heard about the use of blogs or Wikis in learning law.

*'I don't have any idea about how it could be used in a successful way in Law studies.'*-  
*Student 1.*

Law students think that in general lectures some videos from YouTube those are related to their subject can be used but when it comes to use of Facebook or others social media for interaction then the privacy issues arise in case of them. All of the students or teachers from Faculty of Law are not on Facebook or WhatsApp, which is also a considerable factor in this case. One law student expressed that he does not have the knowledge of the publicity rules of the university but he feels that if there is any good lecture then it is a better idea to record the lecture and put it on YouTube. These way students from other universities will also able to watch them. In the same time he also doubts that, law teachers may be willing to do this for their own students but will not like to make it public. As over all the students think that many

teachers do not know how to use different social media and some teachers are habituated with their own teaching styles and they have their own way to teach.

On the other hand, all the teachers were found to be agreed that they were having more challenges than barriers while using social media in their teaching approaches. It was found in common for both of the case institutions that, none of them had any clear policy and guidelines in their ICT framework for teachers regarding the use of social media in teaching. Some of the teachers are concerned about this because it may be an information security risk for the institution itself. But they also think that as the social media are used only as the supportive tools besides the learning environments which are officially provided by the institutions, thus the risk should be of minimum. But even though as according to the teachers the use of these social media applications are increasing day by day in teaching and learning, the institutions should be transparent of what they think about it. One teacher from social work department of the University of Lapland expressed that initially she was facing challenge to implement her teaching design based on social media. She has been one of the first who is teaching using social media in social work and it was hard for her to convince her superiors regarding this. Her superiors did not understand what the teacher wants to do and was in doubt that the course may not be theoretical enough. Thus the university culture has to change and open itself towards the acceptance of new technology like social media and the teachers think that it has started happening nowadays.

However, besides the usefulness of social media, a significant drawback is that teachers cannot be certain about how long the data would be stored there to make sure the data is available all through the process and even after the course. Before using any social media, students should always be asked for their consent for whether they want to do it or not. It should not be obligatory for anyone to publish their work on social media.

People outside the university have to be involved by making comments and talking to the students because that should be the ultimate purpose of social media. The real spirit of the social media lies in publishing and starting discussion. If the students do not get comments from outsider then it is not in line with the spirit of social media.

There are quite a many different social media services and applications with different aspects and facilities and it is a challenge to find a balanced combination as there is not a single one

which has it all. If there is any service that has it all as storing, sharing, discussion, chat could be helpful. If the university come up with some kind of new tools for communication and file sharing including social aspects, could be a solution.

As not too many uses social media, sometimes it is really challenging for the teachers to implement it for teaching purposes. But it is also inspiring to have such social media tools around which can be really beneficial for the educators. To them, it is interesting to think how these tools could support learning and they are still experimenting and going through the trial and error process for a better implementation of social media in collaborative learning.

## **5. Discussion and conclusion**

### **5.1 Summary of the results**

This study aimed to investigate the use of social media in higher educational teaching and learning by the students and teachers of University of Lapland and Lapland University of Applied Sciences in Rovaniemi, Finland. The main focus of the study was to explore specifically how students and teachers of both of these two institutions are using social media in collaborative learning. Also it was relevant in this study to find out, how social media could be used in a better way in their teaching and learning. To understand the phenomenon, all together ten students and five teachers of different faculties from both of the universities were interviewed respectively. Individual face to face qualitative theme interviews were conducted to collect the data for this study. To analyze the collected data a qualitative content analysis was implied. In case of teachers, it was noticeable that many of them, who were requested to participate in study, denied it by saying that they neither use collaborative learning nor use social media in their teaching approaches. Thus it gave the researchers an initial idea even before collecting the data that social media are not used by many in these two institutions. Even though all the teachers were encouraged by the researchers to participate in the study but it was obvious that only among those teachers who use both the collaborative learning and social media in their teaching approaches were motivated to participate. While analyzing the data these assumption was also supported by the findings.

