Master's thesis

NTNU
Norwegian University of Science and Technology
Faculty of Social and Educational Sciences
Department of Teacher Education

Lasse Georg Tønnessen

Facebook as a Tool for Teacher Collaboration

A Study of How Norwegian ESL Teachers Participate and Share Knowledge on Social Networking Sites

Master's thesis in Master of Science in Didactics – English and Foreign Language Education
Supervisor: Anna Krulatz
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Kunnskap for en bedre verden

Abstract

This mixed method, content analysis research study describes the characteristics of how Norwegian ESL teachers participate and share knowledge on social networking sites. The participants for the study were members of a large Facebook group for ESL teachers in Norway. The paper uses the theoretical framework Wenger's (1998, 2008) Communities of Practice and Siemens (2005, 2008) connectivism. Data collection consisted of collecting posts and comments made by users in the group and analyzing them using content analysis. The paper also used semi-structured interviews with two participants in the group, as well as observational notes to further triangulate findings.

The findings suggest that teachers are mostly engaged with knowledge which elicits abstract ideas and inspiration. It has further been found that most teachers post and asks for specific resources or tips on things to use in their teaching. Didactic reflection or reasoning has been found to be missing in the knowledge shared in the group. The exemption to this is a small group of facilitators who encourages discussions and reflections through their posts. Furthermore, multimedia content has been found to be highly popular to share as resources in the group.

Findings further suggest that teachers gain emotional and informative support when reading experiences shared by other teachers in the group. However, the research also finds that teachers sharing experiences using their own personal profile risks violating the privacy of persons included in the stories. It has been found that a suggested practice is having third party mediators post on behalf of teachers prevents these privacy concerns.

Sammendrag

Denne blandede metode studien beskriver egenskapene til hvordan norske ESL-lærere deltar og deler kunnskap på sosiale medier. Deltakerne i studien var medlemmer av en stor Facebook-gruppe for ESL-lærere i Norge. Oppgaven bruker det teoretiske rammeverket til Wenger's (1998, 2008) Communities of Practice og Siemens (2005, 2008) connectivism. Datainnsamling bestod av å samle inn innlegg og kommentarer fra brukere i gruppen og analysere dem ved hjelp av en innholdsanalyse. I oppgaven ble det også brukt halvstrukturerte intervjuer med to gruppemedlemmer, samt observasjonsnotater for å ytterligere triangulere funn.

Funnene viser at lærere primært søker kunnskap som inneholder abstrakte ideer og inspirasjon. Det har videre blitt funnet at de fleste lærere bruker innlegg til å spør gruppen om spesifikke ressurser eller tips om ting som skal brukes i undervisningen. Didaktisk refleksjon eller resonnement har vist seg å mangle i den kunnskapen som deles i gruppen. Unntaket til dette er en liten gruppe tilretteleggere som oppfordrer diskusjoner og refleksjoner gjennom deres innlegg. Videre har multimedieinnhold vist seg å være svært populært å dele som ressurser.

Funnene viser videre at lærerne får følelsesmessig og informativ støtte når de leser erfaringer som deles av andre lærere. Forskningen finner imidlertid også at lærere som deler erfaringer med sin egen personlige profil, risikerer å krenke personvernet til personer som inngår i erfaringene. Det har blitt funnet en anbefalt praksis hvor tredjepartsmedlemmer deler erfaringer på vegne av lærere for å unngå denne personvernsproblematikken.

Preface

This master thesis marks the end of my time in Trondheim and five years of study at NTNU. I would like to thank all the people who have helped me carry out this thesis. Thanks to my supervisor, Anna Krulatz, for her indispensable guidance and honest feedback throughout this work. Thanks to my parents for always being there and supporting me. I would also like to thank Studentmediene and the Student Society for making my time as a student in Trondheim the best years of my life. Being part of such an enthusiastic and positive community has evolved me as a person and for that I am forever grateful. This was also the place where I met the most wonderful bread baking plant hoarder in the world. I am truly grateful to have you be a part of my life Nora.

I hope you enjoy your reading.

Content

Figures

Tables

Abbreviations/symbols

CoP	Community of Practice
SNS	Social networking site
ICT	Information communication technology

1 Introduction

This thesis seeks to examine an online community of English teachers on Facebook with an excess of ten thousand members. This group, although amongst the biggest for English teachers in Norway, is not alone in representing the social media revolution that does not appear to be slowing down. The use of social media is exerting an increasing influence on our daily lives. Social media usage in the general Norwegian population is continuing to steadily increase, with 66 percent of the population between 16-79 using social media daily or near daily in 2018 according to Statistics Norway (SSB, 2018). This growth is estimated to continue until an almost complete adoption within less than a decade. Furthermore, in the public sector we are seeing an increased use of social media within the workplace. In fact, over half of Norway's municipalities use social media for project work and half also use it to exchange views/opinions/knowledge within the enterprise (SSB, 2019). Over the course of a few decades social media has become a major influence, both in the private and working life of Norwegians.

Along with this social media revolution we are also seeing the educational sector undergoing changes, in what some researchers has referred to as "the second educational revolution" (Collins & Halverson, 2010, p. 1). People today are in increasing ways acquiring learning using technology. This can be in the form of playing video games, taking online courses, participating in social networking and using online learning platforms to manage our professional lives. Technology has therefore created learning opportunities that, according to Allan Collins and Richard Halverson (2010), are a challenge to the traditional educational practices of schools. New avenues of learning allow people to pursue learning at on their own terms. Consequently, we are seeing teachers in more and more ways adopt technology into their working life. As Collins and Halverson (2010, p. 2) writes: "The central challenge is whether our current schools will be able to adapt and incorporate the new power of technology-driven learning for the next generation of public schooling.". This new educational revolution means teachers need to be able to keep up with the changes affecting their profession, as Edgar Morin (2002) states: "major responsibility of education is to arm every single person for the vital combat for lucidity" (Morin, 2002, p. 12). This implies that teachers should move away from just providing knowledge towards curating and clarifying already accessible knowledge.

With these two "revolutions" going ahead at full force, it is perhaps not odd that we are seeing teacher participate in online spaces at an increasing rate. Furthermore, we are seeing an ever-increasing presence of teacher communities in social media sites, which cater to those teachers looking for professional communities where they can engage with their peers (Kelly, Reushle, Chakrabarty, & Kinnane, 2014). As a possible result of this, we have seen Facebook becoming a massive arena for Norwegian English teachers to collaborate and discuss different ideas and practices of teaching. This form of engagement has been shown to have an important role in teacher's professional development and as such has become an increasing focus for many researchers (Robson, 2018; Yeh, 2010; Zuidema, 2012). However little research has been done on the function these group play in the professional life of teachers in Norway. This paper therefore seeks to provide a greater understanding of the Norwegian situation by researching how Norwegian ESL teacher participate and share knowledge with each other in these communities.

1.1 Establishing a Timeline for Social Media and ICT Development in Norway

Before looking into the specific research topic of this thesis, it feels appropriate to clarify how this field of research has become relevant and not least its relevance in Norway. We start by taking looking internationally at the time where social media developed from a niche, into a worldwide phenomenon. After this we move our focus over to Norway and the development of ICT strategies in schools, before we finally piece together the events that led up to the eventual adoption of social media by Norwegian teachers.

The social media revolution is said to have started in 2003 when social networking was considered to have hit the mainstream culture with a massive influx of sites being created, amongst them Myspace, LinkedIn, Couchsurfing (Boyd & Ellison, 2007). According to Danah Boyd and Nichole Ellison (2007), social networking sites really gained global attention in 2005, with Myspace being purchased by News Corporation for $580 million, attracting massive media attention. By September, of the same year Facebook, who until this point had exclusively been a service provided for university students, expanded their user base to now include High School students, corporate networks and eventually open signup for everyone.

In Norway, during the early rise of social media, the educational sector primarily focused on digital spaces as having the potential for providing more easily accessible and cheaper curriculum. One of the bigger examples of this is that in 2006, barely a year after Facebook went worldwide, a joint effort by several municipal governments in Norway helped establishes The National Digital Learning Platform (abbreviated as NDLA)[1]. This project was hailed as a pioneering step at providing free to use teaching material for everyone. It should be mentioned that we are not saying ICT projects like NDLA are comparable to social media sites like Facebook, because the reality is that they are functionally very different sites. However, the point is that when we keep in mind that social media is really considered to have become international in 2005, it is interesting to see a Norway being so quick to recognize the benefits of using ICT in schools already in 2006. Furthermore, in a 2009 review of the NDLA project there is mentioned that they have noticed a growing interest in establishing an open sharing platform for teachers (Consulting, 2009). The plan as described in the report was to develop an online sharing platform where teacher could share resources amongst themselves. The 2009 report further notes that this new way of collaborating could have the potential for changing the way teachers work (Consulting, 2009). This initiate appears to not have been as big of an influencer as the report might have speculated. The only projects resembling the vision of an open sharing platform which NDLA is involved with today is the FYR project (https://fyr.ndla.no/) and deling.ndla.no. Although pilot projects with schools indicated an interest for such a sharing platform, none of these sites appear to have achieved the same level of engagement as NDLA.no. In a 2017 report made by NDLA it is noted that there was very little work done with both FYR and the other sharing platforms of NDLA, with development on FYR stopped being further worked on as of 31.12.2016 (NDLA, 2018).

We will not speculate on why NDLAs sharing initiative did not go as hoped. However, it was likely not a lack of interest amongst teachers to share knowledge with each other which led to this new envisioned sharing platform not making a big impact. To gauge the amount of interest amongst teachers for digital tools in this period we can use

[1] NDLA is included as an example here for a couple of reasons. First, it is a public project and therefore well documented. Secondly, it is an established public platform aimed at teachers, which provides a good baseline to compare and contrast numbers with.

visitors to NDLA as an example. The number of visitors to NDLA was in 2010: 1 431 017, 2011: 2 876 541, 2012: 4 799 181, 2013: 7 022 812, 2014: 8 200 000, 2015 10 000 000, 2016: 11 800 000, 2017: 12 400 000 (NDLA, n.d.). As we can see there is a sizable increase in the number of users from 2012-2013 and the exact reason for this is unclear. However, a likely influence is that this coincides with the introduction of digital skills on the Norwegian curriculum in 2012 (Udir, 2012). Furthermore, Norway was in this period also very focused on implementing digital tool in schools. A graph made the EU for the years 2011-2012 showed that Norway was on top in Europe when it came to implement ICT-infrastructure in schools.

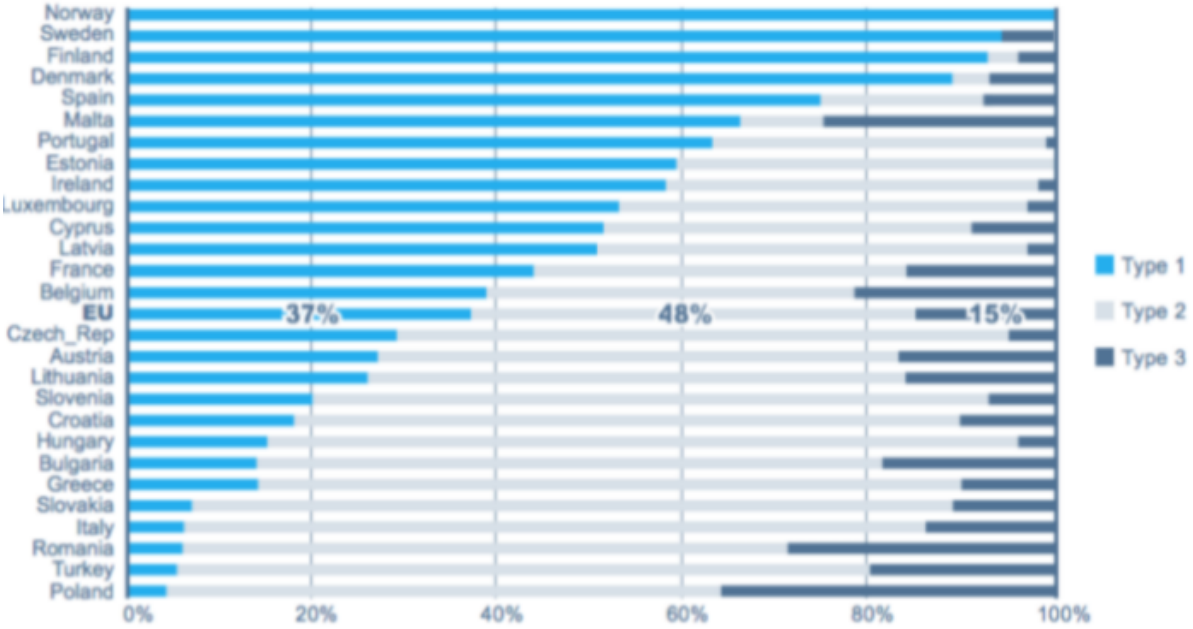

Figure 1 Percentage of students in 4th grade with access to digital tools in 2011-2012. From Statped (2018).

This gives us an indication of a growing effort and a potentially growing interest amongst teachers to use digital tools. There are also indications that this adaption of digital tools is largely motivated by political decision. Statped has complied a comparison of all the Nordic Countries on their adaption of ICT tools and resources in schools. Their finding indicate Norway had a clear plan to quickly introduce both ICT tools into schools, and to make it a requirement for teachers to become competent ICT users. Some of their findings is presented in table 1. The table was originally made by Statped but has been translated into English and stylistically altered to fit this thesis.

	Norway	Sweden	Denmark	Finland
Access to PC - /tablets in number	Norway is on top when it comes to number of computers per student	1,8 studens per pc/tablet in elementary school. 1,0 sutdents per pc/tablet in high school. A total of 236 000 tablets in primary school and 423 800 students. 28% of the students in "grunnskolen and 79% of those in High School has been given or lends a computer or tablet from the school (2015)	No numbers found	No numbers found
Political resolution for a 1:1 solution in municipal government	48% for «ungdomstrinnet» 29% for «mellomtrinnet» 25% for «barnetrinnet»	1:1 resolution for students and pc/tablets in High School education.	No political resolution found	No political resolution found
Students who daily/weekly use digital tools (in percentage)	8% of students use PC daily at their school. 52% in 9th grade use computers weekly 75% of 7th grade work with computers/tablets less than 3 hours a week during class sessions, 7% use ICT less than 9 hours a week (Center for ICT, 2013)	55% of 8th graders use a pc in classes at least once per week. 72% of the students on 11th grade stated they use computers at least once per week. (2011-2012)	70% of students on 8th grade use computers in classes at least once per week. 85% of 11th graders use computers at least once per week. (2011-2012)	53% of students on 8th grade use computers in classes at least once per week. 64% of 11th graders use computers at least once per week. (2011-2012
Coding/programming as courses in school	A pilot project initiated, with goals of becoming a permanent solution by 2019. In accordance with the governements digitalization strategy.	The government has newly requested the school system to come with suggestions to how digital competence and programming can additionally be baked into the curricula.	A pilot project with coding and programming has been initiated.	In the fall of 2016 Finland was one of the first EU countries to introduce algorithm thinking and programming as basic skills to be integrated into the core subjects, from first grade.
Digital requirements in teacher education	Skal kunne lære bort IKT i alle fag. Lærerutdanningene er opptatt av digital kompetanse og pedagogisk bruk av IKT i undervisningen, selv om det er noe uklart hva dette innebærer i praksis.	No available information found	No available information found	No available information found
Percentage of students who use computer/digital tools home	75% of Norwegian students use computers "every day"	No available information found	No available information found	No available information found

Table 1 Overview of digital tools and solutions across the schools in the Nordic Countries (Obtained from Statped, 2018, p. 10). Translated from Norwegian to English by thesis author.

The purpose of the timeline we have detailed so far is to establish the position Norwegian teachers were in to adapt social media as a platform for collaboration. The timeline so far indicates a peak at around 2013-2014 for teachers in Norway to start being exposed to both access to digital tool and requirements in education and curricula to teach ICT skills. It is therefore no surprise when we see that it is during this period that Facebook really starts getting used by teachers to form communities. In order to illustrate this, we have tried to chart all the Facebook groups for Norwegian Teachers with over 1000 members. Of the 52 groups found, all were created between the years 2009-2016, and the most active period when these groups were created were between 2012-2015.

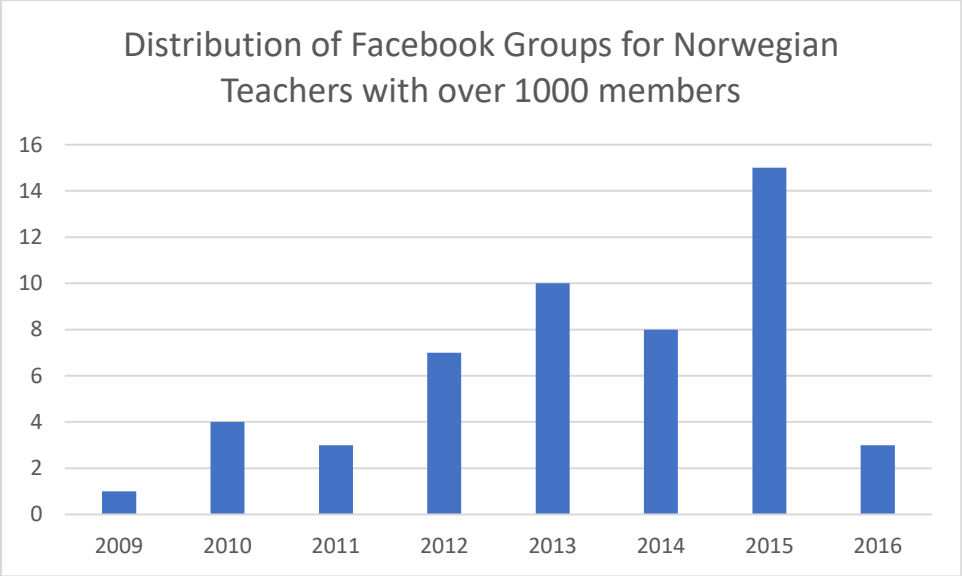

Figure 2 Graph of Facebook Groups for Norwegian teachers established between 2009-2016. X axis display creation date and Y axis display number of groups created. Graph based on data that is presented in Appendix 1.

