The Student Learning Ecology

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Abstract: Educational research on social media has showed that students use it for socialisation, personal communication, and informal learning. Recent studies have argued that students to some degree use social media to carry out formal schoolwork. This article gives an explorative account on how a small sample of Norwegian high school students use social media to self-organise formal schoolwork. This user pattern can be called a "student learning ecology", which is a user perspective on how participating students gain access to learning resources.

Keywords: Learning ecology, social media, high school, Norway

1 Introduction

How do students evaluate and use social media to organise formal schoolwork? This case study attempts answering that question, by connecting traits of youth's web consumer culture to Barron's (2006) concept of *learning ecology* and recent educational research on social media. The paper argues that social media is used by students beyond socialisation and informal learning. The paper offers a case study on how students blend formal schoolwork into a sphere normally associated with pastime activities. This user behaviour suggests being characterised by reflective decision-making processes, showing selective user participation. Participating students are part of a self-organised web practice, which happens beyond the instruction of their teachers. The paper verifies that out of a data sample of 26 Norwegian high school students, 12 reported using different Web 2.0 tools in the mentioned way. Some students modelled a network learning environment, which I suggest can be called a *student learning ecology*. The term is an attempt to apply and expand on Barron's

(2006) concept. To empirically describe this, we can look at the paper's content and structure. First, I take in hand the research perspective I will use. Second, I account for the applied methods and the study's data sample. Third, I perform the data analysis and present findings. Finally, I provide concluding remarks and address the study's limitations.

2 Research Perspective

The arrival of Web 2.0 (O'Reilly, 2005) has involved the introduction of several technical definitions. Boyd and Ellison, for example, define Social Network Sites (SNSs) as "web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other user with whom they share a connection, and view and traverse their list of connections and those made by others within the system" (2007, p. 211). Such an understanding involves that web services like Facebook and Twitter are SNSs, while "old" web pages, like blogs, are not (Aalen, 2013). Kaplan & Haenlein, on the other hand, have classified social media as a "group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" (2010, p. 61). They also (2010) suggest that there are six types of social media software: (1) Collaborative projects, e.g. Wikipedia, (2) blogs, (3) content communities, e.g. YouTube, (4) SNSs, e.g. Facebook, (5) virtual game worlds, e.g. World of Warcraft, (6) and virtual social worlds, e.g. Second Life.

Such definitions are useful. They give directions and clarify what social media "is", and what it "is not". On the other hand, they pose analytical challenges. They are technical and challenging to use, in order to capture the social side of new technologies. Applying them to explain web mediated phenomena, like Internet meme, the cyber currency Bitcoin, hacktivism, for example, could prove difficult. One needs to apply other approaches. Barron's (2006) concept of "learning ecology" suggests to be beneficial in this sense. Learning ecology is defined as "the set of contexts found in physical or virtual spaces that provides opportunities for learning" (Barron, 2006, p. 195). Inspired by socio-cultural, activity and situative learning theories (Engeström, 1987; Lave, Wenger, 1991; Vygotskij, 1978), learning ecology assumes that individuals are involved in many settings, create activity contexts within and across settings (Barron, 2006, p. 199). According to Barron (2006), learning ecology assumes the involvement of several learning processes, and the creation of activity contexts in a new setting, or, that the pursuits of learning are found outside the primary learning setting. Barron (2006) argues that it accepts informal learning and

recognises the variety of literacies, practices, and forms of knowledge, which are used by youth when they interact with new technologies. Learning ecology also considers that the boundaries between different settings are permeable and that youth uses multiple cultural forms in pursuing knowledge (Barron, 2006).