All the participated teachers were found to be using social media in their collaborative way of teaching. In case of students, there were three patterns found in their learning experiences. Pattern 1, consists of the students who used social media in their collaborative learning from personal motivation. Pattern 2, includes the students for whom teachers themselves were designing the collaborative learning environment based on social media. And the students of Pattern 3 neither experienced collaborative learning nor social media in their learning process. The portion of Pattern 2 students, in which students and teachers were using social media together in their collaborative learning, was insignificant compared to the whole amounts of participants. To be specific, students from only one department as Faculty of Education of the University of Lapland were found to be using social media in collaboration with their teachers. Students from all other departments informed that either they were using social media not as a part of their course design or not using at all. Students from Faculty of

Education were using it as a part of their course design because they see it as a part of their learning skills which they have to achieve all through their studies. However, for other students who used social media in their learning were informally encouraged by their teachers. Students from Faculty of Law of the University of Lapland were found to be neither using social media nor collaborative learning in their studies. These students think that they do not need collaborative learning because their study contents are not suitable for that. But they could not explain how study contents could not be suitable to the collaborative learning. The other reason behind not using social media in their studies is that, they do not think the medium is free of information security risk. It seems to be both the teachers and students of the Faculty of Law are very much concerned about their privacy and public acts. It could be interesting to have a view of the teachers from Faculty of Law. But none of them did response to the authors' invitation to participate in this research.

However, all the participated teachers integrate the social media in their teaching design and found these applications as supportive for their collaborative ways of teaching. According to the earlier studies, Martín-Gutiérrez, Fabiani, Benesova, Meneses and Mora (2014), examined the compatibility of technology with collaborative learning and found that varieties of educational tools and applications based on computer technology are developing new teaching methodologies. Collaborative learning in a support with computer technology can be used for deploying educational tools and applications like social media in higher education. Liao, Huang, Chen and Huang (2015), confirmed that Jigsaw-based collaborative learning approach as very much compatible with the social networking websites, as the platform itself can increase the positive attitude to the system and also increase their learning motivation to achieve their learning objectives in a playful way.

According to the teachers, different social media applications have various aspects to support different elements of collaborative learning in Dillenbourg's (1999) theory as well. Creating a collaborative situation is convenient on a social media. They have varieties of options in that case to set some criteria to encourage symmetry of action, status, skills and knowledge towards working together to achieve a common goal. To create a collaborative situation, social networking sites such as Facebook or Google+ are considered as interactive and popular as they offer an autonomous platform for the students to exchange ideas and develop a shared knowledge (Liao, Huang, Chen & Huang, 2015). When a student interacts in a network with shared goal on a specific topic, it can build interpersonal network and support

and also students can have the feeling of belongingness and social identity (Francesc & Neus, 2011). But some teachers also think that sometimes students do not take them as of same status in a group work. From this view point, students who were involved in a group work along with the teachers did not find any gap among them on a social media platform. Other students with whom teachers were not involved in a collaborative group work think that in case of teachers direct involvement on a social media, they would not feel of the same status and the interactions could be more formal.

According to Churchill (2009), Blogs provide a platform for working together by creating a situation in which students feel themselves to be important part of the classroom community and think that their needs or opinions are recognized and addressed. Teachers and students can use blogs as a central location where the information can be stored and managed (Churchill, 2009). However, even though students did not mention any specific social media like blogs but all the students experienced that working on social media is convenient to work together with a common goal. Moreover, according to the teachers', using social media are convenient to create a collaborative situation where the generation of interactions are possible to ensure. Social media can facilitate the process of learning. Moreover measuring performances of the students on social media are found to easier by the teachers' in many cases.