Let us quickly summarize what this short history brief has told us so far. The Norwegian education sector was at the mid-2010s in a unique position when it came to adapting ICT tools. Not only were the country's schools very developed in terms of access to computers and tablets, it was also a high level of political interest in making ICT a skill both students and teachers should master. As the interest for more digitalization in the classroom has grown, so has the interest in using this technology for collaboration and communication. However, we are now seeing a shift in state of how teachers interact online. Public initiates like the FYR project and deling.NDLA.no was once envisioned a revolution in the way teachers could collaborate, only they never reached their potential and came to a halt after a few years. Instead, we are now seeing more informal communities online have picked up where these sharing initiatives left off. What separates these teachers' communities from earlier educational online spaces like NDLA, is *community*. Where previous solutions mainly focused on providing curated content for teachers to use, these new communities operate like what we can define as "Social Networking Sites", which we will further define later in the thesis.

As of April 2019, the Facebook groups presented in figure 2 have totally gathered 376 198 members. And even though this number does not account for duplicate memberships, it still indicate that at least in terms of interest, these communities can be considered as an influential factor amongst many teachers in Norway today. Although we in this paper are only focusing on ESL teachers in Norway, the interest in using social

media is a phenomenon clearly not limited to just ESL teaching. In fact, similar communities to the one being examined in this paper have been created for almost all parts of the educational sector in Norway, from math to arts and crafts. Examples of this are presented in the overview in appendix 1. Strangely however, in terms of research this field appears to be almost untouched in Norway. During work on this thesis, no research has been found on the topic of online teacher communities in Norway. This can perhaps be explained that this is a very recent phenomenon, as the timeline has shown. It is likely only a matter of time before these communities are recognized for their relevancy. As the numbers so far have shown, this is an adaption of technology we likely have only seen the tip of the iceberg.

What we have established so far is that a combination of political decisions, timing and an increased interest amongst teachers to use ICT laid the groundworks for why Norwegian teachers has adopted Social Media in such a big way. This combination of coincidences and events has spurred Norwegian teachers to adapt technology into their professional lives and make online participation become a rapidly growing part of how Norwegian teachers collaborate with each other. With this we conclude the background for what brought the topic of teacher's collaboration in online into relevancy. We will now move forward by looking at the conceptual foundation for this thesis.

1.2 Networking theory

The terms used by the different social media services are often derived from the real world. However, the connotations these terms evoke in a real-world setting are not necessarily indicative of their usage within the social network. Terms such as "friends", when used on Facebook, are somewhat misleading because what we consider to be friends in the real-world often involves a much closer relationship than the way the term is implied on Facebook (Dunbar, 2011). Instead, the way these terms should be viewed is that they in effect are referring to is an underlying system of connections being established online (Boyd & Ellison, 2007). However, what are these systems and how do they differ from what we know from the real world? This is something networking theories has been attempting to address and provide a framework for us to use.

George Siemens and Stephen Downes developed a theory for the digital age, called connectivism, denouncing boundaries of behaviorism, cognitivism, and constructivism (Duke, Harper, & Johnston, 2013). Connectivism is a learning theory that explains how internet technologies have created new opportunities for people to learn and share information across the World Wide Web and among themselves. The theory of connectivism is formed as a result of Siemens and Downes work with the development of MOOCs (Massive open online courses) and its ideas are often associated with this type of learning environment (Duke et al., 2013). This theory will serve two purposes in this paper. First, it helps provide a way to understand connections online without making confusing comparisons to the real-world. Secondly, because this paper seeks to examine how knowledge is shared, we therefore need to establish an understanding of how knowledge is created in an online network and what implications that might have when we analyze it. Again, the purpose of including this theory is to establish a foundation from which we can frame our understanding of the underlying systems social networking sites are based around.

1.2.1 Connectivism: A New Learning Theory

Connectivism explores some of the many questions relating to the impact new technologies have on learning processes. Distributed knowledge is an important principle

of this theory. Knowledge is originally thought of by the major schools of philosophy and history as having two different categories, quantitative and qualitative. Distributed knowledge is presented by Stephen Downes as adding a third major category, connective knowledge (Downes, 2005). Connective knowledge simply put, is the knowledge of the connection. For instance, if a group member asks for an activity to use in the classroom, and another member responds and persuades the original poster to use a proposed activity, an interaction has taken place and a connection has been established. The knowledge we observe is therefore not the activity which has been shared, but rather it is the observation that there is a connection between the two group members. The activity can be used to define what type of interaction we observe (Downes, 2005).

One of the primary concerns we need to address when examining learning on social networking sites is that knowledge on these platforms is not acquired in a linear manner. Therefore, unlike a traditional learning situation, where knowledge has a clear sender and receiver, networks operate on a principle of connections. One way of thinking about this is as a web-user describes it: "I store my knowledge in my friends" (Marhan, 2006, p. 2). This simple answer perfectly encompasses one of the core sentiments proposed by connectivism, that knowledge resides in the network rather than the individual. A social network is not a place where experiences are acted on, rather experience is something facilitated through learning of the experiences of others.

This is further complicated by the fact that these networks are adaptive, which entails they are constantly changing and evolving (Marhan, 2006, p. 3). As Marhan explains, "If the underlying conditions used to make decisions change, the decision itself is no longer as correct as it was at the time it was made" (2006, p. 213). This carries great implications for how we approach researching the sharing of knowledge in social networks. Because the way knowledge is interpreted by users is so rapidly changing, we cannot assume the content itself tells the whole story. Unlike constructivist thinking where learners gain knowledge through meaning making tasks, a social network is built around a chaotic web of knowledge (F. Bell, 2011, p. 101). The learners challenge is therefore more to identify patterns, rather than discern meaning. Interpreting these patterns is, to a large degree, dependent on our preexisting knowledge and beliefs. Because of this, our perception of a relationship between two events is more a matter of habits and customs than the actual observation itself. Interpreting a set of connections should, according to Downes (2005), be viewed as distinct from the actual interactions. Downes (2005) uses the example of conspiracy theories to illustrate this. Many of these theories are notorious for having no basis in the physical world. However, they can still be discussed and passed along as if they were real. And the conspiracy theory can be perceived by to be real by those who share them. Downes states that what connectivism brings to the table is the understanding of connections and the networks they form. And because we cannot experience everything our self, we instead gain these experiences through others. The participants in the network therefore become our "surrogate for knowledge" (Stephenson, 1998, p. 210).

Downes (2005) uses the term inference to explain how knowledge is manipulated through the user's selection of what they find to be the most important data. Inference is based on salience, where salience is stated as the importance or relevance of any given perception or property. Let us for instance say that you observe a green light. We can assume that the green light is the result of a blue and yellow light source being mixed together. However, this is not something we are likely to think of when presented with a green light. Most likely the light to us is just "green". Similarly, when sieving through posts and comments in an online, our mind is deciding how to interpret the knowledge based on a process of inference. We do not have the time to read everything and simply chose to focus on what at a glance seem to pique our interest.

In sum, connectivism is important for this thesis for several reasons. First, what we are examining is not the knowledge itself, but the connections between individuals in a network. The process of sharing creates a certain knowledge that in some instances can be examined as separate from the information itself that is being shared. The connection has a value that should be recognized. We also need to recognize that knowledge shared in a network is subject to manipulation. Inference is an example of such manipulation made by the user, but technology can also play a part in creating a certain type of learning. This implies that in research, we should focus on the underlying conditions facilitating user decisions, rather than the decisions themselves. The way this project seeks to address this is by examining patterns in behavior and triangulating that with user experience. We will conclude this chapter on connectivism and its role in this thesis by looking at the main principles of this theory and then explain how these principles can be applied when addressing knowledge sharing in a social media group. Table 2 presents the main principles of connectivism, as presented by Siemens (2004). The table further formulates what implications these principles have to this project and the topic of research on social media sites:

Principles of connectivism:	Implications for Research
Learning and knowledge rests in diversity of opinions.	Research into how knowledge is created should look for discussions and situations were different opinions might occur
Learning is a process of connecting specialized nodes or information sources.	Research should consider sources of information users connect with the network.
Learning may reside in non-human appliances.	Research should consider how the technical framework might affect or elicit learning
Capacity to know more is more critical than what is currently known.	Research should consider that acquiring new knowledge is more important than confirming what we already know.
Nurturing and maintaining connections is needed to facilitate continual learning.	Research should recognize the nurturing factors which plays in to sustain the network. They are vital in keeping the network running.
Ability to see connections between fields, ideas, and concepts is a core skill	Research should consider that the knowledge users gain from a network rely on the user's ability to see and understand the network of connections.
Currency (accurate, up-to-date knowledge) is the intent of all connectivism learning activities.	Research should try to keep as updated as possible on the state of the knowledge being shared. Networked knowledge quickly changes nature and researcher needs to be able to address this.
Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.	Research should recognize that when users are presented with the amount of information like you find in a network, only a small selection of this can be read. What information a user chose to read is therefore also vital in how they acquire knowledge.

Table 2 Overview of Principles of connectivism and their implication for the research process. Principles retrieved from Siemens (2004, p. 4).

The information presented in table 2 is used to inform and shape the methodological approach this project makes in terms of addressing knowledge in networks. However, it does not account for how teachers participate in these communities. To do this, we will refer to the theories on Communities of Practice.

1.3 Communities of Practice

Although teacher participation online is fairly a new field of study, there are many well established theories on how teachers' communities operate and function. Amongst these the theories of communities of practice (abbreviated as CoP), the theory conceptualized by Jean Lave and Etienne Wenger in their 1991 book *Situated Learning.* The community of practice theory is often regarded as amongst the most established theories on how teachers form professional communities. Wenger and Lave's fundamental theoretical assertation about professional development is that it occurs in mutual teaching processes within professional communities. They further embellish this idea by stating that learning is a fundamentally social phenomenon that is intrinsically connected with practical experiences and participation in dialogs about the practice. The term *Community of Practice* is presented as an essential part of this theory. This term is based on the idea that collective learning is a result of individuals coming together and forming a community where they can interact, share resources and reflect on a common field of interest. Similar for all these communities are that they form around a common interest, often something they work with and where the community helps develop members skills and knowledge as a collaborative effort. It is argued teachers have participated in CoPs for as long as the profession itself, and research has shown that strong social networks amongst teachers are necessary to spread and implement reform and changes in schools (Kelly & Antonio, 2016).

A CoP*,* according to Wegner and Lave (1991), consists of three fundamental dimensions*: the domain*, *community* and *practice*. These different dimensions also help us organize the way we think and analyze these communities. To explain this theory and place it in a context which can help answer how teachers participate in communities, we will now go through the different dimensions of CoPs as presented by Lave and Wenger. Additionally, we will exemplify the dimensions in a way that can help contextualize how we understand them in an online context. We can start by first looking at the *domain* dimension.

The *domain* dimension involves the common interest and identity that helps define a CoP. The communities are formed around something that members are passionate about and actively seek to contribute to. Being part of a CoP involve committing to the domain and having a shared competence that sets the group members apart from other people (Lave & Wenger, 1991). Furthermore, the ideas and competences, which is recognized within the group, are not necessarily recognized by outsiders and this makes the identity of the community members different from the rest of the world.

What has been described so far is the *inner domain*, which is the *domain* defined by the group itself. However, if we look at the domain dimension in an online setting, there is also suggested to be an *outside domain* which needs to be considered (Wenger, White, & Smith, 2009). In many CoPs, the activities members engage in are potentially subject to be shared outside the group itself. In fact, this project is an example of this. This project examines the interactions and activities of the group without the researcher taking a part in the community as an outsider. Although it can be argued that teachers have always had to be careful with what they discuss outside the collegium, the online reality makes this dilemma a lot more complicated. Discussions easily recorded and shared with just a few keypresses. Furthermore, it is not always easy to ensure who has access to what is being discussed in the group. For instance, a discussion in the break room ends when the people leave the room. However, a discussion online only needs one member to be careless with leaving their computer open or not logging out for this information to be compromised. Another issue is that the openness of many online

groups can cause conflicts of interests. This is relevant in this project where the community in question is so big that it can be difficult to keep track of who a member is.

To illustrate this, we can envision a hypothetical situation where one member of an online group strongly advocates the use of a specific learning theory as the best way to teach. In this envisioned situation, what would happen if there were several members of the group who supported this view and several who opposed it? How would the group identity function if several strongly opposing ideas on teaching were to operate within the same community? As Wenger & Lave (1991) points out, the CoP domain is a place for teachers to process, discuss and establish a common voice that can express the opinion the community has on a certain topic (Lave & Wenger, 1991). If individual teachers feel their opinion is drastically different from that of a large part of the community, the group might be ineffective. Would a drastic difference of opinions on certain key issues lead to a split in the definition of the community domain? Wenger et. al. (2009) suggests that this could be the case in some instances, depending on the group's reaction and how much the disagreement affect the group identity (E Wenger et al., 2009).

On the flip side of this, the openness that the online environment affords can also lead to a better dialog. Wenger et al., (2009) uses an example of an email list that was created where patients suffering from Myeloproliferative disorders (MPD). This email list allowed MPD sufferers to interact with other people suffering from the same illness and share information with each other. Eventually the list caught the attention of doctors who also subscribed to the list. As a result, the doctors gained more insight into the daily lives of their patients. This in turn led to a better dialog and more understanding between patients and doctors. The experiences from this email list can also be applied to the hypothetical example we used earlier of a group disagreement on learning theories. We can assume that a discussion of different learning theories also involves sharing the experience they have with the different approaches. This might help the group broaden its understanding on the topic. Therefore, the different perspectives can help the group construct a more clearly defined understanding of their stance and thereby strengthen the groups identity inward.

Now that we have explored how the domain dimension might be understood in this project, we can move on to look at the *community* dimension. Communities are not solely based on having a common job or interest; there also need to be interaction and learning present. The community concerns the characteristics around how members build relationships and learn from each other, a process essential to how communities are formed (Etienne Wenger, McDermott, & Snyder, 2002). To illustrate this, we can use an example of what I will refer to as "the teacher's toolbox". In the teacher profession, the resource of having a set of different activities and resources to use in the classroom is something often highly valued, especially by those new to the profession (Kelly et al., 2014). Beginning teachers find it very helpful to acquire tips from older colleagues who has built up and tested different activities which can be utilized in the classroom. This can be very viewed as having a very utilitarian benefit for the individual teachers. However, it also has a deeper founded benefit to the *community* dimension of the group.

For although teachers teach their classes independently, they are dependent on being able to share and build upon their "toolbox" with other teachers. Wenger et.al (2009) uses the fitting description that "Learning a practice is learning how to be a certain kind of person with all the experiential complexity this implies how to "live" knowledge, not just acquiring it in the abstract." (E Wenger et al., 2009, p. 7). Engaging in a community is an effective and often practically necessary way for teachers to better acquire "live" knowledge. This is because discussing and sharing experiences is essential factors both in figuring out what works and does not work, and to make the learning we get from doing something into something we own ourselves and not an abstract

knowledge. This process of learning and sharing forms the backbone of the community. However, as mentioned earlier, much of the learning process also has a practical and utilitarian purpose in providing resources and knowledge to become a better and more efficient professional. This is where we move towards looking at the final dimension, the *practice*.

The *practice* dimension, as the name implies, involves that part of a Community of Practice related to it being a group of practitioners of a craft or profession. Members of these types of communities are formed around the common goal of developing resources, tools, sharing stories and addressing issues. For the group to be a fully-fledged CoP, this process of sharing needs to be sustained over time and with intent (Etienne Wenger et al., 2002). This form of sharing can take many shapes and forms but to illustrate we can refer to the example Wenger and Lave uses of the teacher's "toolbox." A common issue beginning teachers face is that they have not yet amassed a collection of activities, plans etc., that can be used in the classroom. They might therefore have a harder time planning classes than experienced teachers who has had the time and opportunity to develop and try out different class that they know work and can reuse. The value of having such a "toolbox" to fall back on is not necessarily apparent to someone outside the teacher profession (Etienne Wenger et al., 2002). Therefore, the value of those individuals who are willing to share their class activities and tools they use in their class are appreciated to a much larger extent within the domain of a teacher CoP, because the members of that domain can recognize a value in what is being shared unlike the outside world. This helps motivate new members to take part in the community. In addition, it gives those who contribute to the community domain a feeling of having their skills and knowledge be recognized.