Learning ecology can analytically reduce the constraints on technical definitions, recognise informal learning, stress that several social media applications are used independently of each other, to support forms of learning processes, for example. Learning ecology can bring attention to forms of network organisations, and the meaning of transactions taking place between ties in social networks. Making a distinction between *informal* and *formal* schoolwork can help further. Establishing to what extent an activity follows a learning objective or is given by an educational authority, can bring to light how a learning ecology "works" (OECD, 2014). Exact attention on how students use Google Docs to collaborate on project assignments, how they establish Facebook groups to inform each other on homework assignments, how they share files with fellows student to get feedback, for example, can be one way to answer questions raised in recent educational research on social media. Over the years, it has been documented that youth use SNSs to socialisation, personal communication, and informal learning (Madge, Meek, Wellens, Hooley, 2009). On the other hand, it seems that educational researchers to a little degree explore the *"whys"*, on why students use SNSs to create content, share, interact and to collaborate, in order to self-organise formal schoolwork (Hamid, Chang, Kurnia, 2009). Researchers are prone to argue that we need to know more about uses, practices, and user patterns (Ellison, Steinfield, Lampe, 2011). It is difficult to identify a student user perspective, which asks why certain students participate in a web mediated participative culture (Jenkins, 2006), while others refrain from being part of one. Barron's (2006) concept can act as such a bottom-up user perspective.

Educational research on SNSs, however, appears to be shaped into different trajectories. Studies still favour university students as main research subject. There are certain topics that reoccur as focal point. Studies bring closer attention to the new literacy practices, forming as students communicate in new ways (e.g. Drouin, 2011; Greenhow, Robelia, 2009). Other studies have concluded that Facebook is a tool for effective collaborative learning (Irwin, Ball, Desbrow, Leveritt, 2012), while Lurkin et al. (2009) found that students' use of Web 2.0 brought little evidence of critical reflection. Studies have claimed that social media can have positive effect on English training (Kabilan, Ahmad, Abidin, 2010), while Maragaryan et al. (2011) found that engineering students followed more lecturers' teaching approaches than using digital tech-

nologies. We find a body of studies which has explored user patterns (e.g. Robelia, Greenhow, Burton, 2011; Silius, Miilumäki, Huhtamäki, Tebest, Pohjolainen, 2010). Researchers find that SNSs used in educational context is more about student socialising than following course objectives (e.g. Junco, Cotten, 2012; Madge et al., 2009; Nykvist, Daly, Ring, 2010; Price, 2011; Wodzicki, Schwämmlein, Moskaliuk, 2012). Other studies have investigated how students manage different types of online identities, and its associated politics and practices (e.g. Mallan, Giardina, 2009; Mazman, Usluel, 2011; Selwyn, 2009).

Some studies have analysed how students use web 2.0 applications as part of their studies. Hrastinski and Aghaee (2012) found that university students used very few social media tools that could support their learning. They used social media to ask general questions, coordinate group work, and share work files. Hung and Yuen (2010) found that use in classroom teaching indicated the development of a stronger sense of connectedness among students, but had its basic role as a *supplementary tool*. Veletsianos and Navarrete (2012) found that students enjoyed using ELGG, but that participation to course-related and graded activities, showed little degree of networking, sharing, and collaboration. Grosseck et al. (2011) found in their study that the majority of the students spent significant time on Facebook. They engaged more into private matters than concentrating on the academic tasks at hand, even if they took part in discussions about their assignments, lectures, and shared information about research resources. In other words, we can infer that these studies yield the limited success of social media's usefulness, in terms of enhancing students' learning ability and user-acceptance in education, for example.

3 Methods and Data Sample

All Norwegian youth between 16 and 19 are entitled to attend high school education, which normally follows a three-year study programme. Future students can choose between general studies and vocational studies. General studies is a three-year education that prepares for university studies. In vocational studies, students can choose between different sub-programs. It follows a so-called "2+2 model", involving that the two first years are theory orientated, while the two following ones are organised around apprenticeship in a company. The study's data sample, however, was collected at a rather large high school in Trondheim, Norway, from January to March 2012, which offers both general and vocational studies. The high school has digital competences as a priority area. The students were recruited from one class in general studies and another in vocational studies. The students were digitally informed and were

well-versed in use of computers and social media software. The sample is *not* a representative population, reflecting all Norwegian high school students.