In case of generating interactions, all the teachers and students think that some social media are technologically convenient to generate more interactions and self regulations. Blogs provide students a high level of autonomy and scope of greater interaction with peers (Williams & Jacobs, 2004). Continuous monitoring and analyzing of students interaction graphs and trends on blogs motivate the students to contribute and collaborate more. This way blogs are convenient for better collaboration and help students to self regulate. (Fessakis, Dimitracopoulou & Palaiodimos, 2013.) According to both the students and teachers, using social media in a group work can be a second chance of synchronous or asynchronous involvement for those who are not comfortable in a face to face situation. But they also doubt that social media cannot ensure more interaction or more involvement by the members, as it may not happen in many cases either. In an earlier research it was found that social networking sites as Facebook with their different synchronous and asynchronous channels and wide ranging interactivity can foster active participation by the peers. Using Facebook, diverse virtual students groups with shared goals can be organized towards the construction of

a shared meaning within a collaborative learning. (Alotaibi & Bull, 2012; Francesc & Neus, 2011.) Participants of this research think that social media in general can facilitate to achieve a shared goal by working together. Which was also supported by another study where it was mentioned that by using Wikis students can create and edit a document on a single central Wiki page, which is easy to co-edit and automatically published online for a common sharing regardless of space and time (Duffy & Burns, 2006; Larusson & Alterman, 2009). The participants who used social media in their teaching and learning also experienced a negotiable situation where other members did not try to impose their own opinion rather they negotiated with others in the group. The tendency was to defend and establish their thinking towards a common group solution.

It was suggested by Francesc and Neus, (2011) that with aspects as text, voice, music, graphics, photos, animations and videos social networking sites can promote users thinking and can facilitate the problem solving or critical thinking within collaboration. Social networking sites like Facebook also can help in enhancement of critical thinking of the collaborators along with the shared knowledge building (Alotaibi & Bull, 2012). From the participants' views, it was found that collaboration on social media like Facebook and blogs had been helpful in problem solving and distribution of work load for all the participated teachers and students who were using social media in their teaching and learning. Social media platforms helped them to see the whole view of problem in hand at time and plan the solutions by sharing responsibilities among each other. As students can be connected with the problem solving process regardless the time and space using social media, it is easy to be aware of own responsibilities and keep a track of the group work progress. Students some times did face some conflicts while working in a group on social media. They think that these were because of the cultural and interpersonal differences among members. But the impact of those conflicts were insignificant, rather they enjoyed a good atmosphere of self explanation and learning from each other's on social media. This view of the participants was also supported by the research findings of Williams and Jacobs (2004). In their research work Williams and Jacobs (2004), found that posting and comments aspects of blogs can generate new ideas and scope of evaluation, where personalized responses and criticisms deliver a common understanding of a collective knowledge towards forming a forum of learning.

Effect of collaborative learning should be measured based on group performance and Wikis can be a very useful tool in this case. Along with Wikis, Google+, and Facebook discussion

groups, blogs are also useful for tracking, streaming and monitoring group works. (Duffy & Burns, 2006; Perkins, 1993.) Teachers found different social media as the effective tools for measuring performances. To them, it is possible to measure both the individual performances and group performances using different social media tools. But they usually track the group activities because tracking each and every one social media is time consuming. Even though they evaluate the group performances, but some teachers also ask the students to evaluate each other's performances in a group work to measure individual performances. If the individual performance is measured, the generic skills developed in an individual for collaboration are also considered. Students were found to be not sure about how the social media can help in measuring performances. But they think that on social media like Facebook, Wikispaces or Google Drive teachers can see who is doing what, so they can include the volume of interaction in their evaluation criteria.

It was found by Ntlabathi, Nkonki and Mkonki (2014) that alongside the institutional electronic learning environment student's used new technologies as social media a lot. Their study shows that higher educational students found social media applications such as Facebook, MySpace and other similar applications as easy to work with. They used these applications most of the time to communicate with their peers and as the source of information. They also supported each other about how to use them. This was also supported by most of the participants of this study. Students who used social media in their learning were also using them in a similar way. But the students who were not involved either in any collaborative group work or using social media in their studies think that social media would not help them much in their studies. But in general from their personal usage experience they have found that there is a possibility to generate more interaction on social media as people are using them more and more now-a-days in their personal life. They also added that social media can be a good platform to work together and learning from each other. However, they seem to be more supportive towards using the institutional electronic learning environment rather than social media for measuring performance and evaluation.