Furthermore, this is an area where technology can potentially have a big impact on the effectiveness of the community. Because from the perspective of it being a shared practice, the different resources and tips people share can be developed into a powerful collection. Being able to read what is shared in the community can therefore become a source of resources. This is further amplified by the little amount of effort required for one to engage with and acquire knowledge by participating in a community online. Furthermore, this process of collaboration online can be very complex and Wenger et. al (2009) notes several different activities in which online communities of practice can engage with:

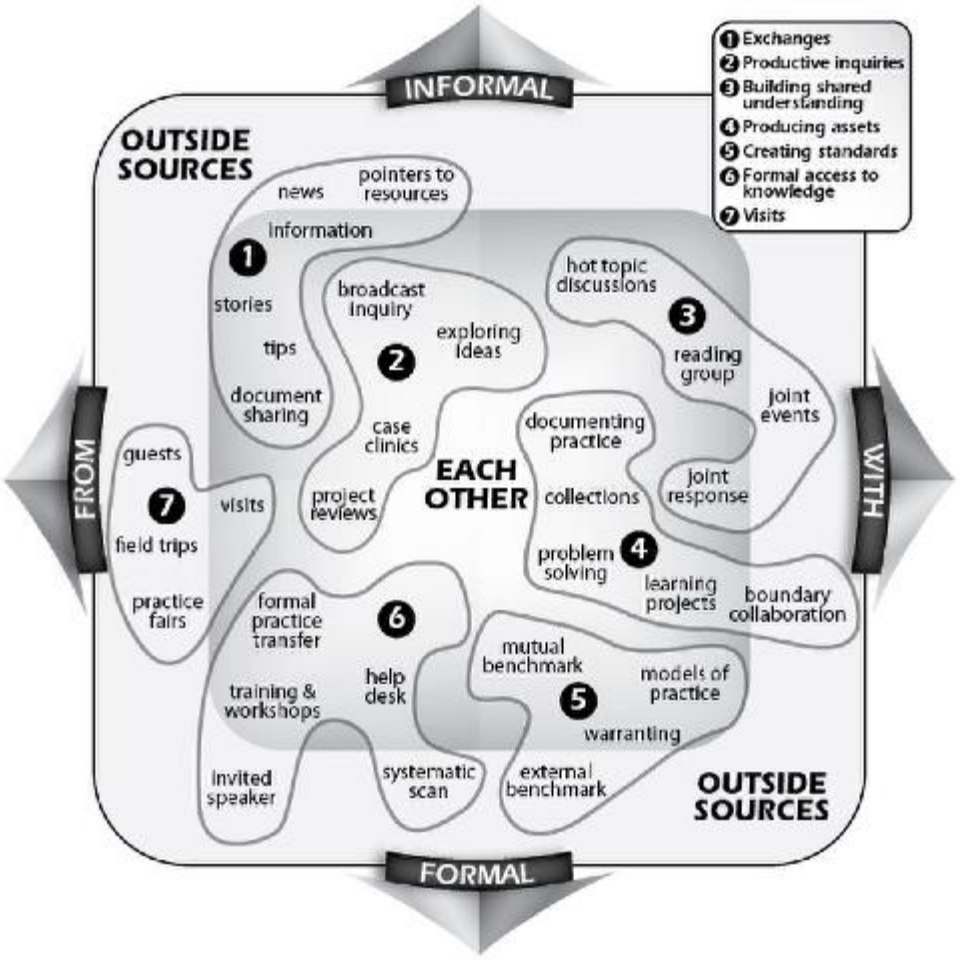

Figure 3 Model of how activities communities of practice can engage in. Retrieved from Wenger et al., 2009.

We will now summarize the importance Community of practice theory has in this paper. In this project the theories on CoPs as previously mentioned form a basis for how we understand how teachers participate in online communities. By identifying the different dimensions these types of communities consist of, we are also recognizing what separates them from just a common community. It is important to note that we are making the assumption, which is supported by research done by Barab, MaKinster, & Scheckler, 2003; Bernard, Weiss, & Abeles, 2018; Kelly & Antonio, 2016; Tseng & Kuo, 2014 and Wesely, 2013, that social media groups and communities online centered around professions can be defined under the definition of Communities of Practice according to the theoretical definition described by Wenger and Lave.

1.3.1 What are Online CoPs?

In a 2001 survey of current research on online CoPs Christopher Johnson (2001) found that CoPs had the following characteristics which set them apart from traditional organizations and learning situations:

1. There were different levels of competence that were present simultaneously in the CoPs.

2. A fluid movement of progression from novice to expert
3. The tasks and communication were perceived as authentic. This meant that acquiring learning and setting goals were a collaborative effort, the community possessed greater knowledge than the individual and the users trusted the environment and feel safe to participate there.

Some of the differences found between online and traditional CoP's were that networking technology used text-based communication, and therefore conformity to norms were reduced, whereas introverted users were more encouraged to share at an equal level as extroverts. In addition, the biggest difference was user withdrawal from the community, which was found to be much higher in online settings compared to traditional CoPs. Johnson found that the withdrawal could be reduced by enabling good facilitating techniques and provide scaffolding. Scaffolding was found to be especially needed in online settings because of the requirement of knowing how to use online communication technology (Johnson, 2001). However, even though differences were noted, the online communities were still found to conform to the definition of CoP.

2 Literature Review

2.1 What are Social Networking Sites?

The term "social media" and "social networks" are today colloquially used terms, both in the media and in everyday conversations. However, the terms are often used without a clear understanding of their meaning or exact definitions. A simple description of these sites is that they are spaces which allow users to create networks and interact with other people using profiles to represent themselves. A more comprehensive definition of social networks sites is given by Boyd & Ellison (2007, p. 211) as:

> web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.

Boyd & Ellison (2017) stress that these connections can vary between different sites and social networks. Furthermore, they specify that researchers should be careful with use of the term "social network site" to describe this phenomenon, as it can be confusing to reader because it is also a term that appears in public discourse.

The term "networking" is also problematic because of what it emphasizes and the scope of the term. ''Networking'' puts an emphasis on starting new connections, often between strangers. While the case can be made that networking of this kind takes place on social networking sites, it is not what most users use them for. Furthermore, networking is not a good example of what differentiates these sites from other forms of digital communication. What makes social network sites unique, according to Boyd & Ellison, is "not that they allow individuals to meet strangers, but rather that they enable users to articulate and make visible their social networks" (Boyd & Ellison, 2007, p. 211). In addition, these sites are observed to facilitate so called "bottom up" community development. This involves membership being voluntary and the reputation of users are gained by earning the trust of other members. The goals and purposes of these communities are often defined by the members themselves (Marhan, 2006). Boyd & Ellison point out that this feature can have the result of making new connections between strangers, but that it is often an unintended side-effect rather than a goal. Instead, these connections are made as a result of ''latent ties'' (Haythornthwaite (2005) in Boyd & Ellison, 2007), i.e. that the users already share some offline connection. On many of the larger social networking sites, users are not necessarily ''networking'' or looking to meet new people; instead, they are primarily communicating with people who are already a part of their extended social network. To emphasize the function of social network as a critical organizing feature of these sites, we label them "social network sites".

2.2 Teacher Online Participation and Knowledge Sharing

The literature on how teachers collaborate in online settings is wide ranging and covers many topics beyond the scope of this paper. This paper therefore choses to focus on a few areas that are identified by CoP theories to be especially important for teacher's professional development, namely roles of participation and the sharing of knowledge.

2.2.1 Knowledge Sharing

The sharing of knowledge is of course an important pillar in social networking. Online platforms are built around people coming together with the use of online communication technology. However, even though knowledge sharing might seem like a very straight forward concept, it quickly becomes more complicated when we start to break it down. When we talk about knowledge sharing there are two terms we need to distinguish first, that is information and knowledge. Mark Sharrat & Abel Usoro (2003) explains that information is informative and tells us something. Information is therefore data from which meaning can be derived. Knowledge on the other hand is derived from interpretation of information, i.e., interpretation of meaning. This is a definition echoing the principles of connectivism about learning being a process of shifting perspectives. What knowledge one person gains from interpretation can be very different depending on the individual. This implies knowledge is internal and does not exist outside the individual. This of courses poses a crucial question, what is sharing knowledge if it does not exist externally?

Sharrat and Usoro (2003) address this by defining sharing at its most basic form as the process of information being given by one party and received by another. This process is facilitated by an exchange which requires information to pass between a source and a recipient. However, sharing *knowledge* involves giving information that is framed by the preexisting knowledge of the recipient. In other words, when we talk about sharing knowledge, we are not referring to the information being passed along, but the interpretation of said information. Sharrat & Usoro defines knowledge as "an intangible resource that exists within the mind of the individual" (Sharratt & Usoro, 2003, p. 188). This is important in online research, because like explained under the connectivism framework, a piece of information cannot be expected to tell us everything about the knowledge derived from it. Instead we need to consider the context in which the information is framed.

We have explained what knowledge sharing is and how it is defined in an online context. But what makes teachers take the step to go online and share something? Keh Foon Hew and Noriko Hara (2007) studied the reasons teachers share knowledge in online communities and found four major motivators:

- Collectivism: Teachers share to help other community members
- Reciprocity: Teachers wish to share because they want to reciprocate the help they have gained from others and give back to the community
- Personal gain: By sharing knowledge the teachers gains more knowledge themselves
- Altruism: Teachers are empathetic to other teachers' struggles and would like to support them by sharing suggestions

What these motivators show us is that the sharing of knowledge amongst teachers in online settings is both motivated by individualistic and community concerns. We can use these motivations a good foundation for understating why teachers chose to share knowledge with each other. However, more importantly is that the finding that teacher share to help others and to reciprocate help also shows that knowledge sharing is integral in the process of participating in the community. This gives us reason to consider community participation and knowledge sharing as connected.

2.2.2 Participant roles in online networks

Chang, Cheng, Deng, & Chan (2007) identify the basic structure of a structured network learning society to consist of "participants, shared visions, devices, services, rules, relations, manners, learning domains, learning goals and learning activities." (Yeh, 2010, p. 141). For this structure to function, an online community needs its participants to assume roles that contribute towards a healthy community. A role is defined as "the set of behaviors expected of a person possessing a certain social status" (Chang et al. (2007) in Yeh, 2010, p. 141). In a study by Lin, F., Lin, S., & Huang, T. (2007), which compared inferior to superior online groups, inferior groups were found to consist of participants interested in receiving and giving information and opinions. The superior groups however, had prominent idea providers and integrators. The researchers noted the need for "thought leaders" to establish trust in the community (Yeh, 2010, p. 141). Research done by Wang, Anstadt, Goldman, & Mary (2014) further emphasizes the importance of facilitators in these communities. The researchers found that facilitation on Facebook include:

- Inspiring active involvement of all members and shaping of their useful roles, (2) attending to the explicit group process,
- Encouraging group communication,
- Summarizing and clarifying content of discussion,
- Acknowledging and connecting thoughts and feelings expressed
- Organizing the structure and format of the group.

Peter Evans (2015) studied a sample of discussion events held on Twitter. The research examined the interplay of personal learning and collaboration. Social network analysis showed small numbers of participants had important roles in connecting the individual participants together and form cohesive communities. Evans found that these facilitators could be observed in different subgroups of discussions. Furthermore, by utilizing Reply and Retweet functions in Twitter, these facilitators were able to reach across many different other groups of participants. Although Twitter is a different platform than Facebook, there are still some interesting aspects we can take from this study. Firstly, are the findings indication that facilitators do not have to reside in the community itself in order to exert influence. By utilizing technological tools and the principle of network learning, a facilitator can apply their knowledge through other users. On Twitter this was done by having their tweets shared through the functions retweet and reply. Although these exact functions do not exist on Facebook, the function of linking to other content both inside and outside the platform is. Evans (2015) further argues that the facilitation of these Twitter events was distributed between the technologies used and the participants in the learning community. The conclusion was that research should not focus on the individual control of learning through an online learning environment. Instead notion of distributed facilitation suggests learning and identity is framed by social, participative and on-going performances of what is legitimate and illegitimate professional learning and practice. The main idea to take from this research is that facilitators are important in online professional communities and they can provide knowledge both directly and indirectly through other users with the help of technology.

While facilitators have been found to be important for the community, the other roles users take when participating in these communities have also been found to be important factors in what knowledge they acquire and how they acquire it. In his study of teacher's engagement in online spaces, Robson (2018) claimed much of the research done on online spaces for teachers focus on instrumental discourses, technical design,

cost and benefits. He further expressed research need to move beyond this approach and therefore wants to focus on analyzing the social context of online engagement. Robson (2018) found two distinct roles participants took in engagements, passive and active. Active participation was found to leave traces and artifacts that was observable by the researchers. Active participation is therefore argued to be preferred by researchers, because they provide tangible trace evidence. However, the issue arises when the data is brought into analysis and this form of activity is presented as the sole factor for the professional development that is present. Passive activity by contrast is less explicit due to it being more a process of internalizing. Robson found that many users did not actively participate themselves, but rather used social networking sites as a way of reading and internalizing material and information posted by other users (Robson, 2018). Although not as apparent in the data material, the passive form of engagement also provided users with a professional development that is highly relevant to include when looking at how these groups develop professional identities. This is an important point to take note of as research from Ling et al. (2005) shows that 4–10% of members in online communities produce more than 50–80% of the messages and resources shared, whereas others remain inactive (Ling et al., 2005). Robson (2018) further developed a theoretical framework for conceptualizing teachers' professional identity. Robson's methodology and analytical framework is highly relevant to help guide the research analysis on passive participation. In addition, Robson's analysis of interactions online is relevant to consider because they contradict what a lot of other researchers have concluded, especially regarding how online spaces provides professional development.

Bernard, C. F., Weiss, L., & Abeles, H. (2018) conducted a study on a Facebook group for music teachers which examined how the members of this group participated and promoted learning in online spaces. The study used a mixed-method approach consisting of analyzing group posts according to a quantitative Index of Interaction and a qualitative analysis according to patterns of comments. According to Bernard et al., 2018, the anonymity of being a passive participant allows for a safe environment in which members can observe and take note of information being shared by others (Bernard et al., 2018, p. 91). While the asynchronous and quick natured interactions online make it ideal for teachers using it for professional development, the lack of face-to-face interpersonal interactions creates an opportunity for members to withdraw from the conversation at any point. This was found to potentially inhibiting them from being challenged and therefore receive less learning. The takeaway from this is again that passive participation should not be underestimated when it comes to knowledge creation and professional development. Rather than view passive participants as mere spectators, research need to consider these forms of participation as another method to elicit knowledge from the community. Let us now move on to look more specifically at how teachers participate in these communities.

2.2.3 Why Teacher Participate in Online Spaces

One of the key questions that we need to explore before talking about how teachers participate in online spaces, is why they do this? Jung Hur and Thomas Brush (2009) examined why teachers want to participate in online spaces. The purpose of this study was to examine reasons for teacher participation in online communities of K–12 teachers. The authors interviewed 23 teachers from three self-generated online communities and analyzed more than 2,000 postings in those communities.

Their results suggested that many teachers participate in the communities to share both negative and positive emotions related to teaching. Sharing appears to help

teachers receive emotional support and a variety of solutions to issues related to teaching. It was also found that teachers participated in the communities because they felt online communities enabled them to not only share issues that they might not be able to share in their local school but also to communicate with teachers who have a wide range of experiences. Consequently, it was also found that workplace isolation encourages participation in online communities, because online there are no physical limits and teachers can therefore interact across workplaces.

Hur and Brush (2009) further found that teachers participate in the communities because they can get access to many different ideas and experiences that may be beneficial for them to use in their own teaching. Furthermore, by reviewing discussions where teachers shared their own teaching ideas helped them in creating new lesson activities and reflect on their teaching practices. From these results the researchers developed five reasons for participation: (a) *sharing emotions*, (b) *utilizing the advantages of online environments*, (c) *combating teacher isolation*, (d) *exploring ideas*, and (e) *experiencing a sense of camaraderie* (Hur & Brush, 2009, p. 279). These five reasons are closely linked to and based on Wenger and Lave's community of practice theory. The relationship between these five reasons is explained in Figure 4.

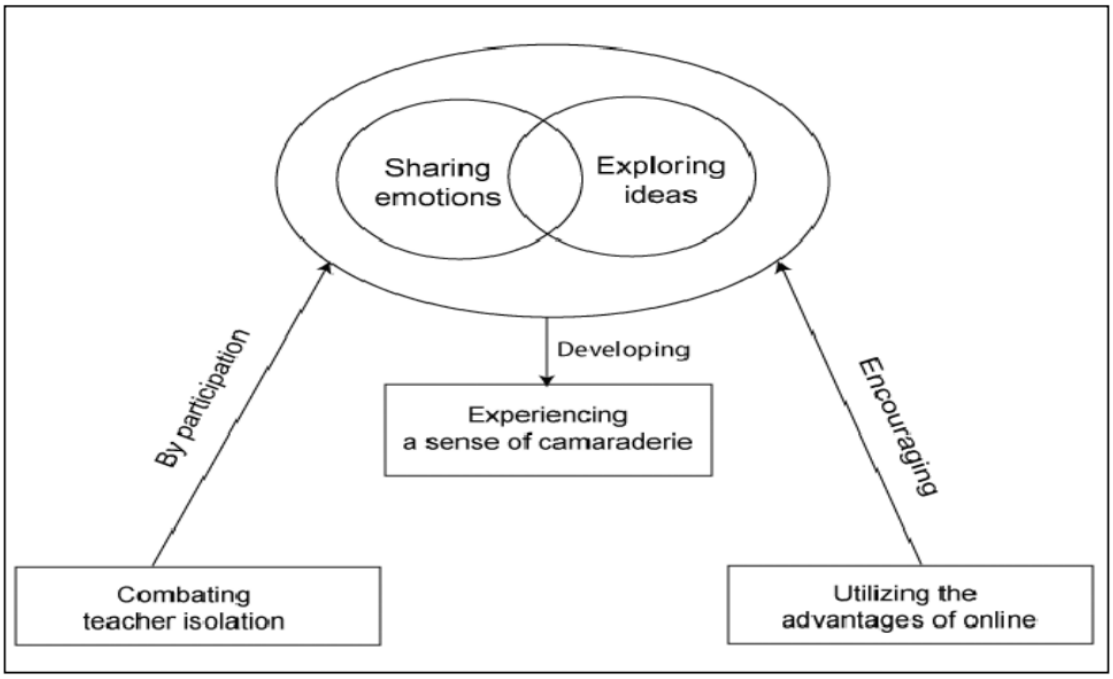

Figure 4 Relationship between the five reasons for participation, from Hur & Brush (2009, p. 298).