The research design followed an explorative approach. It is rooted in a qualitative research method. 26 students were interviewed by use of qualitative indepth interviews, 17 boys and 9 girls. I completed 12 interviews, 10 in groups consisting of pairs to 4 students. Two interviews were completed individually, meaning a face-to-face conversation between me and the student. All interviews were conducted at the premises of the high school. The interviews lasted from 20 minutes to an hour. All interviews were semi-structured and explorative, following a guide with predefined questions. I asked the students about their user experiences. I asked if they used social media to organize themselves in online communities, in order to share formal school-work or to carry out informal learning. After I completed the interviewing, however, I transcribed them. I started looking for patterns. To complete this data analysis strategy, I was inspired by the sociological technique *constant comparative method* (Strauss, Corbin, 1990; 1998). I performed an open-ended approach, where I coded and grouped the students' answers into larger themes. The results from my coding are the five themes, which constitutes the data analysis. The study's informants are listed in table 1.

Table 1: The case study's informants.

Interview no.	Form of interview	Informant no.	Gender	Age	Approx. Facebook Friends	Member school FB-group	Active bloggers	Google Doc	Skype	Study program	Subject	Level in school	Date
1.	Group	1.	M	17	900	-	-	-	Y	Voc	Eng	2nd	Jan 2012
		2.	M	17	600	-	-	-	Y				
2.	Group	3.	M	17	350	-	-	-	-	Voc	Eng	2nd	Jan 2012
		4.	M	17	50	-	-	-	-				
3.	Group	5.	M	17	-	-	-	-	-	Voc	Eng	2nd	Feb 2012
		6.	M	17	800	-	-	-	-				
4.	Group	7.	M	17	-	-	-	-	-	Voc	Eng	2nd	Feb 2012
		8.	M	17	-	-	-	-	-				
5.	Group	9.	M	17	400	-	-	-	-	Voc	Eng	2nd	March 2012
		10.	M	17	-	-	-	-	-				
6.	Ind.	11.	M	17	300	-	-	-	-	Voc	Eng	2nd	March 2012
7.	Group	12.	M	16	600	-	-	-	Y	Gen	Spa	1st	Feb 2012
		13.	M	16	700	-	-	-	Y				
		14.	M	16	-	-	-	-	Y				
8.	Group	15.	F	16	1.000	Y	Y	Y	-	Gen	Spa	1st	March 2012
		16.	F	16	300	Y	Y	Y	-				
9.	Group	17	F	16	700	-	-	-	-	Gen	Spa	1st	March 2012
		18.	F	16	400	-	-	-	-				
		19.	F	16	800	-	-	-	-				
		20.	F	16	1.000	-	-	-	-				
10.	Group	21.	M	16	700	Y	-	-	-	Gen	Spa	1st	March 2012
		22.	M	16	-	-	-	-	-				
11.	Ind.	23.	M	16	200	Y	-	-	-	Gen	Spa	1st	March 2012
12.	Group	24.	F	16	200	Y	-	-	-	Gen	Spa	1st	March 2012
		25.	F	16	200	Y	-	-	-				
		26.	F	16	300	Y	Y	-	-				

4 Data Analysis – Findings

The data analysis builds on the user experience of 12 students, which covers seven males and five females. These are informants 1, 2, 12, 13, 14, 15, 16, 21, 23, 24, 25, and 26. 10 attended general studies and 2 vocational studies. Based on their personal user experiences, I have categorized their answers into five larger themes. Each theme outlines how they evaluate and organize schoolwork, moreover, if they use social media to cooperate, share, and get feedback on their formal schoolwork from peers. The themes are aimed at answering the article's main question; how do students evaluate and use social media to organise formal schoolwork? Each theme also aims at showing a conformist user behaviour, suggesting to be characterised by reflective decision-making processes, exposing selective user participation.

The first theme explores how they evaluate their online ties, reflecting that students are rather sceptical regarding who they bond with on SNS. The second connects to how they establish Facebook groups, which works as a type of "class bulletin boards". The third shows how students produce learning tools, and how they actively decide not to share them with co-students. The fourth scrutinises how students use Skype, as a way to cheat on their homework. The fifth theme tells the story of how Facebook groups take on a larger role. It is a discussion and coordination site, to complete larger project work submitted in the collaborative tool Google Docs.