Thus it can be said that the advantages of social media in collaborative learning reported in previous studies were not fully absorbed in case of the student participants of University of Lapland and Lapland University of Applied Sciences. Most of the students were found to be using social media from their personal motivation. Even though teachers motivated them for using some in some cases but they were not involved on those directly. Students were using

social media among themselves and found many aspects which were supportive to the collaborative learning. Few students were found to be not using social media or collaborative learning in their studies. They were specifically belonging to the Faculty of Law of the University of Lapland. It could be interesting to have a view also from that faculty but for some unknown reason none of them were willing to participate in this research. Participated teachers in this research were found to be saying opposite in terms of usage compared to the participated students. All of the teachers were found to be using social media in their collaborative ways of teaching. Moreover, in their cases it was found that they not only design the learning environment based on social media but also are involved in a student's collaboration on social media.

Use of social media by the students and teachers of Media Education of the University of Lapland could be a good example for the other faculties and departments of both of the institutions. But the student participants from the same department also informed that only few teachers of that department teach using social media in their studies. To use social media in a better way in higher educational studies, most of students as participants were not so sure that what should be done specifically regarding collaborative learning. But nevertheless they had some general suggestions which ultimately can also be implied for collaborative learning. They suggested that, teachers should involve themselves with an open mind to create symmetry of status within a collaborative group work and they could even design the social media platform to perform a course work. The platform has to be comfortable to operate in and collaboration, otherwise it may not encourage the involvement by the participants. Social media have to be used as a common platform rather than just keeping it only as supplementary to the institutional electronic learning environment system. Teacher's responsibility could be to create awareness about the different possibilities offered by different social media to protect the users from risking their personal privacy threat.

Teachers suggested that the higher educational institutions should have a clear policy regarding the use of social media for academic purposes. The universities have to be more open towards the acceptance of new technologies like social media and find some ways to integrate those in the teaching and learning designs. Most importantly, social media should be used in a way that the people outside the universities remains connected. This way, people outside the universities or the society as a whole could be benefitted from the outcomes of academicians' works. This way, outsiders also could comment and criticize their works which

is relevant to the spirit of social media. The university may come up with any new tool which includes different aspects of different social media together as commenting, sharing, chatting or imaging.

## **5.2 Reliability and validity of the study**

Reliability includes the consistency of the study outcomes and whether they are replicable in similar situations or not (Kvale, 1996; Gray, 2009). Repeatability of the research results also indicates the degree to which the measure of concept is stable (Bryman & Bell, 2011). The results of this study are found to be consistent with the earlier research works on the same issue. While collecting the data the authors were depending on data saturation, which indicates that the participants were more or less providing the same information regarding the matter. Thus it can be said that if further investigations with a bigger numbers of participants and similar topic may not differ much with the findings of this research. According to Gray (2009), involvement of more than one researcher can improve the internal reliability while collecting and analyzing the data as they can interpret the data and findings from their own point of view. This study is the outcome of a peer work where two researches were involved in the research process. While analyzing the data, both of the researchers had gone through the transcriptions individually and peer reviewed each other's interpretations towards finding the reliable views from the participants about the topic. To make this study more reliable, the anonymity and confidentiality of the participants were ensured by the researchers while collecting data. According to Bryman and Bell, (2007), confidentiality means that the identities and records of individuals and organizations should be maintained as confidential. For a number of reasons, the information received from the respondents can be of a sensitive nature. In this thesis, the authors are committed to participants that their identity would not be disclosed to anyone and the information would be presented anonymously. Authors also equally assured them that the information collected will only be used for the academic purposes.