By feeling isolated in their profession, teachers are drawn to participate in a community where they can share emotions and explore ideas with their peers. This is further encouraged by the advantage and ease of access provided by online technology. When participating in these communities, the teachers begin developing and experience a sense of camaraderie, further enforcing their wish to participate in the group. However, one concern to be had with this motivation for participating is that the sense of comradery can possibly make the teachers more prone to risk-taking when it comes to sharing private information. Joshua Fogel and Elham Nehmad (2009) studied people's attitude towards risk taking, trust and privacy concerns on social networks. What they

found was that especially on Facebook, people with profiles on social networking websites had greater risk-taking attitudes than those who did not. The researchers concluded that risk taking and privacy concerns are potentially relevant and important concerns on social media.

The reasons for participation found by Hur & Brush provide a good understating for *why* teachers participate. Although, they do not necessarily tell us *how* teacher participate, which is what we will cover next.

2.2.4 Connection Between Online Participation and Professional Development

Fan-Chuan Tseng & Feng-Yang Kuo (2014) collected self-reported knowledge-sharing behaviors from 321 participants of SCTNet, one the largest online communities for teachers in Taiwan. The study examines the role of social capital and cognition amongst teachers when interacting online.

Tseng & Kuo found that there were both individualistic and community-based motivation at the core of teachers joining these communities. It was found that teachers seek online communities as a way of improving their professional performance and better their career achievement (Tseng & Kuo, 2014). Furthermore, the researchers also found that there were altruistic motives of feeling a moral concern for others and wanting to contribute care and support to the community. Additionally, the greater the influence participants perceive to have in giving instrumental and emotional support to other users, the more they wished to contribute to the online network. Because of this, when teachers perceive that they are making a difference in the community, they are also encouraged to participate more actively. The researchers concluded that teacher membership in online professional CoPs "fosters a pro-social attitude that heightens their willingness to share useful resources and solve other members problems, both emotionally and instrumentally" (Tseng & Kuo, 2014, p. 1).

In their review article of five studies done on informal and formal networks for teachers, Maria Macià & Iolanda García (2016) examined several different methodological and theoretical frameworks used to examine online CoPs for teachers. The article puts an emphasis on theories relating to communities of practice and connectivism. They found that although research indicates participation in online communities has a positive effect on professional development, there has not been made any findings suggesting this necessarily translates to changes in classroom practices (Macià & García, 2016, p. 304). However, Macià & García noted that these communities are still in the early stages of development, and there is a possibility they will exert a greater influence on teachers practice as teacher become more accustomed to using them (Macià & García, 2016, p. 304).

Macià & García also found that professional development was much more effective if teachers can combine the knowledge they gain in online CoPs with offline forms of traditional professional collaboration. Combining offline and online learning is found to be a way for teachers to contextualize what they learn (Macià & García, 2016, p. 304). If a teacher uses online social networking sites to obtain different ideas for what to use in the classroom, they can take the tips they get and for instance discuss them with other colleagues at their school. Macià and García base their assertion on the findings which indicate that more traditional forms of collaboration are more effective than online social networking sites to facilitate reflection and discussion (Macià & García, 2016, pp. 300–304). However, as noted previously, this form of collaboration is still new to educators and is therefore subject to possibly change over time. What we can take from this review

is that the knowledge and learning found in online professional communities has not proven to have a real-world impact. Furthermore, the review implies more research is still needed on teacher's application of online learning in their own teaching practice.

The approach to research on professional development in online spaces is also something covered in the literature. Dede, C., Jass Ketelhut, D., Whitehouse, P., Breit, L., & McCloskey, E. M. (2008) in their review of research on online teacher professional development, focused on types of knowledge that the author argues are missing or lacking in the current literature on improving online professional development spaces and on assessment of such space's strengths and limitations. This review study presents a clear purpose that it wanted to define the perception researchers had on the development of online spaces. The researchers therefore suggested best practice approaches for how research should approach professional development in online spaces. Dede, et al. (2008) were critical of the way much of the research on online spaces measured professional development. For instance, the researchers questioned the extensive use of self-reports, noting that while important, it only offered one kind of insight on practice development. The researchers also specified that exclusively focusing on objective measures like standardized tests would limit our understanding of the effect of professional development. It was therefore suggested that research should aim to combine several methods to provide both objective and qualitative understandings.

Jennifer Duncan-Howell (2010) conducted a study on three online communities for teachers. It explored the nature of online community membership and offered some conclusions regarding their potential as a source of professional learning for teachers. They noted that online communities are being increasingly used by teachers for professional support, guidance and inspiration. One of the more significant findings in this study was that 87 percent of participants considered online communities to provide meaningful forms of professional development (Duncan-Howell, 2010, p. 338). Participants also noted time and the ability to participate at one's own schedule was a big advantage for professional development online. The immediacy of responses and ask-specifics questions related to professional topics made participants perceived learning as authentic. Furthermore, being able to have a dialog with peers outside one's own immediate work environment allowed teachers to have a wider set of experience to draw on.

The last point we will look at when it comes to professional development is the importance cultural values and beliefs have for the result and benefit of teacher development. Beatrice Avalos (2011) reviewed 10 years of research on professional development in teaching and teacher education. The review provides an overview of articles featuring different geographical regions, different research and development procedures. Many articles were thematically organized in terms of their main emphasis and nine articles were selected as being particularly illustrative of these thematic areas. Although this review did not focus on online spaces, it is a very comprehensive review of publications on the topic of teacher professional development. However, note that the article is mostly relevant for this paper in the context of addressing professional development specifically. One of the more relevant findings in the review was a comparison done between to two studies, one based in Canada and one in Namibia. It was noted that in both cases, so called "negative data", i.e., cases were participants failed to be aware of their own shortcomings, contributed to participants not developing professionally. Both these studies explained this data as being caused by the gap between existing beliefs and suggested practice not being recognized by the participant. The Canadian study stated: ""teachers who underrate their performance or have low self-efficacy are less likely to implement data" (Ross & Bruce, 2007, p.155 in Avalos, 2011, p.

15). This indicate that in terms of professional development we must also consider the cultural context in which learning occurs.

2.2.5 Connection Between Teacher Online Participation and Social Support

Social support is a term which can be summarized as "interpersonal relations with elements of affect, aid and affirmation" (Kelly & Antonio, 2016, p. 139). To help establish a more definitive definition of the different types of social support teachers achieve in online CoP we can further subdivide social support into different types of support. Kelly and Antonio (2016) examined how online groups provide peer support to beginning teachers. The researchers claim support for beginning teachers is a major challenge in the teacher profession today and that online networks presents a possible solution to this issue. The study was conducted on a large, open group for teachers over a 12-week period and presented six ways in which teachers support each other in online groups. The study utilized a mixed method approach with a focus on dialog. The researchers draw distinction between pragmatic and reflective dialog, making it clear that these serve separate functions although other researchers have claimed otherwise. Using Kelly and Antonio (2016) classifications of social support we can categorize social support as consisting of *emotional*, *appraisal*, *instrumental* and *informational support*.

Emotional support encompasses supportive behavior regarding esteem, affect, trust, concern and listening. *Appraisal support* consists of; affirmation, feedback and social comparison. *Informational support* is made shown through; advice, suggestion, directives and information. And finally, instrumental support is shown through; aid in kind, money, labor and time (Kelly & Antonio, 2016, p. 139). This article lends support to the ideas described by Lave & Wenger (1991), that CoPs are important for teachers due to it providing many different types of professional support and this support is essential both for professional development and teachers emotional well-being.

Trepte, S., Dienlin, T., & Reinecke, L. (2015) conducted a longitudinal study over 2 years on how social support is received in social networking sites and how social support is related to life satisfaction. In their study, Trepte et al. (2015, pp. 75) defined social support as:

> Social support is a multifaceted, tripartite construct. It is defined as a behavior involving human interaction through which individuals express, perceive, and receive emotional concern, instrumental aid, or information.

The study also made findings suggesting that online support has advantages that make it better suited than offline settings at providing informational support. The availability of information was noted as a major benefit in this regard, compared to offline setting. The study also addressed the question of how the effectiveness of social support is perceived in online and offline settings. The results showed that both online and offline environments positively influenced the satisfaction users had with social support. The article further claimed this is the first study to provide longitude data on the causal structure of social support and satisfaction with social support. It was noted that users mostly expect a certain kind of informational and instrumental support in online settings. Whereas deep emotional support, intimacy and empathy is expected to be found in other contexts than the online one.

The article further elaborates that online environments elicit mostly informational support, whereas the environment lacks the necessary potential to provide the same emotional support found in offline settings. This was linked with the observation that

connections in social networks have tendency to be short lived and often collapse after a brief period. Furthermore, connections online are more diverse. Although diversification can be good for information discourses, it can also lead to users perceiving they have less potential of gaining social and emotional support because other users might not share their values. This diversity of connections was also shown to be hindrance for intimacy. Researchers noted that it was hard for users to experience close social bonds when some interactions were close, and others hardly known. The findings in the article suggest that emotional support received in online settings are complementary to support received in offline settings. However, it is also noted that users are reluctant to request emotional support in online setting because they could be perceived as "needy". (Trepte, Dienlin, & Reinecke, 2015, p. 97).

We will now look closer at the claim that participants in online communities are more inclined to seek out and give answers to quick and specific inquiries, rather than bigger abstract questions. First thing to note is that there are also conflicting opinions on how to read these types of online exchanges and what conclusions to draw from analyzing the user's intentions. For instance, we saw earlier in the review that Macià & García (2016) noted online engagement offered teachers mostly informational support and offered little depth learning. On the other hand, Leah Zuidema (2012) conducted a study on how inquiry in online teacher networks can be understood. In this study, Zuidema noted that although many of the posts in the online collaboration network she researched at first appeared as users only looking for readymade solutions, a further recursive analysis of the posts revealed underlying inquiries. This was a case study of 36 teachers participating in informal interviews with the researchers using integrated analysis of the participants messages and actions when interacting with each other. Zuidema pointed out that when the teachers were asking for help, she noted that the inquiry carried an implicit intention to gain "a frame of reference" (2012, p. 138). Based on these inquiries, Zuidema therefore argued that the users was in fact not just looking for answers, but rather researching ideas and possibilities that they could use to form an inquiry stance of their own (138). The conclusion made in the study was that researchers should be careful not disregard short question-and-answer exchanges as merely superficial information exchanges (Zuidema, 2012).

2.3 Research Questions

The first theme covered by the research we have looked at in this literature review is how knowledge is shared in online CoPs for teachers. Research to-date has shown that knowledge shared online is perceived as authentic due to immediacy of responses and directness in which questions can be asked. Teachers can acquire knowledge and develop professional identities both by actively participating in discourse and by passively observing. Most teachers who participate online are found to be passive observers, and only a minority participate in actual discussions and share resources. However, even though passive participation is the most common way of participating, the community still depends on users to assume the role of facilitators and idea providers to establish trust and create meaningful discourses which advance the community and its identity. The facilitators can provide knowledge both directly in discourses, and indirectly through other users with the use of sharing technology. It is also noted that much of the content shared online is framed by context, which is what creates knowledge. Research design needs to address context in order to understand full extent of meaning.

Teachers' engagement in online spaces has also been shown to be increasing. It has further been established that social networking sites for teacher professionals can be

defined as Communities of Practice in accordance to the definition given by Wenger & Lave (1999). Current research findings suggest that peer-to-peer interactions are important for teachers' professional learning and development, and that online spaces are good facilitators for this type of interactions. When participating in online CoPs, users have been documented to gain support both in the forms of emotional, appraisal, instrumental and informational support. However, support is found to be more informational, and lesser degree emotional, appraisal, instrumental. Furthermore, it has been found that users are less likely to request emotional support in online settings. By participating in online communities, teachers experience meaningful form of professional development. However, cultural context has been found to be important in professional development and it can potentially limit a person's ability to recognize gap between existing belief and suggested practice.

Although research on teacher participation in CoPs is growing, to date little research in this area has been conducted in Norway. Therefore, the purpose of this study is to identify and describe the characteristics and ways in which Norwegian ESL Teachers interact and share knowledge on Facebook. Secondly, this thesis also aims to answer two specific question. As we have seen, sharing experiences has been noted to have an important role in why teachers participate online and how they gain professional development in online CoPs. However, little has been said about exactly *how* teacher share experiences. Especially of note here is how teachers share experiences involving students, where the requirement of confidentiality might make sharing this type of knowledge difficult. The second question come from the difference in opinions that has been noted in research where some findings indicate that teachers go online to acquire information (Macià & García, 2016), whereas other researchers conclude that it is a process of constructing ideal identities (Robson, 2018; Zuidema, 2012). Moreover, most of the research to-date has relied on self-reporting as the sole data form. As noted by earlier research, a combination of methods is found to provide a more comprehensive understanding of the often-confusing online environment. We will therefore attempt to address this gap in this paper by using a multimethod approach to answer the question the research question: Does ESL teacher participation on Facebook contribute to their development of new skills or fostered reflection on their practice?

3 Method

3.1 Ethnographic Research

This research project employed digital ethnography as the approach to research a digital space. Ethnography as a methodology is built around studying cultures and communities (Crotty, 1998). Defining ethnography can be difficult as it is dependent on the critical background and interest of the researcher (Horst et al., 2016). For this reason, many scholars use open definitions to define ethnography (Horst et al., 2016, p. 3). Karen O'Reilly (2005) defines ethnography as: "iterative–inductive research (that evolves in design through the study), drawing on a family of methods … that acknowledges the role of theory as well as the researcher's own role and that views humans as part object/part subject" (2005, p. 2).

However, when the ethnographic approach becomes digital, O'Reilly's definition changes somewhat as a result of the need to acknowledge how the digital media become a part of what, in traditional ethnography, involves "direct and sustained contact with human agents, within the context of their daily lives (and cultures" (O'Reilly, 2005, p. 3). Horst et al. (2016) notes that this is important because we need to establish how digital ethnographic research can accomplish the equivalent of: "watching what happens, listening to what is said, asking questions'; and where we might want to do more than "producing a richly written account that respects the irreducibility of human experience"" (Horst et al., 2016, p. 3). Social media sites are in many ways an open playground for ethnographic studies, with interactions open to record and where the researcher can view the goings on from the same perspective as all other members of that community.

Furthermore, digital ethnography is also quickly becoming an area of research of its own (Horst et al., 2016). What separates the digital ethnographer from the traditional definition is that "In digital ethnography, we are often in mediated contact with participants rather than in direct presence" (Horst et al., 2016, p. 3). What remains the same is that ethnography is an interpretive methodology, and so the research needs to be grounded in theory and not least be transparent in its perspective for any findings to be found valid (Postholm, 2005, pp. 177–178).

3.2 Research Context

The community being examined in this project is a Facebook group for Norwegian ESL teachers called "Engelsklærere". The group was created in 2014. At the time of writing, the group had 10 861 members and was therefore the largest community of its kind for Norwegian ESL teachers. The group's description read as follows:

> Group for English teachers in elementary, junior high, high school and possibly other arenas. The purpose of this group is to create a resource for anyone who teaches English. Everyone else with an interest in the subject is also most welcome. Hope we can ask questions, share resources, links, arrangements, joys and maybe some frustration.

The group operates in an asynchronous form. Or in other words, members have direct access to participate without needing to schedule time or have their messages

preapproved before posting. There are three administrators who monitor and sometimes interact with the group. The asynchronous nature of the group means some posts and discussions are subject to be closed down or deleted by administrators after being posted.

Several methods have been used to study how Norwegian ESL teachers participate and share knowledge in this group. Observation serves as the main method for collecting data, with much of the data collected being categorized and analyzed using a content analysis. In addition, two users of the group have been interviewed in using semi-structured interviews in order to triangulate methods and examine the community through a lens of a non-member. This allowed the research to find out how actual members use the group to reflect on their feelings and opinions. We will now move on to a more in-depth presentation of each method used and some of the ethical considerations made during the work on this project.

3.3 Ethical Considerations

Before elaborating on the specific methods used in the research study, we should establish the ethical considerations which have largely shaped many of the decisions made during the research process. During the work on this project, the subject of ethical research has been of great concern. When studying a large online community like the one in this study, acquiring informed consent becomes a major issue. This is because collecting a consent from the 10 000+ members in the online community is practically impossible. Therefore, the central question is how can we conduct research on these communities while remaining ethical?

Willis (2019) suggest there are two possible instances where the researchers can refrain from obtaining informed consent. First, if the data is treated textually. Data collected from a social network can in some instances be treated as a public record. Wilkinson and Thelwall (2010) suggest that asking for consent when conducting document research can risk turning the research into human subject research. This is because by reaching out to individual informants, researchers are also making them active participants in the research, thereby making the need for consent a necessity (Wilkinson & Thelwall, 2010). Wilkinson and Thelwall (2010) draw a parallel to instances where this same principle can apply to private documents, such as medical records.

The second instance where the need to obtain consents can be waived, according to Willis (2019), is observation of human subjects in public spaces (Willis, 2017). The Economic and Social Research Council (ESRC) recognizes that informed consent is impractical and meaningless when research involves observation of crowd behavior (Willis, 2017, p. 3). They do point out that waiving consent should not be taken lightly and that not acquiring consent should only be permitted when the research "'may provide unique forms of evidence or where overt observation might alter the phenomenon being studied" (ESRC, 2015, p. 31). The British Psychological Society also suggest that informed consent can be omitted when those observed can be expected to be observed by strangers (Willis, 2017).

A common agreement when it comes to not obtaining consent is that the human activity must be *public.* This is another complicated subject when it comes to internet research because it is unclear what public activity online is. Many researchers have noted the blurred lines between public and private activity online. Waskul and Douglass refer to online activity as being "publicly-private and privately-public" at the same time (Waskul, 1996, p. 131). These blurred lines make it difficult to know what is private and what is public information online. Willis (2019) applies two criteria to determine if information is

considered public, technical privacy and user expected privacy. This project applies the same method used by Willis (2019) to determine if information is public or private.