4.1 Theme 1: The social selection of online ties

The first theme characterising the student learning ecology, concerns ideas and practices related to social selection processes in social networks. How social actors choose their ties, for example, has implications on access to potential resources. The students interacted between several social media software, some that are "social", like Facebook, while others are mere content pages, like blogs and YouTube. The latter ones did not give access to new ties. Facebook was widely used, however, and "faceworking" was not new. It is an ongoing reflection process. Requests and ties are continuously up for review. Students had large Facebook networks, on average between 400 to 500 ties, working as a standardisation. It seems that personal Facebook networks were "normalised" around there. Some had as many as 1.000 connections, but admitted they did not know everyone. Many claimed they knew all their ties, but some had reversed this. One female student had unfriended 700 ties from 1.000 to 300.

The students reported putting on a conformist "guard", as they were now more concerned with rejecting than including new ties.

In other words, inclusion and exclusion to social networks, and the blurred role between the on-line and off-line worlds, was a factor. It worked as a significant precondition for participation, as well as creating multiple divisions between students. These followed the lines of independent variables, like age, gender, and study programs. The students in vocational studies, for example, took on a very "conservative" stand. They did not share any type of assignments with co-students, involving very low prospects for student collaboration. Only two male students did so. If they shared, it happened in small networks, consisting of two or three ties, often within the limit of a one-to-one relation. The male students in vocational studies preferred submitting assignments on the school's Learning Management System. They expressed considerable scepticism to share schoolwork on social media. Privacy was an issue. They had an individualised approach. They considered that sharing should only be carried out under the strictest confidentiality, mainly as an off-line relationship between student and teacher in a private physical space.

Students in general studies had a different attitude. They used Facebook and Skype to goal-orientated activities. This applied to at least 10 students, implying higher probability for student collaboration. Yet, there are user patterns showing layers of division and low degree of transparency. All Facebook groups, for example, were closed. They were established for different reasons. Some were class-based, others were created as part of project work in distinct subjects. Facebook groups has also been created around distinct subjects they studied. The students published different content too, ranging from practical information, to take on the role as discussion forums. Resourceful students created them and took on the role as administers. Many students explained that they had been added without their consent, but somehow started using them regularly. There were at least four to five Facebook groups.

The Facebook groups were in fact off-limit area to teachers, involving that none of teachers had taken any role in creating them. The students had very clear opinions, on who should have access. If the teachers, for example, took on a very active role in orchestrating how they should work and what type of content should be shared, it would involve lower probability of use. The students needed an "online backstage", a site where they can do their school work and not having their teacher peaking over their shoulder. As this female student explains:

I-24: "They could have written that, this was something you should have paid attention to in class. And, you have to be friends with the teacher, if they are to be member of the group. And I don't think that there are many who are friends with the teachers."

4.2 Theme 2: Facebook as a "class bulletin board"

The second theme in the student learning ecology, nevertheless, is to consider what role Facebook groups can take. Facebook groups are often framed as a "class bulletin board". Once groups were established, they took on a practical and coordinating role. Sharing was not based on discussions of assignments, such as increasing knowledge on a distinct topic, but to keep oneself updated. Students in general studies used the groups in this way. None of the students in vocational studies reported using or being member of anyone. The data suggests four to five closed groups, where at least three were class-based. Students emphasized that they were useful. The class-based were mainly used within three areas: (1) as bulletin boards, (2) to inform about homework, and (3) to share cram sheets as part of preparation for tests. These female students explain:

R: Are you member of a Facebook group?
I-24: Yes. We have a class group. There we talk about what homework we have and what tests we are going to have, stuff like that.
R: Are you active in one of those? I have understood that it is not created by a teacher, but by you guys?
I-24: Yes, to remind each other that we have tests. It is very smart.
R: Is this a bulletin board or do you have discussions about assignments?
I-25: No, not about topics.
I-24: It is like that, if someone has homework, and has forgotten what pages we are supposed to read for a class, then you post what page we are supposed to read in science, and then there is someone who writes it if they know it.