Validity indicates the relevance of the findings with the purpose of the study. In other ways it can be said that the data collected for the study are truly able to solve the problem in hand or not. (Gray, 2009; Cohen, Manion & Morrison, 2011.) Validity is used to determine the accuracy of the data collection and reasonableness of the research result (Golafshani, 2003). Personal bias while collecting the data can lead to the biased results which may not the true

reflection of a phenomenon. Thus, minimizing personal biases can increase the validity of a research work (Cohen, Manion & Morrison, 2011). While collecting the data both from students and teachers, both of the researchers were concerned about avoiding their own personal biases. The aim of the interviews were to listen from the students and teachers that how they are using social media in their teaching and learning. Even though the purpose was to find out how their use of social media are supporting various elements of collaborative learning but the findings of this study presents the actual phenomenon of whether they are using social media or not in any phase of their teaching and learning regardless the collaborative learning. According to Gray (2009), the external validity of a research depends on the degree to which findings can be generalized in other similar organizational settings. But he also added that as qualitative studies are usually done based on case studies and small samples, it is difficult to generalize the findings. This study is also based on case study of two higher educational institutions consisting of fifteen participants, which only depicts the use of social media by these particular participants of these two institutions. In case of internal validity, it indicates that there is a strong link between the theory and findings towards a sustained outcome (Gray, 2009; Cohen, Manion & Morrison, 2011). Thus it is essential to develop a sound and logical research plan to investigate qualitative study. Without a thoughtful planning of investigation the result may have lack of validity and at the end the result can be meaningless (Drew, Hardman & Hosp, 2008). This study is the outcome of a structured and stepwise research procedure by the authors. Proper procedures were also maintained while manipulating collected data into conclusion. It was conducted in a way that the collected data reflects the true phenomenon of the situation. The findings based on collected data along with the conclusion reflect the true result of the research and the chance of misleading is reduced. Thus the same result can be found in any occasion and other observers can also replicate the study.

### **5.3 Limitations of the study**

This study reflects the views of only some specific students and teachers of two higher educational institutions. Findings may not be true for the whole institutions in general. Few more Finnish higher educational institutions as case study could show the true picture of the use of social media in higher education particularly in collaborative learning. Law department students as participants provided few such information that it would be interesting to have a comment from the teachers perspective as well on those. But it was not possible to manage

any teacher from that department as they did not reply at all to the researcher's invitations to participate in the study. Authors found many secondary information sources regarding the research topic but those were written only in Finnish language. It was hard for the researchers to find out participants of the study as social media were not much used by many for educational purposes. Although all of the participated teachers were found to be using social media in their teaching but there were also many who refused to participate in this study because they do not use social media at all for educational purposes.

#### **5.4 Beneficiaries and further research ideas**

This study possesses the knowledge of collaborative learning (Dillenbourg, 1999) and social media usage in higher education, which has identified the matters like the effectiveness of using new media tools like social media in this specific pedagogical style. It has also addressed the barriers or problems in usage of social media in classroom practices, compatibility with the collaborative learning situation and the impact on achieving study goals. The theories and the conceptual framework developed in this thesis will also be helpful for doing future research in the field of media education. It can also be useful to the teachers and students of different faculties of both of the institutions to understand the current views and motivations regarding the use of social media in their teaching and learning. Based on this study results both of the case institutions can have the ideas of current usage of social media in higher educational studies and take some initiatives to improve the situation to use it in a better way. In this study all the participated teachers found to be formally using social media in their teaching design but from the students interviews it was found that many teachers do not use social media for educational purposes. Thus a research work covering bigger sample size could be able to show a general view on this matter. A further research with a bigger amount of sample and more numbers of case institutions can show the whole picture of social media usage in higher education in Finland.

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## **APPENDIXES**

**Appendix 1:** Interview questionnaire: Face to face interview questions for the Students of University of Lapland and Lapland University of Applied Sciences.

This interview is part of a Master Degree thesis. It helps to examine the usage of social media in collaborative learning environment by the students of University of Lapland and Lapland University of Applied Sciences. Provided data will be used only for academic purpose.