The technical privacy of the group is somewhat confusing. Willis (2019) sets two criteria for determining if information online can be classified as public. The first of these criteria is the technical publicness of the information, i.e., what limitations are set in place by the service itself (Facebook in this case) to ensure the information is private. The second criterion to consider is whether there is a reasonable expectation amongst the users that the information they share is private. We will now look at how these criteria were considered in this project, starting with the technical publicness of the Facebook group.

On the one hand, the Facebook group "Engelsklærere" is closed to the public and the only way to become a member is by applying for membership. When applying to the group, your application is reviewed by the group administrators and either approved or rejected. This means there is some measures in place which indicate that information is not publicly available. However, in the terms of service, Facebook reserves the right to use information about their users (Willis, 2017). This includes users' activity in a group. Furthermore, Facebook reserves the right to share this information with external third-party entities, so long as the personally identifying information has been removed. This information can for instance be used for advertisement and research purposes. This requisite means that any information shared on Facebook only have a limited level of technical privacy. Furthermore, we need to recognize the size of the group in question. With 10 000+ members, "Engelsklærere" has about the same population as a small city in Norway. Given the large size of the community, it is reasonable to assume the members would treat the group as a semi-public place. Based both on the fact that Facebook themselves reserves the right to share information in the group, and the large size of the community it was concluded that on a technical level the group could be considered public.

The last criterion to consider is the expectations users themselves have about the groups level of publicness. When considering this there was a couple of observations which indicated users did indeed treat the group more as a public rather than a private place. The first observation was the rules the group adheres to. In these rules it is explicitly stated that users should not share personal information or situations which might be recognized by either students or parents. Sometimes the group administrators would comment reminders of this. Moreover, in some cases, other users would comment that posters should be careful of mentioning information like student texts because they could not be certain somebody with relations to that student might get access to it. The etiquette being to treat the group as a public place where you might not have complete control of who reads what is posted.

Furthermore, the users in the group would often comment with "send me a pm" or "message my inbox". These comments refer to the private messaging system that exists on Facebook, where users can send messages directly to each other, like you would use SMS or email. The norm appeared to be that when information was considered sensitive or private, then the PM inbox was to be used, rather than commenting in the group. A fun example to illustrate this is when users asked each other for help with access to content not freely available. Because the group rules forbid users from illegally sharing copyrighted material, the users would often move these conversations to private messages.

Based on these considerations it was deemed that what users posted in the group could be considered public and therefore eligible to use in research without obtaining informed consent. However, there was still considerations to be made in order to ensure anonymity and treating the data in a way that conformed to the type of covert research

being made. This will be covered in the method chapter, as ensuring anonymity was an integral part of the research approach.

3.4 Data Collection

Data collection and analysis were guided by dimensions identified in the literature review, namely *authentic learning* (Duncan-Howell, 2010), *knowledge facilitation* (Evans, 2015; Macià & García, 2016; Wang et al., 2014; Yeh, 2010), *exploring ideas* (Hur & Brush, 2009), *ideal identity* (Robson, 2018), *social support* (Kelly & Antonio, 2016; Trepte et al., 2015; Tseng & Kuo, 2014; Zuidema, 2012). The *social support* dimension also included the sub-themes: *informational*, *emotional* and *instrumental* support. These were used as deductive themes which helped guide the research process.

The primary method for collecting data in this project was through passive observation, or *lurking*. The researcher inserted himself as a "lurker" (another term might be non-participant observer) in the group and observed how the group operates. This is an unobtrusive method of research in which the researcher ensures that they affect the community as little as possible. This approach has been used by several researchers conducting research on teacher communities online (Abramo, 2016; Bernard et al., 2018; Waldron, 2009, 2011). However, this approach has been criticized by researchers who believe an ethnographer should fully participate in the community in order for them to experience a deep immersion in the culture (D. Bell, 2006; Miller & Slater, 2001). These critiques follow a more traditional definition of ethnography which has a stricter set of standards for participant observation.

However, online participation has been shown to not necessarily be an active one. We have so far discussed the role of the researcher as a lurker, however as Robson (2018) noted, the members of these communities can participate as lurkers themselves. And, although group members who participate as lurkers likely make no difference on the community itself, they still reflect a way in which teachers participate and receive knowledge from the community. Because of this, by participating in the community as a lurker, the researcher experiences the community similarly to the way most of the teacher online engages with SNS.

Lurking has also been noted to have ethical issues due to the researcher not being visible to participants and therefore consent not being able to be obtained (Ugoretz, 2017). However, these concerns were found to largely stem from details published from the data collected not being anonymized enough. The lurking method by itself has not been found to present ethical issues towards users if they are not identifiable in the presented data material.

The way this method has been implemented in this study is to primarily collect textual data to use for analysis and make research observations on group behavior. The method therefore treats the group members as authors, and we are only interested in the content they post as textual artefacts which can be analyzed.

Specifically, what has been collected and analyzed is: (a) posts (direct quotes from members), (b) individual comments to posts (c) the number of likes the post and/or comment has received, (d) the number of individuals who commented on each post, (e) The total number of comments on each post. A note to make about (e) is that Facebook does not include replies to comments when showing the total number of comments that a post has received. Therefore, the number of comments displayed by Facebook on a post was found to be misrepresentative for measuring activity, as replies are equally indicative of activity as regular comments. The researcher therefore manually tallied the number of comments and replies in excel to receive the total number of comments.

During observation, data have been collected and stored in a secure excel sheet. Collecting data this way has been done because this allowed the research to collect data a while after it has been posted. In an asynchronous group like "Engelsklærere" this is a big advantage, as otherwise the researcher would have to monitor the group constantly. The data collection period lasted from January 1st to January 20th and resulted in a total of 141 posts collected and 1181 comments. New data were collected several times a day during this period. First, the data were copied to a temporary spreadsheet where personal information was removed. Then, after the data were anonymized it was moved to the main data sheet. This process was usually done in the same day as the data were collected. After the data were moved, the temporary spreadsheet was permanently deleted.

A challenge that occurred during data collection were the realization that posts and comments have the potential of being edited and/or deleted after posting, both by the original poster and the group administrators. These changes themselves present potential data to study and unless recognized in the data material they could alter the research result. At the same time the practical limitation of how much time to spend in a day to monitor the group meant a balance had to be struck. Posts and comments were therefore collected five times a day, at 09:00, 12:00, 15:00, 18:00 and 21:00. The view of the group was set to sort by newest activity and so if new posts, comments or edits had occurred since last check it could be collected. Edits made to posts or comments were very few (N=4) and was noted with an asterisk in the data sheet. Posts that were deleted or edited after more than two days were not recorded as it was simply too difficult to keep track of data that far back. After collection was done the data was then anonymized. Anonymization involved names and other personal identification markers were removed to ensure anonymity in accordance with GDPR requirements.

The data collected from the Facebook group which is presented in this thesis has been further anonymized to avoid the possibility of identifying individuals. A specific reason for doing this is to avoid posts being tracked back to posters using search engines. Most posts collected are in Norwegian and have therefore been translated into English, which has significantly lowered the probability of post being traceable. In the few cases where posts were considered to still be traceable, a slight adjustment was done in the translation in order to obscure it. This involved using synonyms or altering word order in a way so that the altercations made was minor and did not change the original meaning. This method of anonymizing posts was used by Bernard (2018) in their research on an online community of music educators.

Ugoretz notes that "unobtrusive methods should be used in conjunction with active methods due to the emphasis in ethnography on dialogue with participants" (2017, p. 6). This is also found to be the case in this study as simply observing the group would likely not be able to reflect the perspective members themselves might have of the group. Furthermore, the complications of ensuring anonymity of data collected and analyzed during the observation period also meant that the validity of data solely derived from observation could be questioned. For this reason, the thesis has opted to also use both qualitative interviews and content analysis as a way of triangulating research methods.

3.5 Observation of How Teachers Share Experience

In the literature we noted that people have been shown to have a greater risk-taking attitude towards sharing personal information when participating on social networks (Fogel & Nehmad, 2009). This becomes a possible concern in this paper as we are

looking at a profession with a duty of confidentiality. During the research process it became clear that when teachers discussed experiences involving students, they also shared certain details about these students. Examples of details are students' disabilities, the level they attend and classes they take. These detail by themselves are not a privacy concerns when the teacher does not disclose any personal information about the student. However, as mentioned earlier, everything shared on social media is framed by context. The context to consider when teachers are posting things about their students is how this information can possibly be traced through the social media network. We have seen research show that when people go to social network, they connect using their existing offline networks (Boyd & Ellison, 2007). This implies that their online presence also carries a connection to their offline lives. The concern then becomes, when a teacher discusses experiences from their real life, can this then be traced back using the social network connection between their offline and online life?

Two things to consider in this regard is 1. The information contained in what the teachers post and 2. What information is available about the teacher on social media and online. The researcher had concerns that if a person was to compare a post discussing a student, with the information available about the teacher posting, that this might lead to a situation where a student could potentially be recognized. The researcher therefore wanted to observe how successful users in the community could be at tracing information given in posts sharing experiences about students. The researcher therefore went into the observational role of a lurker and tested how far the information could be traced using the search tools available on Facebook and online.

First, the researcher found posts in the group discussing experiences involving students. After observing the group for some time, a set of criteria was established for selecting posts to check for student privacy. The posts should contain information about the students' class level, a general description of said student and which subject the teacher taught the student. After identifying posts, the researcher would check the posters Facebook profile to see if their workplace was publicly listed. If this was not the case, a Google search was carried out for the posters name to find a workplace. If a workplace was identified the researcher would move on to check if they could find which classes the teachers taught. Finally, the researcher would try and use the information gathered to see if it was possible to identify an individual student.

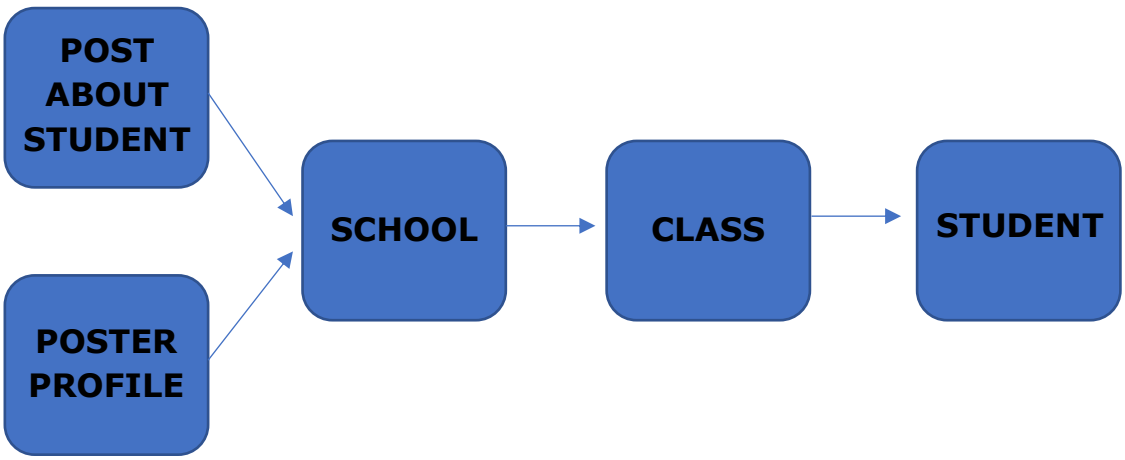

Figure 5 Illustration of the steps the researcher used when observing privacy of information posted about students.

To clarify the intention for doing this. What this observation should ultimately accomplish was to determine if teachers sharing experiences involving students could potentially pose privacy concerns. Note that the researcher did not collect any data during this process. The researcher simply identified potential posts during observation of the group and then made observational notes about what the post discussed and how traceable the information was found to be.

3.6 Content analysis: Organizing Online Reality

The raw data collected during the observation period needed to be processed in some way. To do this an online content analysis was utilized. Klaus Krippendorff (2018) notes that content analysis has several advantages, such as:

- It is unobtrusive
- It is unstructured.
- It is context sensitive and able to cope with a large quantity of data.
- It examines the artefact (e.g. text, images) of communication itself and not the individual directly.

What makes this method especially helpful in this project is its ability at handling large quantity of data as well as examining artefacts of communications. This method is used to both provide structure and give support to observations made by the researcher and interview participants. By using content analysis, the research also treats the group members as authors, rather than human research participants. This is important because it keeps the focus on content and the connections between users in the community, rather than focus on individuals or the content presented in the source itself.

By referring to the principles of connectivism and the ideas of distributed knowledge we know that knowledge online is never a constant, rather it develops and changes continuously. What a certain piece of knowledge might mean one day, can have changed the next. Furthermore, it is difficult to gauge the knowledge users might get from one source, because the internet is built around networking. What we mean by this is that users might gain more knowledge from a source of information than that source might appear to elicit based solely on content. Content analysis is therefore used to highlight tendencies and different ways teachers connect to nodes of knowledge in the group.

Studies using content analysis has received a couple of criticisms which should be considered. One is that this method is often highly focused on what is measurable, instead of considering a theoretical basis. The research design therefore must account for whether there is a relationship with frequency of occurrence (Kim & Kuljis, 2010, p. 370). Furthermore, content analysis as a method by itself is not likely to give definitive answers to research questions. It is found to be better if the researcher combines this method with other research methods which provide more appropriate measures of these aspects (Kim & Kuljis, 2010). Lastly, when content analysis is applied to online spaces the changing nature of online content might become problematic (Kim & Kuljis, 2010). Especially in a thread-based messaging board where responses might be referring to a post which could have been altered afterwards, thereby changing the meaning of responses as well. This project has tried to overcome this issue by collecting data frequently and making note of when changes has occurred (this is discussed in chapter 3.4).

In order to process the collected posts and comment, we need some way of organizing the chaotic reality of online interaction in such a way that we can draw some sort of meaning from it. In the literature it was found that many researchers opt to deconstruct the social networks into different categories (Yeh, 2010). Some focus on categorizing the users, whereas others create categories for certain types of interaction or acts. Categorization is a helpful tool for both organizing and making differences become clearer. However, how can we ensure the categories are representative of the reality they are supposed to reflect?

Laura Robinson (2007) notes that with the creation of online identities and personas, interactions online loses many of the symbolic identity markers that has been used in pre-internet studies (Robinson, 2007, p. 99). Online identities can be viewed more as personas created based on fantasy, rather than real people. Therefore, if we want to apply symbolic meaning to these personas, we also need to recognize that they might be used by people whose real identity does not reflect their online persona. This has not been found to be an issue in this project as the intended goal is not on studying the individual teacher, but more so their collective actions when interacting in an online community. However, it is important to keep in mind the distinction between how one person's interactions online might differ from their real-life interactions. This project does not attempt to make any conclusions about the individual teacher's personality, merely observe how they interact in an online setting.

For this thesis the essential need of ethnography to have a transparent and theoretically grounded approach. To explain the non-social world epistemological and methodically is impossible to do without representations. Representations is here understood as things and phenomena as they appear to us, not the thing itself, but how the thing is understood after it has been explained though language (Kjørup, 2008, p. 163). In this project the expression of language is the textual data produced by users in forms of posts and comments, as well as responses from interview participants. This data is what we need to break down into representations which we can use to help explain how Norwegian ESL teachers participate and share knowledge in Social Network Sites.

One thing to mention before looking at the analysis process itself is the digital aspect of what we are categorizing. It is important to recognize that the digital media is only one part of a bigger system of relations and connections. Furthermore, it is also found that by approaching the research question indirectly we can attain more underlying findings which is difficult to obtain through standard interviews and surveys. This theiss therefore understands the digital media in *relation* to other domains of the research in order to obtain an understanding of the relationship between technology and community. The next two sections will explain how posts and comments were analyzed in this project.

3.7 Analysis of Posts

The collected posts were analyzed using the same framework Bernard et al. (2018) used in their study. The posts were first charted using an Index of Interraction (IOI). The IOI index is used to determine the amount of interaction associated with each post by taking into consideration the number for likes, comments (including replies to comments) on each post. In practice the index is made by counting how many individual comments and likes each post received and then sum up these values to get a number representing the total number of recorded interactions a post has received. This number is then used to sort out posts to focus on for doing further analysis of the comments. The reason for using such an index is that it quickly became apparent, which was also supported by the

observations of (Bernard et al., 2018), that individual indicators such as likes or number of comments by themselves are not a good indicator of a post's engagement. There were several posts with a high degree of discussion and commenting activity which did not receive many likes. And likewise posts with an exceedingly large number of likes, but few comments. When applying the ideas of connectivism we also stipulate a couple of aspects by analyzing posts in this way. First, using the principle of *inference*, we know that the value knowledge or information has for the individual user is dependent on it piquing their interest to read it in the first place. By utilizing the tools available on Facebook to gauge a posts level of interaction, we are also finding the posts with the most outreach and potential for defining the knowledge in the group. Secondly, by finding posts which has been interacted with a lot, we are also to a greater extent able to look at the connections between the teachers, rather than just analyzing the content being posted.

However, one possible limitation to mention regarding the IOI scoring is that it puts an emphasis on frequency. By emphasizing both likes and comments based on frequency we do not account for quality, discourse or substance. The findings done using the IOI scoring system should therefore be viewed in this context. However, as discussed, a like or a short comment still represent an input of interaction a user performs. Furthermore, even though just posting a link or a quick response can be argued to require less effort, the act of interacting with a piece of information have underlying implications for how knowledge is constructed. Therefore, although we should keep in mind the limitations this method might have, it still gives indications of what type of knowledge teachers connect with.

It should be noted that like we discussed with the principles of digital ethnography, the digital media should not be the focus of attention in our research. When analyzing posts using indicators of interaction which is presented by the digital media itself, we run the risk of doing just that. We therefore need to be careful to triangulate the findings here with other data.