The transcript indicates that sharing is about obtaining practical information as part of preparations for future classes. Students share information on what they have in homework for the next class, which pages they are supposed to read for a particular lesson, for example. Sharing is not based on a motivation

to participate in a reflective process with the aim of turning data to knowledge on a distinct topic. Sharing is individual and rarely based on collaboration. The Facebook groups are a sort of a "student answering service", where communication is individual, but public, with the expectation of a short answer. There is a low threshold for sharing. Anybody can post anything without having the risk of being bullied. The exchange is a supplement to regular reminders students do face-to-face. This aspects, perhaps, reminds much of the old "work plan", a sheet, which teachers handed out to students at the beginning of each week describing designated workload. Cram sheet, however, is a popular digital item:

> *I-21: "We have a class group, we have an own Facebook group. When we have tests, for example, we can share cram sheets. If there is someone who has not done their homework, then we can share, so we can talk to each other, what is our homework for the next day, what is the work for the next week. In that sense, it is very convenient."*

4.3 Theme 3: Production of learning tools – the cram sheet

The third theme of the student learning ecology, however, concerns the creation and sharing of a popular user-generated item, the cram sheet. The creation and sharing of cram sheets, reflects how students embed or transfer a learning strategy, which aim at reproducing formal knowledge and carry out a goal-driven activity in the online world. Cram sheets can be classified as a concise set of notes of compressed knowledge used for quick reference. Students use them as part of their preparations for tests and exams, inasmuch as a method to memorize formal knowledge in any given subject they are enrolled in. Creating them is also an exercise, as learners have to perform some degree of work by themselves. Modern students often turn to the Web and retrieve them there. But there is a catch. The Web's complexity means that there are unknown quantities of cram sheets in global circulation. Students will often face a reoccurring problem: cram sheet overload. The relevant and accurate one, which covers the exact material for the test at hand, can be hard to find. If not found, they must be produced and shared by someone, a piece of workload which someone has to complete. This male student explains:

R: What's going on there?
I-23: Everything about what we have in homework, when classes start, cram sheet, tests, and what the tests are about.
R: Do the students share their schoolwork very actively there?
I-23: Yes, a lot. It is mostly those who don't bother studying and who don't bother do well at school, who ask if others can post cram sheets. I do not post my cram sheets there.
R: What is a cram sheet?
I-23: We often have a topic related to our tests. Everything that we have in a specific topic, we write down on a sheet, which is important to know. So, it is almost like a summary of what we are going to have on the next test.
R: Is this a method that you created or developed by yourself?
I-23: It is almost as taking notes in class, where you write what you feel is important to know. I use cram sheets a lot. Mostly, I use when I browse through what we have read in the textbook, I read through it, and write down what's important.
R: Is this a method you learned in school?
I-23: Yes.
R: Are you careful about sharing cram sheets on Facebook?
I-23: Yes, I think it is too easy. I think that they ought to figure it out by themselves and organise their own cram sheet. They only dodge work.
R: Because you are really doing the work for them, right?
I-23: Yes. I will not do the free work for them. I have worked hard on this and I will not just give it away.
R: Are there many asking for cram sheets?
I-23: It is the same who ask. They rarely post cram sheets themselves.
R: There is somebody doing that?
I-23: Sometimes there is.
R: Are there anyone who are more active in this Facebook group than others?
I-23: Yes. Those who don't pay attention in class, those who need more info.

The transcript shows that non-publishing is a moral belief and a decision, identifying rigid distinctions and labelling of co-students. In our case, "those who need more info". Students requesting such items, are ascribed the social identity or the role as "free riders", a type of student who attempts benefiting from

a learning resource without repaying own requests. They try profiting from others' work, a type of "student opportunist", and are more or less understood as disloyal. They would seldom repay a social gift and try to escape responsibilities and obligations. Non-sharing does not encourage to constructive student interaction or collaboration. One can easily sympathize with the student. Non-sharing displays defined norms or values commonly seen when items are exchanged. If one is to share, the student has an awareness that formal learning should imply a symmetrical value in a relationship. If something is being given away, it creates an expectation of reciprocity, or that something is returned. The male student knows that blind sharing is to make it easier for a student type category, who breaks with the acceptable standard for good student collaboration. If he gives away his cram sheet, he will probably get little in return. Consequently, it is not better to share.