Faculty:

Gender:

Institution:

### **I. Situation: symmetry, degree of division of labor**

1. How frequently did you work in a group or with a peer throughout your studies?
2. Did you use social media within a group work or in other situations in your courses?
3. How do you feel about a student-student interaction and student-tutor interaction while doing any group work using social media?
4. Do social media have any advantage on setting up a common goal within a group and to achieve that goal?
5. How social media should be used to make the member feel of same status and to set a common goal?

### **II. Interaction: Interactivity, synchronicity and negotiability**

6. Are social media a convenient means of learning from each other within a group work?
7. Does a group work using social media increase the chance of more involvement by the group members?
8. Are social media a good platform to argue and negotiate the opinions among the member's?
9. How social media should be used to make the students involved in a group work by expressing own opinion and negotiate to learn from each other?

### **III. Process: rounding, mutual modeling**

10. While a group problem solving using social media is it convenient to summarize and present the problem individually and combine the common features of every member's to make a combined solution?

11. Have you found social media as a good platform for the distribution of work among the group members to make individual work as more efficient?
12. Did group works on social media give you the opportunity to explain your opinions to other members with or without any conflict?
13. How social media should be used to a combined problem solving with efficient distribution of work load and with a scope of self explanation?

#### **IV. Measuring Effect:**

14. was your individual amount of integration on social media taken into consideration to evaluate the performance or it was your overall group interaction which was considered?
15. Do the development of your generic skill to communicate because of using social media in a group work also considered while measuring the performance?
16. To you, which social media is/are good for measuring over all group performance?

#### **V. Designing Interactive learning atmosphere**

17. Was there any specific criteria/s imposed by the tutor to ensure interaction and participation by the member while group work?
18. What was the tutor's role and how social media helped to relate the tutor with the group work?

**Appendix 2:** Interview questionnaire: Face to face interview questions for the teachers of University of Lapland and Lapland University of Applied Sciences.

This face to face interview is part of a Master Degree thesis. It helps to examine the usage of social media in collaborative learning environment by the teachers of University of Lapland and Lapland University of Applied Sciences. Provided data will be used only for academic purpose.

Faculty:

Gender:

Institution:

Q1. Do you usually encourage collaborative group work within the courses taught by you?

Q2. How do you consider using social media in a collaborative group work?

Q3. Do the use of social media in a group work helps to set a common goal with the symmetry of status knowledge and action?

Q4. Do you think that use of social media in a group work generates degree of interaction, and crates a negotiable situation to do something together?

Q5. How do you see the role of social media to create a division of labor within the group, problem solving and learning from each other?

Q6. How is it convenient to use social media to track individual performance and group performance? Do you measure the performance from individual point of view or overall group point of view?

Q7. What kind of initial conditions do you impose to ensure at least some types of interaction on social media?

Q8. What is your own role and how do you relate yourself to the student group collaboration on social media?

Q9. Did you face any barrier/s while adapting social media within your teaching design? If there is, then what could be the possible solution to you towards the use of social media in collaborative learning in a better way?

**Appendix 3:** E-mail, seeking for the appointments from Teachers of both of University of Lapland and Lapland University of Applied Sciences.

Dear Name,

we are two students from the University of Lapland, studying master degree in media education. At present, we are writing our master's thesis on how higher education teachers use social media in collaborative learning. For this purpose we are searching for voluntary interviewees who represent the teaching staff either at the University of Lapland or at the Lapland University of Applied Sciences.

Would you like to participate in our study? The interview would take less than an hour of your time and we can meet at your office, if that is ok with you. What would be the day and time that is suitable for you? It would be of great value to hear about your teaching experiences regarding our research topic, even if you do not use social media within your teaching approaches.

Thank you.

Best regards

Jannatul Maria &

Kanak Biswas

Students, Media Education

University of Lapland

Rovaniemi, Finland