In addition to using the IOI to sort posts, the posts were coded using a taxonomy derived from Bernard (2018) and Robson (2018). The different codes used for posts are (1) professional development (education, language skills, health/well-being), (2) resources (Digital tools, premade visual teaching aids, premade worksheets, songs, games), (3) best practices (instructional approaches and methods), (4) planning (lesson, curriculum), and (5) classroom management strategies (strategies and environment). These codes were used to identify the types of topics teachers who post in the group are discussing and help identify which topics are most engaging to teachers. The goal of the coding is to get a clearer understanding of what teachers seek answers to in the group and which topics draws the most interests.

3.8 Analysis of Comments

Comments are another big source of material that has been analyzed. Where posts give an insight into the questions and topics that interests teachers in the group, comments give more of an insight into the collegial and supportive aspects between members. To help categorize the different types of comments collected the following coding scheme developed by Bernard et al., (2018) was used:

Drop-In. These comments are defined as quick and lacking detail, often giving suggestions, advice and links to other resources for the poster. These comments do not provide logistical or pedagogical steps to accomplish their advice, this is left for the poster to figure out themselves. Additionally, the drop-in comment occurs only once, with no other responses of comments within that conversation thread.

Empathy/Acknowledgement. These responses provide comfort and sympathy to the poster. One example from a post asking for help with assessment: "I remember I too struggled with assessment when I started working". Topics where these comments were mostly found are to do with classroom management and assessment.

Following: Following refers to comments that do not actively contribute to the conversation with advice or empathy but show interest in the topic, shares by "tagging" other users, or simply writes "following". By commenting on the post, the users are notified when there is activity on the post, like new comments.

Active: Active comment are seeking to engage other users and often facilitating the ongoing dialogue related to the posted question. These comments are often framed as questions and or addresses something someone has stated in the original post or subsequent comments.

Antagonistic: is a sort of counter to empathy/acknowledgement, antagonistic comments provoke negative discourse, threaten, or even bully other FMT group members participating in the conversation. Only one comment has been identified as being antagonistic in this study, although it is possible that the group administrators proactively removes unwanted comments before they could be collected.

3.9 Interviews

3.9.1 Designing the Interview Guide

The purpose of the interviews was twofold. Firstly, they allow the research to include the perspective from participants in the Facebook group. This is important as the other methods used in this project mainly view the group from the researcher's perspective. The participants perspectives can therefore help provide more understanding and give evidence to other research findings in this study.

The interviews were conducted after posts and comments had been collected from the Facebook group, and analysis of this data were almost completed. This meant that before conducting the interviews, the researcher had already made several notes on what parts of the research needed to be supported by participants reflections. For this reason, it was found that the interviews should be structured to find the interview participants perspectives on key findings. However, the analysis process was still an ongoing process and it was therefore found that participants could provide new insight that might change how the researcher viewed the data material. Because of these considerations, it was decided to carry out the interviews as semi-structured.

An interview guide was therefore created. The interview guide was organized according to the deductive themes which guided the research. These themes were *authentic learning*, *knowledge facilitation*, *exploring ideas*, *ideal identity* and *social support*. This way of organizing made it easier for the interviewer and for the informants to keep track of the questions (Tjora, 2017, p. 157). In designing the interview guide it was important to focus on making the interviews balance the need for structure and remain open to include the informant's personal reflections. Anne Ryen (2002) notes that the formal nature of designing interview guides are often discussed, and that there are benefits as well as issues with all forms: "if there is too much structure, it can happen that one misses or misunderstand phenomena that is important for the interviewee" (Ryen, 2002, p. 97). If one focuses too much on the preplanned questions it can lead to the interviewer becoming less observant. The goal of the interviews in this project was to capture the informant's perspective. It was therefore found that a too rigid interview structure could prove to be a hindrance in allowing the informants to give the research

new perspectives. On the other hand, it was also a wish to be able to compare the answers collected between informants and to do this required some level of structure. This was solved by following Kristen Ringdal (2013, p. 243) suggestion of selecting a few key questions which should be asked as similar as possible.

Structuring the interviews in this way can also be important for lessening the impact the researcher has on the discussion. If one in a semi-structured interview opens for improvised follow-up questions, this can lead to the researcher taking a more pronounced role in the dialog, something one should avoid (Ringdal, 2013, p. 118). Therefore, it was prepared several general follow-up questions, such as "Can you elaborate this? "or" Do you have any specific examples? ". Ringdal says that the interview guide is just one of the factors improvisations can be based on. Because in-depth interviews are mostly open questions, and the informant is often encouraged to provide long, in-depth answers. In addition, he emphasizes that the questions may vary from informant to informant, as long as the same topic is covered.

3.9.2 Selecting Informants

The informants for the interviews were approached directly through the Facebook direct messaging service with request if they wanted to participate in an interview. The main criterion for selecting the informants was that they had different types of participant roles. This meant the research sought one informant who actively participated in discussions and posting and one informant who did not but still used the group frequently. Furthermore, other criteria were that they had to have different levels of experience, both as teachers and as members of the group. In addition, it was preferable that they taught different levels of students and worked in different parts of the country. All the criteria were successfully fulfilled.

The first informant was strategically selected during the observation period of the group. The informant was found to show up frequently in discussions and posts. The second informant was found through a post published in the group. In this post the teacher noted they had not taken active part in the group, but nonetheless expressed enjoyment over being a member. After reading the teachers post the researcher sent a message to the second informant and asking for clarification for what the person meant by “not taking part”. It was established based on the teacher’s response that the person likely satisfied the criteria of being a passive participant. An overview of the two informants and their background both as teachers and members of the Facebook group can be seen in table 3:

	Roles at school	**What Level they teach**	**Years of teaching**	**Years of being a member**	**Type of group participant**
Teacher A1	English teacher	High School (Vocational studies)	10+	4 years	Active
Teacher A2	Contact teacher / English teacher	Lower Secondary	1	2 years	Passive

Table 3 Overview of interview participants background.

3.9.3 Conducting the Interviews

The researcher spent some time chatting with the interview participants through private messages on Facebook before the interviews themselves were carried out. This was done to both obtain some knowledge about the informants' role in the group, and to give the informants a clearer understanding about the research project. The last point was done to create more trust between informant and researcher. Carol Warren (2001, p. 83) writes that the goal with most qualitative interviews is to deduce interpretations, not facts, from the respondents answers. To accomplish this, the interview situation is dependent on capturing the complete story from the interview object. In other words, the quality of a semi-structured interview is dependent on trust between researcher and interviewee (Ringdal, 2013, p. 243; Tjora, 2017, p. 118).

The interviews were conducted using video chat and lasted around 30 minutes each. No audio or video recordings were made during the interviews as there had not been sought preapproval for this. Notes was therefore used in order to have a record which could be transcribed afterwards. Notes was primarily made using quick bullet points. This was done to avoid having to pause the interview and make the notetaking as little intrusive as possible on the interview situation (Postholm, 2009). However, when the informant made especially important remarks, or the notetaking was falling behind, the interviewer would interject and ask to pause the interview. The interviewees were warned beforehand that there might occur pauses during the interview and to not worry if this occurred. Both interviews were held after working hours, when the informants felt they had most time to participate. The interviewees chose the time for the interviews themselves. Teacher A1 was interviewed first and Teacher A2 was interviewed the following day.

During the second interview there was some technical error with the video chat which might have affected the dialog. In retrospect it could have been helpful to have taped the interviews instead of relying solely on notetaking, especially because the interviews were conducted using video chat. During the interview with the second informant the sound would stop working and require the informant to mute and unmute their volume. This occurred a couple of times when the interviewer had paused the interview to take notes. The result was that the informant would be confused if the interview had resumed because they did not hear the researcher. It therefore had to be some back and forward communication to indicate the interview could resume. In a reflection note after the interview it was noted that this somewhat hampered the flow of the interview and caused the informant to lose their train of thoughts on at least two occasions. Due to the technical issues with the interview of teacher A2, a second interview was made with the same informant. In the second interview the researcher revisit questions where technical issues occurred. The second interview session with teacher A2 had no technical issues.

3.9.4 Analyzing the Interviews

Because the interview guide had been organized according to the same deductive themes identified in the literature review, the researcher already had somewhat of a structure going into the analysis. The researcher first read the transcript and decided that most of the deductive themes were appropriate for a broad coding of the interviews. However, the researcher noted that in several places there was need for more precise codes. The researcher therefore conducted axial coding to identify sub themes which could help further identify findings in the interview (Postholm, 2005, p. 89). The researcher then did a line-by-line coding to identify if even more themes could be found. From this second

round of coding emerged themes such as, *professional confidence*, *converting online knowledge into practice*, *lack of ICT knowledge, exploring ideas, utilizing the advantages of online environments*. These themes helped clarify important findings in the transcript and allowed for a more precise triangulation of findings with the other data collected.

4 Findings

The findings from the study are presented according to the method used to collect the data. First, we present the findings done using content analysis. This section is further organized by the different types of data that has been analyzed. The next section presents findings made using observation. This section presents some of the observational notes made during data collection. This section is organized by topics derived from the thesis research questions. Lastly, we present the findings made during the interviews. This section is organized in accordance with the themes which guided the interview guide and some of the consequent themes which emerged during coding of the interview transcripts.

4.1 Content Analysis

Content analysis is the main source of data in this study. The findings collected here are mostly concerned with identifying patterns and tendencies which can help describe characteristics for how teachers share knowledge on Facebook and help provide answers to our two research questions. All the data here are presented in completely anonymized form and the examples given are translated from Norwegian to English by the thesis author.

4.1.1 Identifying Characteristics of How Knowledge is Shared

Our main source of data on the knowledge users share consisted of the posts and comments posted on Facebook. We first begin by presenting the findings on the type of content that drew the most engagement from users. From here we can have a clearer understanding of what knowledge teachers share with the community.

An IOI score was calculated for each post collected (explained in chapter 3.7). The posts yielded a wide range of IOI scores 0-520. Table 4 displays how IOI scores were distributed across the posts collected in this study.

IOI Score	Number of Questions	Percentage
0-25	67	51%
26-50	31	24%
51-75	21	16%
76-100	8	6%
101-150	2	2%
520[2]	1	1%

Table 4 Distribution of Index of Interaction (IOI) scores on posts collected. Percentage refers to percent of total number of posts (N=141).

What table 4 shows us is that 90 percent of posts elicited an IOI score of 0-75 and only 10% of posts elicited a very high level of engagement. Furthermore, 51% of posts were in the lower scoring 0-25 bracket. This indicate that the majority of posts made in the group does not receive much engagement from the community as a whole. This is further emphasized when we see that even though the top scoring posts only made up 10% of the total number of posts collected, they elicited 31% of the total IOI score. If we expand to include the top 20% IOI scoring posts, they amount for 51% of the IOI scores found in the group.

Next, all posts were coded using the coding scheme developed by Bernard et al., (2018) to find tendencies for what type of inquires teachers make when posting. Two examples for how posts were coded can be seen in Table 5:

[2] This was a post made by the administrators which displayed the group rules. The reason this post scored so high is likely because it was pinned by the administrators to permanently stay on the top of the group feed so people could read it. Additionally, administrators encouraged users to like of comment on the post to show they had read it.

Post Name	IOI Score	Themes	Original Post
Post 1	32	Resources, best practice	Hi! Anyone who has some suggestions on how we can work with the competence aims: describe and reflect on the situation of indigenous peoples in English-speaking countries? I intend to use "The absolutely true diary of a part-time Indian", but gladly welcome tips on other texts and ways and ideas on how to work with the competence aim.
Post 2	31	Resources	Any suggestions to good Ipad apps we can use when teaching English on the second grade?

Table 5 Example of posts that were coded. Contains one post with multiple themes and one with just one theme.

The coding revealed that some posts contain multiple inquiries that make them span multiple themes. In post 2 the teacher has one clear request, he/she are looking for specific apps to use in their classes. This makes it clear that the post is only asking for a specific resource and the post was coded accordingly. However, in Post 1 we find two different inquiries in the same post. Firstly, the teacher asks if there are any other texts to use, other than the one he/she has already chosen. This leads us to want to code the post as *resources*. However, the teacher is also looking for a suggestion with how to work with the competence aim. This was found to be more indicative of how we defined the *best practice* theme. This post was therefore coded with both themes. The reason for this is that our coding account for what type of inquiries teachers make with their posts. Therefore, if a post contains multiple types of inquiries, we need to code the post with multiple themes. It is for this reason important to keep in mind that the number of themes found are more than the number of posts.

After coding all the posts, the themes were counted in Microsoft Excel to find what themes were most common. These findings are summarized in Table 6.

Themes	Number of posts	Percentage
Resources	94	66 %
Planning	39	28 %
Best practice	39	28 %
Professional development	30	21 %
Classroom management	18	13 %

Table 6 Number of themes identified in the posts collected (N=141). Note that some posts were coded with multiple themes. Percentage refers to total number of posts (N=141), not total number of themes.

The findings revealed that *resources* was the most common type of theme shared in the group, being coded to 66% of all posts. The second most popular theme for posts was *planning*, and *best practice*, both coded to 28% of posts.

However, further analysis showed that even though *resources* was predominantly the most popular theme when looking at the total number of posts, it was not when we look at higher IOI scoring posts. The researcher narrowed the selection of posts to only include those posts with an IOI score of over 76. This selection was then analyzed to find which themes were the most frequent. The result from analysis can be seen in Table 7.

Resources	Planning	Best practice	Professional development	Classroom management
5	8	4	3	4

Table 7 Overview of distribution of post themes in posts with an IOI score of over 76. Note that some posts were coded with multiple themes.

In this selection we see can see that *planning* was the most frequent theme, being coded to 73% of the total number of posts in the selection (N=11). *Resources* were the second most frequent theme in this selection, being coded in 45% of the posts.

Seeing as there were differences in which themes were most frequent in the selection of all post and the selection of higher IOI scoring posts, a further analysis of themes was conducted. The three top IOI scoring posts and three lower IOI scoring posts were selected for further analysis. Table 8 shows an example of three posts with the highest IOI scores[3]. Note that the second post in this table also provided a link for users to download content to use in their classes. Also note that the selection excluded the highest scoring post in the data. This was done because the highest IOI scoring post was made by the group administrators and displayed the groups rules. The post was therefore found to not reflect actual user posting behavior.

[3] Does not include the highest scorings post which is a post posted by an administrator about the group terms of services. This is not included because it does not reflect the average group interaction.

Post Name	IOI Score	Themes	Original Post
Post A	150	Planning, Best Practice	English Day! Afternoon Tea, factual text about England and business cards for girls. A great day with lots of learning where the students used the language and learned a lot about English culture. Many brought their favorite cup to Afternoon Tea, and many dressed up in school uniforms 😊 These types of theme days cover many competence goals in the subject👍
Post B	114	Resources	I have used a lot of these types of pictures for conversations during classes on the intermediate level 😊: "ARTFIDO.COM Optical Illusion Paintings By Rob Gonsalves That Will Twist Your Brain artFido"
Post C	101	Best Practice, classroom management, planning	Look HERE: Writing relay! Pick out 5-6 (customize, maybe just be glosses) sentences from reviewed text, and hang them around the classroom. The students work 2 and 2, one runs to the text and the other reads, repeating the text to the partner, who writes the sentences. A fun competition that provides reading training, movement and exercise. 👌

Table 8 Overview of the three posts with the highest IOI scores in the data.

Post A describes a theme day the poster suggests teachers can try out. Post B shares optical illusion images that they explain teachers can use in their class to great effect. And the last post, Post C, suggest a reading/writing activity teacher can try out. Analyzing the content of these posts revealed that all three posts share a couple of common features. Firstly, we do not find concrete direction or suggestion on how teachers should adapt what the poster suggested. Furthermore, there were little didactic reasoning or reflection to be found in these posts. This was further evident by the comments to these posts, which often asked for details on how these activities had been executed. Here is one example:

> Looks fun! Is this for fifth grade? Would you like to share some of the texts and the writing templates?

However, most of these comments were left unanswered, but it did happen that users commented with their own implementation of the idea presented by the poster. For instance:

> We used Afternoon Tea with our 7th grade class. They are working with history, etiquette, recipes, making presentations. We bake, make lemon curds, invite guests and talk English during this activity.

The second feature was that the posts often highlighted the potential and benefits to be gained by trying the suggestion, examples of this being: "These types of theme days cover many competence goals in the subject👍", "I have used a lot of these types of pictures for conversations", "A fun competition that provides reading training, movement and exercise. 👌 ". However, once again we see little didactic reasoning behind these benefits, other than that they are fun and cover competence goals. These similarities led to the researcher formulating a new sub-theme, *idea providing*. The theme is defined as *an abstract suggestion, which is hinted to have large benefits*

Next the lowest scoring posts were analyzed in a similar manner as posts A, B and C. Table 9 displays the three posts with the lowest IOI scores.

Post Name	IOI Score	Themes	Original Post
Post C	1	Resources	Hey! Anyone has any tips for free apps with english audio book to use with 8th grade students?
Post D	0	Resources	Those of you who use the ESL page, which books do you recommend for the 7th grade?
Post E	0	Resources	Is there anyone who has made/have access to: cards with basic sentences in English where there is also a picture (which support/shows what the text means)?

Table 9 Overview of the three posts with the lowest IOI scores in the data.

These posts did not exhibit the characteristics of *idea-providing* posts. Instead, they were found to be very specific inquiries asking for help obtaining concrete resources. The first thing to note here is that all the posts were coded with only one theme. This is a tendency found to be common with lower scoring posts. Where the researcher often struggled coding top IOI scoring posts, the lower scoring posts were much easier to code. The reason was because these posts had much clearer intentions and were most often not open to interpretation. Furthermore, all posts with an IOI score below 23 were questions, all exhibiting the same characteristic of being very concrete and specific. However, even though they were specific, we still see little didactic reflection or reasoning in these posts. These posts are looking for concrete *things* to do or use, they are not asking for reflections on how to use them or why. The researcher therefore decided to also group these posts into a sub-theme called *resource-inquiries*. This theme was defined as *asking for and about concrete resources which teachers use in their profession*.