4.4 Theme 4: Using Skype to cheat on homework

The fourth theme shows how social media is used for what can be classified as a non-constructive learning activity, in terms of possessing good learning strategies. Social media is used to *cheat* on homework, but also reveals students' ingenuity and creativity in reengineering online resource management practices. Such web practices are seldom intended at retrieving information from the web for critical reflection, in order to create indepth understanding of a topic. They are merely collaborative practices, where students use online ties from Facebook or Skype, to quickly manufacture and reproduce a digital item with as little work as possible. This applied especially when students needed doing their homework in a hurry, a practice they referred to as "last minute work". These male students explain:

R: Do you use Skype to do schoolwork?
I-12: That too. To send files.
R: What kind of files are that?
I-13: Homework.
I-12: Among other homework. Collaboration assignments, for example. One writes something on one computer and then sends it to the others.
R: Is there a Word file?
I-14: Yes. Anything, really.
R: Is there someone who writes a document, and then circulates it?
I-13: It happens sometimes.

R: Who starts writing the document?
I-12: It varies.
I-13: It is often those who are quite structured.
R: Is it you guys?
I-13: Yeah.
I-14: Yes, you might say that.
R: Is that within your network? Is it so that one starts to write, and then some other adds more? Is that how it works?
I-12: No.
I-13: It's like "last minute work". If it happens that your teacher is going to check your homework, then you get it one minute before you have to show it.
R: But can't the teacher identify this?
I-14: No.
I-13: No. They just look at the assignment.
R: Is this something you learned here, at this school?
I-14: We got the laptop this year.
I-13: PC was not as that "cool" in junior high school.
R: It wasn't?
I-12: No. It was first in high school that we got our own laptops.

It is commonplace that students manipulate homework; it is a type of an ancient and well-played educational "ritual game of deception" between students and teachers. Teachers are familiar with that students try to deceive them, into believing that they have completed their homework assignment. Skype is a form of student collaborative "back stage", to perform superficial cosmetic work on formal schoolwork. The male students circulate one similar digital item on their "backstage", which on their "front stage", is portrayed to be the individual work of one student, when it is fact not. Skype is used as a tool to perform a type of impression management strategy, a social role play, that the students have done their "job". The practice is doubtfully constructive in fostering good study habits, but shows that students use ties in the student learning ecology to modify "cut and paste" practices. We see that students abide to some sort of code, norm or value, which still questions if homework has an educational value.

4.5 Theme 5: Facebook and Google Docs for learning

The fifth theme illustrates an advanced web mediated practice. It can be classified as innovative, and shows a way on how students should work in the interaction between learning and new web technologies. The practice is a blended approach, where formal knowledge is supposedly formed in the intersection between face-to-face interaction and digital space. It is a constructive learning practice and is not based on investing minimal efforts in order to get the "job done". It reflects that online exchange is part of interaction, collaboration, and reflection, where web content is retrieved and transformed into some type of formal knowledge, or, perhaps, students are connecting pieces of sources in order to create formal knowledge outside the mind. The intent is to create, sensemake depth, and process data to some sort of formal knowledge through social interaction. It can be argued that it constitutes a practice where students attempt expanding their knowledge on an already *established* socio-cultural experience.

This trait becomes clearer when looking on what type of digital content is retrieved, processed, and produced, and what role social media plays in this regard. Very few students used social media to this purpose. Female students in general studies, for example, established temporary Facebook groups, which were part of a larger cross-disciplinary project, which covered the work realms of different teachers and subjects. The groups were operational as long as the projects lasted. The female students reported that they sent links to each other, and actually discussed the project's purpose, thus relating social web to a goal driven learning activity. Facebook updates are answered with comments, where one gets the glimpse of a participatory culture, involving that SNSs are used as *discussion forum*. This transcript from one of my interviews shows the point in case:

I-15: We had a group project, "2050 Trøndelag", on how Trøndelag is going to be in the year 2050. There we had a Facebook group, where we discussed what we were writing, what we should put in our project, what was relevant to have, and things like that.