The researcher then went back into the dataset to select the top 20 IOI scoring posts and the bottom 20 IOI scoring posts to code as either *idea-providing* or *resource-inquiries*. The results can be seen in Table 10:

Post selection	*Idea-providing*	*Resource-inquiries*
IOI score 66-136	17	3
IOI score 0-3	1	19

Table 10 Number of posts coded as either idea providing or resource inquiries amongst the 20 top and bottom IOI scoring posts.

The finding suggested that top engaging posts in the group are mostly characterized as being *idea-providing*. Whereas lower engaging posts are mostly characterized as being *resource-inquiries*.

4.1.2 How Group Facilitators Facilitate Knowledge

The role of community facilitators was noted in the research literature of being important to both how knowledge is shared, but also what type of knowledge teachers share. During observation of the group it was discovered that three posters were posting more frequently than other users and their posts usually encouraged discussion. It was therefore noted early in the observation period that these individuals might be playing a special part in the group. The researcher therefore started taking notes on posts made by these teachers. After analyzing the posts made by these teachers and how they interacted with the community, they were identified as falling under the definition of facilitators as described by Yeh (2010).

A total of 15 posts were found to have been created by these posters during the data collection period. Analyzing posts made by these facilitators yielded some interesting findings. Firstly, the average post IOI in the group was lower (n=31), when compared to posts made by facilitators (n=41). However, none of the facilitator posts were amongst the top 20% IOI scoring posts. The discussion topics facilitator posts were interesting. Whereas most posts in the group related to resources (66%), the posts made by facilitators was consisting of mostly; best practice (30%), professional development (21%), and classroom management strategies (18%). The posts made by the three facilitators were also highly represented in the total number of posts coded as addressing professional development and classroom management strategies. The facilitator posts accounted for 22% of all posts coded to professional development and 29% of classroom management strategies. It was further found that facilitator posts seemed more concerned with creating discussion and conversation about the teacher profession, rather than getting answers to an issue of their own. This was evident by the wording used by facilitators when posting, often ending with open questions or encouragements like: "Go! Everything is of interest.", "Has some of you done something similar they want to share? Thanks in advance! :)", "Are there many who have noticed this?".

The facilitators would often comment on their own post asking teachers question like: "What type of learning do you think this elicits?", "Can this affect learning in other areas?". In addition, in 8 of the posts there were included learning goals. Examples of such goals were teaching aims, skills and type of learning students could gain. For instance:

> Reasons for doing this:
> Get everyone to speak a lot of English
> Provide scaffolding to make it less scary to speak English with others
> Practice improvising a natural conversation where one participates in a conversation mode. Not singular.
> Have fun! Create a good atmosphere to acquire learning!

Fun if someone tries this and comment with feedback on results and experiences.

The findings suggested a greater focus on didactic reasoning and reflection in these posts. Both because they included reasonings relating to specific learning outcomes and how they improve students' skills, and because the posters actively engage with comments to further challenge teachers to reflect on their responses.

4.1.3 Type of Comments to Posts

Comments were coded as either *Drop-in, Empathy, Following, Active or Antagonistic*. After analyzing comments to all posts, it was found *drop-in* was the most common form of comment, making up 58% of the total number of comments coded (N=1181). Table 11 shows the frequency of the different categories of comments collected and coded in this study.

CATEGORY OF COMMENT	PRECENTAGE	NUMBER OF COMMENTS
DROP-IN	58%	680
ACTIVE	35%	417
FOLLOWING	5.70%	68
EMPATHY	1.20%	15
ANTAGONISTIC	0.10%	1
TOTAL	100%	1181

Table 11 Overview of the frequency of different categories of comments.

Drop-in comments occurred frequently throughout all posts. It did not appear to be a specific pattern in either post topic or comment which elicited these comments.

The *active* comments were often published in within a short time frame and were most often found in posts that asked for specific help with a more complicated issue. Examples of how *active* comments were formulated could be "how about you try […]" or "I have also been in this situation and what I did was […]". These comments referenced either the poster or previous comment.

The *following* posts are interesting, because following a post through commenting was found during observation to be regarded as an outdated practice within the community. This was evident because there were posts dedicated to urge group members to stop commenting "follow". In addition, these posts pointed out there were "discrete" ways of following a post that did not require commenting. However, as we can see there are still users who use comments to follow, although many of these are not doing so to follow themselves. Most of these comments referenced other users and used their comment to connect a person they know, often a colleague from their school, to a post topic they found especially interesting. These comments would often take the form of "this is something we should try [name]" or "look here [name]".

Empathetic posts were rare, even in instances were posters clearly described they were struggling. One of the posts were empathy was noted was a case where a teacher explained wanting to take further education but found this hard to combine with children and work. The poster described having tried once before but had to give up due to overwork. One poster noted sympathy to the posters situation and recognized it is a hard challenge to combine work, studies and family life. However, interestingly most of the comments focused only on providing information support to help the teacher overcome their issue. They did not focus on showing empathy to the teachers struggles, rather they most often went straight to provide solutions. In the example post we referenced earlier

there were made 14 comments, and only one of them were coded as *empathy*. The rest were either *drop in* comment saying the teacher should just "go for it" or *active* comments suggesting and discussing different schools and education choices to consider.

Antagonistic comments were the rarest form of comments, with only one instance found. This comment was left on a post which we will discuss later where a teacher expressed criticism that teachers on the Facebook group displayed lazy behavior. The antagonistic comment was left by the teacher who posted this comment in response to another comment on their post. The comment read "meh that is too easy, all I see is lazy teachers being lazy".

4.1.4 Teachers Use of Weblinks to Share Knowledge

Given the high amount of short *drop-in* responses to posts, it became reasonable to consider if there are meaningful ways in which users can share knowledge, while expressing themselves in a quick manner. As explained in the literature review, knowledge online can come in the form of referring to external information, often through linking to external nodes of information. With this assumption in mind an analysis was made to examine what type of knowledge users share when making an external reference. Using an advanced text query in Nvivo it was found that words associated with website addresses; com, https and www, were the most commonly used words used by commenters (after removing common conjunctions and pronouns). This was found to be indicative that teachers extensively used linking to websites as a way of sharing knowledge with each other. These weblinks provide another possible level of knowledge to the context in which discourse is framed. This warranted further analysis of how teachers use link-sharing to share knowledge,

Using a more specific advanced query search in Nvivo for websites ending in either .no, .org, .com or .co.uk yielded a total of 110 website links shared in the comments collected in this project. 87 of these links were shared in comments coded as *drop-in*. Of the total 110 links, the three most frequent occurring websites were Youtube.com (N=38), BBC.com/co.uk (N=20) and britishcouncil.org (N=15). Interestingly, websites referring to more traditional resources for ESL teachers in Norway, examples of this being NDLA.no (*N*=3), cappelendamm.no (*N*=3), gyldendal.no (*N*=5), aschehoug.no (*N*=1) appeared to be shared a lot less in the group. Another tendency in these findings was that the community appear to prefer sharing links to multimodal content like videos and podcasts. Users also shared links to recent news stories. Figure 6 shows the distribution of what type of content that was found to be shared by linking. Table 12 presents examples of the links made both to the BBC and British Council in the data collected in this study.

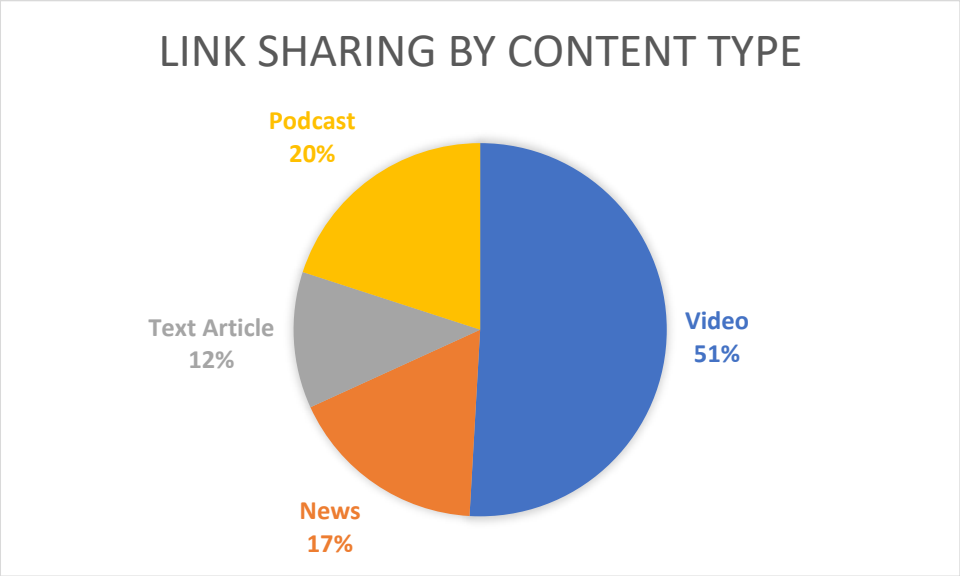

Figure 6 Distribution of content type in websites linked by users in the Facebook Group. Total number of websites were N=110.

BBC	Type	British Council	Type
http://www.bbc.co.uk/learningenglish/english/features/witn	Video	http://learnenglishkids.britishcouncil.org/grammar-videos	Video
http://www.bbcamerica.com/anglophenia/2014/04/45-phrases-coined-shakespeare-450th-birthday	Text	https://learnenglishkids.britishcouncil.org/video-zone/emoji-meanings-around-the-world	Video
https://www.bbc.com/bitesize/clips/zgfjcwx	Video	https://learnenglish.britishcouncil.org/learnenglish-podcasts	Podcast
http://www.bbc.co.uk/learningenglish/english/course/shakespeare	Video	http://learnenglish.britishcouncil.org/listening?_ga=2.166710646.99244268.1556375264-1980513034.1556375264	Audio
https://www.bbc.com/news/amp/world-us-canada-46846467	News	http://learnenglish.britishcouncil.org/video-zone	Video

Table 12 Examples of weblinks and their content.

The findings suggested a video being the content being shared the most by users through links, followed by podcasts. Together, videos and podcasts make up 71% of all links made in the group. The weblinks collected were then checked for content and cross-referenced with what type of post they were related to. 79% of comments with links in them were posted as responses to *resource* posts. Of these, all except 3 were coded as *drop in* comments. The remaining 24 comments were made to posts coded as *best practice* and *professional development.*

It was further found that some of the websites shared appear to serve as intersections for teachers to find what they were searching for. https://ingunnsj.wixsite.com/ and https://martinjohannessen.blogspot.com/ are examples of websites teachers shared to help users find what they need when they themselves are a bit unsure. These sites contain among other collections of links to

different websites, groups and resources for teachers. There were found 10 instances of teachers referring to these sites and, in all cases, the original poster had asked a general question about where to find good resources to use in teaching. One example of such a post were: "Hi, anyone have any good suggestions for where I can find websites to help with planning English lessons?".

4.2 Observation

During data collection the researcher made several observational notes on the activities in the group. Some of these observations were found to give important insight into how the group perceive depth of learning and reflection, and what information teachers find appropriate to share about their students. Furthermore, the researcher used the observational role to check if information posted in the group about students could be a privacy concern.

4.2.1 Observation of Teachers Sharing Experiences

During observation of the group the researcher noted inconsistencies in how the community reacted to teachers sharing experiences involving students. In some cases, there would be reaction from the community that the group was not an appropriate place to discuss such topics. However, in other cases where very similar student information was disclosed, there was no reaction from the community. This led the research to question what criteria teachers set for what is not okay to include when sharing experiences.

We begin by presenting an example of a post that received a lot of backlash from the community on its handling of student information. The post was posted by a user we will refer to as "Teacher X". The commenters noted that the post contained information that could cause the student to be identified. Furthermore, the way the teachers addressed the student was criticized and noted as not being professional. The post was only active for a few hours. Within 2 hours the posts comments were closed by the administrators and within 12 hours the post was removed by either the poster him/herself or the admins. The post read as follows:

> I have a student in English at VG1 whom I struggle getting to take school serious. The student is originally from Afghanistan and simply does not want to put in the work to his studies, trust me I have really tried. I have had similar experiences with other Afghan students. I feel I am slowly giving up and I don't see a way to reach through. Any tips?

Firstly, we should note a partial reason this post received negative backlash was because some members felt the post indicated the students cultural background was a part of the student's behavioral issues. One of the comments which specifically stated this:

> I can't help but get an uneasy feeling by your focus on the student's ethnicity, how is that relevant to what you are asking? I get the feeling the only reason you include it is to start a type of discussion we really should avoid having in this group.

However, what most of the comments focused on was that if someone who knew the student read the post, they could possibly recognize the student in question.

Commenters noted that the negative way in which the teacher talked about the student could have negative consequences for them as a professional. An example of this was:

> I would be careful posting about my students, if I was you. Especially when you describe them with such a negative attitude as you do here. You never know who might read it and it is not unheard of that teachers has gotten problems at work for posting about their student online

Based on the negative feedback on the post made by Teacher X, we could assume the community has a strictly established policy when it comes to discuss student cases. However, only a week after the criticized post was removed from the site, another post discussing a student case was posted. This time, the post did not receive any critical remarks from the 8 comments made to the post. We will refer to this poster as "Teacher C". The post read as follows:

> I have a student in 9th grade English with very low competence in both written and oral English. I have worked in middle school for many years, but I have never met a student who struggled this much before. I have talked to the parents and administration about the possibility of the student might having dyslexia. However, nothing appears to be done on having the student be tested for this. Any tips for how to deal with this situation?

The post made by Teacher C certainly has a few differences from the post by Teacher X, both in topic and in information given. Firstly, this teacher C did not complain about the student's behavior and did not classify the students cultural background. In this regard we can say there is a difference in what information the community deem appropriate to divulge.

Doing further examination revealed 9 other posts collected in the data material which closely resembled Teacher C's post. That is, the poster explain they have a non-specified student which they teach in English. The post also mentions the level which the student attends. Furthermore, he topics for these posts all had to do with the student having some sort of issue which impacted their ability to learn English. Examples of topics were: A middle school student with suspected undiagnosed dyslexia. A new student who is deaf and requires a sign language interpretation. A foreign language student in high school who performs much lower than what is expected. None of these posts received any negative feedback from the community.

4.2.2 Checking Privacy of Information Disclosed in Posts Sharing Experiences Involving Students

To check the privacy concerns in the 10 posts identified in 4.2.1, the researcher used the observation role. The researcher assumed the role of lurker and applied the method in chapter 3.5 to check if information given in posts about students could make it possible to identify them. The findings are presented in Table 13:

	TOPIC OF POST	SCHOOL IDENTIFIED?	CLASS IDENTIFIED?	STUDENT IDENTIFIED
CASE 1	Minority student in need of extra attention	Yes	No	No
CASE 2	Unmotivated student, possibly caused by divorce	Yes	2 possible classes identified	No
CASE 3	Unmotivated student	Yes	No	No
CASE 4	New student who is also deaf	Yes, but only after googling teacher name	Yes	No
CASE 5	Minority student in need of extra attention	Yes	No	No
CASE 6	Student with parents claiming higher skill level than teacher believes	Yes, but only after googling teacher name	Yes	No
CASE 7	Student with possible undiagnosed dyslexia	Yes	No	No
CASE 8	Student with possible undiagnosed dyslexia	Yes, but only after googling teacher name	Yes	No
CASE 9	Unfocused student with ADHD	Yes	Yes	No
CASE 10	Unmotivated minority student	No	No	No

Table 13 Overview of 10 student cases discussed in posts on the Facebook group. The table show how successful researcher was in identifying student being discussed based on information given in the post.

The findings revealed that Case 10 was the only case were a possible school was not identified. This is likely because the teacher was, as explained in their post, a substitute teacher and their school likely had not listed them in their contact pages. In all other cases the school the student in question attended was identified using online searches. In four cases the school website also had the teachers weekly schedule available, this opened for the possibility for the researcher to identify which classes the teachers taught. In three cases the teacher only taught one English class at the level they specified in their post, meaning the class with the discussed student was very likely identified. In one case the teacher taught two classes at this level.

In none of the cases the researcher was able to specifically identify which student were being discussed in the teachers post. However, this finding does indicate that

experiences shared by teachers using their own profile can be traced all the way to which class the student in question attends.

4.2.3 Observation of the Groups Opinions on Depth of Learning and Reflection

During data collection there were noted to be voices within the community itself who expressed concern with the depth of learning and reflection teachers gained when participating in the group. Especially one criticism of Facebook collegiality was that it facilitates a "begging" mentality. It was noted that teachers seeks out these groups and asks questions with the intent to get ready made activities to use in their classes, instead of doing the work themselves. One user, whom we will refer to as Teacher B, noted this in the group:

> I was introduced to this group by a colleague, and thought it was a place where one could get some good tips. However, it turned out this is mostly a place for people who are looking for shortcuts. «I have x theme in y class", "need a film about x for class y" etc. Where the f#ck did the professional pride go amongst teachers?

The comments to this post did however strongly oppose the opinions of the poster. Most took issues with the idea that asking for help with activities or resources to use in the classroom somehow elicited less learning than acquiring the knowledge through other means:

> If everyone is to go around thinking that "their own" is always the best, there will be less cooperation (and less learning) to go around. A tip will not be worse (and elicit less learning) by asking for it, as compared to whether the tip is given without asking.

Another comment also noted:

> Perhaps you should focus on contributing something productive. Instead of throwing dirt on teachers who might have been having a bad time one day, or having needed a last-minute finish on something.