R: Who was most active in that group? Was it you?

I-16: No, it was not a big group. All contributed. We were five students, but the fifth did not do much. We were contributing all together. And we used Google Docs.

Facebook is used in combination with the web-based office suite software Google Docs, which means that we see a type of parallel processing of two distinct web practices. Facebook groups act as a *work* and *coordination* site, while Google Docs is the tool that documents the assumed transformation of info to knowledge, as well as being the end-deliverable for grading. There is a hidden parallel web practice; they used SNSs and collaborative real-time online writing and edit software together. Other students demonstrated similar user patterns, but instead of writing in Google Docs, they sent working documents on e-mail to each other. Students demonstrating this user pattern, however, are autonomous and very self-organised. They appear mastering the complexity and chaos of the current Web, and are well-versed in writing and reading texts, beyond the mere firm reproduction of scattered information. They possess a reflective and critical skill, which aid them to tell the differences in quality of what information is relevant and not. They manage the conversion of data to the logics of formalised knowledge, or, comply with the intent of goal-driven deeds. They can modify and interpret web content, beyond "cut and paste" or retrieving. This collaborative web practice, for example, suggests to have helped one of my informants in her learning. She explains:

I-15: "And when all of us were going to contribute in the written part, I was very nervous, because I'm not so good in writing Norwegian. And then I sent it to the people in the group, so that they could see through it, what I should write more about or what was wrong. Just to be sure it was correct what I had done. So I got good feedback. It helped me a lot that we had a Facebook group. I got to hear 'it was awesome, but I could imagine that you wrote a bit more about fish farming on Salmar too.' And then I wrote a bit more about that. And the other would look at it and then it was time to hand it in."

5 Conclusion

Recent educational research on students' use of social media appears producing contradictory results, especially regarding the question if it represents a constructive learning resource in formal learning. Greenhow and Robelia (2009), for example, found in their research that students used it for such purposes, while others argue it might be a positive asset, foremost as a supplementary in classroom training (Hung, Yuen, 2010). On the other side of the axis, researchers have uncovered little solid evidence that social media fosters collaborative learning (e.g. Madge et al., 2009; Selwyn, 2009). Social media

struggle to be perceived as a potential learning resource, a tentative belief that gets more legitimacy when students report that they prefer the "old way" (Hrastinski, Aghaee, 2012). Research has also indicated that "to get social media to work", instructors are forced to instruct students and oversee that it is used at all (Veletsianos, Navarrete, 2012). This implies that use of social media in formal learning still has a long way to go, implying that some researchers question if youth as "digital natives" is a myth or reality (Margaryan et al., 2011).

The application of Baron's (2006) "learning ecology" is an attempt to introduce a user perspective on students' use of social media. I have attempted emphasising that students exercise reflective decision-making processes, showing strong selective user participation. Students apply different strategies in how they choose to involve themselves in digital social learning environments. There are certain internal dynamics in students' user behaviour, which are reflected in the five themes, that future research should perhaps address. Social media is used for constructive and non-constructive learning. As only half of the data sample uses it to fulfil a learning objective, this case study only contributes to reconfirm what previous research has taught us; there is still a long way to go, in order to get social media to be a tool that fosters collaborative learning. Only a few does, female students in general studies.

There are obvious research limitations with this case study. One cannot gather valid conclusions from one single case study. The study does not claim to be representative for how all Norwegian high school students use social media in formal learning either. It is only an explorative. The study supports tendencies seen in current research, but poses some indication to where futures studies should set their focus. There is need for longitudinal research, in addition to address gender issues. My main concern has been to introduce a more solid user perspective, which can theoretically can cast light on the subject matter. And, perhaps a place to start is to go further into Barron's (2006) "learning ecology", as I have done here.

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Biography

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