The posters focused on sharing as an important factor in furthering not only the groups agenda, but the teaching profession. However, the last post did seem to indicate that using the groups to find shortcuts is something teacher do use the group for. The question becomes if acquiring tips and resources from the community really makes the teachers reflect less on what they are doing and planning. This is a question that was sought to be answered in the interviews.

4.3 Interviews

The interviews are here presented in accordance with the themes which guided the interview guide and some of the consequent themes which emerged during coding of the interview transcript.

4.3.1 Converting Online Knowledge into Practice

Both interview participants were asked to recall an example where they had acquired knowledge from the group, which they then used in their profession. Teacher A1 noted an experience in which he had reached out to the group to help identify possible plagiarism with a student text. The text in question was much more advanced, both in its language and content, than anything the student had produced earlier. Teacher A1 noted that the sudden jump in quality made both him and the colleagues at his school suspicious. However, the text passed plagiarism tests. Teacher A1 then decided to reach out to the Facebook group and see if any other teachers had experienced something similar. It turned out that several teachers had similar experiences and one member pointed out there existed a service which helped students beat plagiarism tools. The teachers were eventually able to identify both were the students had found the original text and how the service they had used allowed them pass plagiarism tests. When asked if he thought he and the other teachers at his school could have been able to figure it out without the Facebook group he answered:

> We would probably have started questioning the student after a while and testing if he/she could remember and articulate what they had written. But then again you do not want to go accusing your students of cheating without a good reason either. So, it was definitely a big benefit to have other teachers to discuss your suspicions with. The benefit of doing this on Facebook is that you have a much larger group of teachers from which to compare experiences with.

A similar experience was recalled by teacher A2 as well. She explained that when she started working at her current school, she discovered she could not open several student texts and that they would display errors.

The error persisted for a couple of months without anyone at her school figuring out what caused it. Teacher A2 then came across a post on the Facebook group warning teachers to look out for the error she was seeing. As explained by the Facebook post, the reason these texts were unable to be opened was that the students purposefully broke their submission. There apparently exist websites online which allows students to corrupt their files so they cannot be opened. The students were gambling on that when the teacher eventually tried to open the file, they would assume it was caused by an accidental error and the students could get to resubmit their paper. Because it usually takes a bit of time for teachers to begin looking at the submission, the student gains a bit of extra time to finish their paper. Teacher A2 noted that this was something a group of students at her school had been doing for some time and no one had suspected the real reason.

In another question, the interview informants were asked to identify what they looked for in online resource they could use in their classes. Both teachers answered they looked for something beyond what they could get from the school textbooks. Teacher A1 explained:

> I often look for current topics that are in the news media. I find it is easier to have my students work on something that is topical in the news media […]. There is also a lot of quality video content out there where more difficult topics are explained better than I could hope to do myself, so that is something I look for. For instance, I recently used a video someone shared in the group of a guy discussing the language of Donald Trump. How he constructs a sentence and uses language. My students really loved it.

The interview with Teacher A2 also revealed that she sought resources of a topical or multimedia nature. Teacher A2 also mentioned that she looked specifically for resources she could use to complement the school textbook, which she found lacking:

> I am personally not a big fan of the textbook we use at our school. […] When I am searching for resources in the group it is often to find something which supplements a topic we are working on in the book. This can be a Youtube clip or perhaps a podcast.

4.3.2 Knowledge Facilitation

When the interview participants were asked what made them want to comment on a post, both interview participants answered that it depended large part on the poster and content. When asked to elaborate on what qualities a post should possess and what type of content interested them, both participants seemed to agree that the post would have to appeal to their experience in some way. Teacher A2 said:

> I do not participate that much with comments. But if I were, it would have to be something relating to a situation or something which I can relate and feel I have something to contribute based on my experience.

In the interview with A1 an unscripted follow up question on if he felt some posters might have some strategies to engage the groups. In retrospect the question might have been a bit leading as Teacher A1 confronted the researcher about if this question had something to do with a specific group of posters. When asked to explain what he meant, teacher A1 explained:

> Well, as you might have noticed there are some people in the group who post more than others, you have seen this?

The researcher confirmed this and teacher A1 continued.

> Okay so then you know what I am talking about, there are a couple of people who do a great job at creating some interesting discussions on the group. There is especially "Teacher Z"[4] who I have been talking to a bit and he is very good at this.

When asked what made Teacher Z's posts engaging, teacher A2 answered:

> Usually they are structured as topics that has to do with teaching. Like recently he/she talked posted about grading and how to do this more efficiently. Teacher Z uses his/her own experience as a place to start and then asks how others deal with the same situation. For me, I do not often get to discuss such specific practical topics with teachers from other schools or other parts of the country. However, here we get to discuss it with other teachers, and it becomes more of an open discussion. Honestly, I would say people like Teacher Z contributes equally as much to make teachers reflect on their professions as universities does.

[4] Name given in interview is withheld due to privacy concerns. The name Teacher Z is therefore used to refer to this individual.

A few things to note from this interview response. First, was that the posts made by Teacher Z (whom was confirmed after the interview to be one of the facilitators identified earlier) was framed around personal experiences. Secondly, were that Teacher Z's posts are formulated as open-ended questions encouraging teachers to share their experience or perspective on a topic. This finding was found to be linked with the facilitators discussed in 4.1.4. This will be further elaborated on in the discussion chapter.

4.3.3 Exploring Ideas

The interview participant was read the post made by Teacher B. They were then asked what they thought about what Teacher B said about participating in the group making teachers reflect less on their own teaching. Teacher A1 explained he viewed participation as giving him a broader insight into how other teachers practice their profession.

> I personally think it is counterproductive for teachers to think this way about sharing things with each other. If one finds something that works great in their class, why should they not share it so more people can use it? It can only bring the profession further. I learn a lot about how I

When asked if he thought asking for resources or tips for things to use in the classroom made teachers reflect less during planning he answered:

> Yes I kind of get why some might think it makes teachers lazy and less reflective on their practice, but like I said before, how does it help the profession if we are so protective of what we make? I have no problem sharing ideas with my colleagues at work. I would say it is one of the key purposes of a collegium to be able to share experiences. It does not make you more lazy, it just frees up time to focus on more important part of planning. This is especially important for me who is new and do not have a routine to fall back on.

Teacher A2 perception of learning and reflection in the Facebook group was indicated to be one of exploring ideas. She answered that she did not personally find asking or finding help in the group to make her reflect less on what she was planning. She argued that what she gained from the group was a place to start or a "nudge" in a direction to look. She explained that taking the knowledge she gained and working it into her teaching is where she reflected most during planning and this process is what gave her the most learning outcome.

> Usually I find something that strikes interest, and then I take that concept and build my own set of activities around it. I do still have to make the work to make it fit my situation. For instance, I found this great resource with flashcards, tasks and other good stuff to use with the movie Rabbit Proof Fence. However, I had to adjust the activities to the teaching goals etc. But by not having to make flash cards or formulate the tasks I could focus on other things, like adapted learning.

She further explained that she generally did not actively search for resources. Instead, how she used the group in this regard was as a curator for ideas and content that might inspire her, which she then saved for later use.

> However, it is rare that I actually search for something in there. Usually something just pops up which I think looks interesting and then I save that to a folder I have on my computer or take a note of it. I guess it is more a place to find an idea than an actual way of accomplishing something

One of the key benefits teachers gain from participating in the group, as indicated by both interview participants, is that by getting ideas from the group it allows them to free up time to focus on other parts of their work. Teacher A2 mentioned being able to focus on teaching aims and adapted learning. This was especially relevant for Teacher A2, because she still felt new in her profession and did not have the "routine" to fall back on.

4.3.4 Teachers Sharing Experiences: A Source for Social Support and Authentic Learning

When asked what he thought about teachers sharing experiences in the group, Teacher A1 identified that reading other teachers' experiences was beneficial because it provided authentic learning. One such example from the interview was:

> I really enjoy reading and discussing specific issues teachers have in their profession. People discussing cases with students who have special requirements for instance and how to deal with them as a teacher is something you can get, other than outside your own workplace. This profession is so unpredictable that discussing real situations with people who want help with how to deal with them helps improve all of us as teachers because we all become more prepared to tackle the unexpected.

Teacher A1's response suggested that reading experienced helped him be prepared for future challenges. The researcher coded this as indicative of how we define as *informational support*. In other words, it was found that the support Teache A1 felt was one of being prepared to problem solve possible future struggles. The teacher gave further response which indicated more types of support being gained from other teacher's experiences:

> There is also something really rewarding to give suggestions to teachers who are struggling with something you yourself has struggled with and can offer advice on. It makes me reflect a bit more on my own experience as useful and I guess I feel closer connected to the teaching community as a result.

This response was indicative of the teacher gaining more *emotional support* from responding to other teachers' experiences. This was found to be the case because the teacher indicated feeling more connected to the community and reflecting on his own experience as valuable to the community. This indicated a higher appreciation of oneself.

Teacher A2 also found reading teacher experiences as important. One such example being:

> It is great to read about some of the struggles other teachers have and how other people in the group help to address it. Especially for me who is new with teaching I feel like anything can happen which I am not prepared for. Although a lot of the issue's teachers ask about are likely to not happen to me, I find it somewhat comforting to see how teachers are so chill to tackle unexpected struggles. I

> guess it what I mean to say is that if things go to shit, I can look at the group to give me hope that there is probably a solution

Interesting to note is Teacher A2 mentioning finding comfort in seeing how more experienced teachers handle daily struggles. She indicates this gives her a sense of trust in her own abilities as a teacher, which indicates she perceives gaining emotional support from reading other experiences. Although she is not the one being comforted, seeing how other deal with their problems strengthens her own conviction to overcome her own struggles.

4.3.5 Lack of ICT Knowledge: Teachers Perspective on Sharing Experiences Involving Students

When the interview participants were asked what they thought about the potential of students being recognized in the experience's teacher share on Facebook, both participants expressed this was a concern they had. Teacher A1 stated:

> I will never discuss my students or situations at my school where someone might have even the slightest chance of identifying the situation or student. I think the cases of people losing their jobs due to negligence in their online behavior should serve as a reminder to us all that what you do online can come back and bite you in your ass

When asked what information they thought was too sensitive to share on Facebook both teachers explained they found it difficult to know for sure. They said that names and descriptions of a students was a something they would not share. However, when asked if for instance sharing what year the student attends were okay, both interviews participants expressed uncertainty. Both said they would probably not react if they read a post where this information was included. However, both also stated they suspected it might pose a risk to include the information. The researcher asked several follow up question such as "what could a potential risk be?" and "where do you see things going wrong?". Both teachers struggled to answer and explained that they simply did not know how to answer the questions. Both concluded they did not know enough about the subject to give a definitive answer. However, during the interview with teacher A1 he did explain a solution which he had seen others do: "[…] I also see some people send questions to the admins and have them share it for them. So, I guess that is one way of doing it? ". After the interview with teacher A1 the data material was examined for instances were administrators posted questions on behalf of group members. It was found that in some instances the group administrator would create posts starting with "ANONYMOUS QUESTION" or "QUESTION FROM GROUP MEMBER". These posts fit the description given by Teacher A1 in that they both were posted on behalf of group members and that they had questions about a difficult experience the teachers had with students. Although not many such posts were made (N=4), and they only elicited a low-level interaction from users, with an average IOI score of 20-28.

Teacher A2, who was interview after Teacher A1, was asked what she thought about the practice of having administrators post questions on behalf of group members. She expressed surprise that this was something that could be done.

5 Discussion

This thesis has set out to describe some characteristics of how teachers share knowledge in Facebook communities and to answer two specific questions: *How do teachers share experiences?* And *does ESL teacher's participation on Facebook contribute to their development of new skills or foster reflection on their practice?* The findings consist of both tendencies found in the content analysis, observation and self-reported data from interviews with two teachers from the community. The findings suggest that teachers are mostly engaged with knowledge which elicits abstract ideas and inspiration. It has further been found that most teachers post and asks for specific resources or tips on things to use in their teaching. Didactic reflection or reasoning have been found to be missing in the knowledge shared in the group. The exemption to this is a small group of facilitators who encourages discussions and reflections through their posts. Furthermore, multimedia content has been found to be highly popular to share as resources in the group. And lastly, in terms of sharing experiences, the research has indicated an issue with privacy for students being discussed by teachers using their own personal profile.

5.1 Characteristics of How Teacher Share knowledge

We will now use the findings made in the study to describe the characteristics of how Norwegian ESL teachers share knowledge with each other on SNS. Firstly, teachers appear to be more inclined to inquire about resources than any other type of knowledge. However, when it comes to what draws engagement from the community it appears teachers are less engaged with specific resources and more interested in finding sources for ideas and inspiration. Specifically, promoting abstract ideas and inspiration were key characteristic of higher engaging posts. This indicates that there exists a gap between the knowledge most teachers inquire about, and what most are engaged with. This gap was evident by the disproportionate amount of engagement elicited by the top 10% of high IOI scoring posts. These findings tell us two things. First, most teachers are looking for ideas in online spaces, and second, that a small number of posts contribute with sharing these ideas. However, this also suggest the community is reliant on a very small percentage of posts, sharing a specific type of idea or inspirational knowledge, to maintain high amounts of engagement. If we assume theories of communities of practice, we can posit this finding might suggest a weak foundation to the groups practice domain. Because without a sustained nurturing on these contributions to the practice domain of the group, a CoP is likely to lose its relevancy amongst the members (Wenger, 2005). Therefore, without these idea providing posts, teachers are likely to become less engaged and less productive in finding ways to develop their practice in the community.

The second characteristic found was that these communities provide good support for teachers to stay up to date with developments in their profession. Specific examples of this mentioned during the interviews were using the diversity of the community to identify new ways for students to cheat on tests. These cheating examples were also closely linked to the teachers lacking ICT knowledge. This could therefore be indicative of online learning being perceived as a source for knowledge that allows teachers to stay up to date on ICT developments. Siemens (2005) suggest that currency is an important

principle of networked learning and this type of learning is indicated to be important to members of the community.

Third characteristic to note is how teachers form knowledge through responses. Analysis of comments has shown a preference to share short, informational answers. Teachers rarely share long, or detailed responses and they rarely offer any form of comfort or sympathy. Instead, the groups commenting behavior suggest a very problem solving and practical-solution-oriented approach to address teachers' questions. The knowledge presented by these responses also lack substance when it comes to how and why they suggest what they do. Furthermore, most posts and comments offered little didactic reasoning or reflection.

The last characteristic we will cover has to do with how this community facilitate didactic reflection and reasoning. Teachers might have been oriented towards providing practical solutions, but this rarely included any form of didactic reasoning besides the occasional mentioning of teaching aims which could be covered. The major exemption to this tendency was the posts we categorized as *facilitator posts*. The interviews revealed the importance of individual users facilitating discussions. Teacher A1 specified in his interview that this group of teachers facilitates discussions on the teaching profession which elicited a type of authentic learning. These posts were found to not only elicit a deeper discussion on the teaching profession than other posts, but they also framed it around a greater didactic focus. In the content analysis we found that these facilitator posts were coded to mostly concern best practice, professional development, and classroom management strategies. This is markedly different for the rest of the posts collected which predominantly were coded as resource posts. This indicates these posts have a greater focus on the surrounding framework of learning, rather than the specific activities or resources themselves. Secondly, it was found that these posts engaged the community's reflective abilities by encouraging discussions on teaching both through their posts and comments. If we consider earlier studies made by Yeh (2010) and Lin et.al. (2007) on what makes communities function optimally when it comes to sharing, we see that it is important for strong communities to have these kinds of "thought leaders", i.e., members who contribute in a way that benefits the community first. It is therefore the conclusion that these facilitators provide a pivotal role in contributing to the group's reflection on the teaching profession.

However, it should be noted that this study did not identify many such facilitating posts or posters. The reason likely being that the research design we used in this study did not allow the researcher to keep track of individual user behavior within the dataset. Suggestions for how future research can expand on this finding is therefore suggested in chapter 7.

5.2 Trending Multimedia

Weblinks have been noted to be an important way for users to share knowledge in the group. Furthermore, analysis indicated a preference for sharing multimodal content and topical news stories. The amount of links found in the data material is not substantial enough to draw definite conclusions based in this finding alone. However, when triangulating with that the interview participants said about how they searched for resources in the group, their answers did indicate they specifically sought multimedia content and other content not available in their traditional sources of resources, like textbooks.

How teachers share knowledge with linking have not been explored in the reviewed literature. However, we can apply the principles of connectivism as a way of

explaining this tendency. As indicated by the interviews it appears a possible reason for teachers wanting to share multimodal content is that this is something that expand on their traditional resources, such as textbooks. Applying the principle of connectivism that new knowledge is more important in networked learning than what is already known can perhaps help explain this. Teachers appear to consider online discourses as a platform to find complimentary content they do not regularly get from their schools. Multimodal content and topical news are in this context a good example of resources textbooks cannot provide teachers.

However, another explanation to consider is that it is not the teachers themselves who encourage this sharing trend, but rather that it is the result of the technological framework. As argued by Siemens (2005) in the principles of connectivism, learning can reside in non-human appliances. The reason this principle is important to note in this context is that research has shown Facebook itself encourages the use of videos on their site (Houk & Thornhill, 2013; King, 2018; Rainie, Brenner, & Purcell, 2012), by making multimodal content be preferred by the recommended algorithm. King (2018) showed how video content suddenly became much more popular after 2014, based on a strategy change by Facebook and subsequent tweaking of the recommendation algorithms. Furthermore, even if the Facebook algorithms were not directly affecting the content shared in the group, it could still affect the perception users has with the platform and how they want to use it. If teachers have the perception that Facebook is a site associated with multimodal content, it is plausible it would be reflected in their own sharing behavior. As Downes (2005) argued with the principle of *inference*, what a learner chose to consume is also a big contribution to what knowledge they gain in distributed knowledge. If we go by the findings made by King (2018), that the recommendation algorithm puts an emphasis on promoting multimedia content, this might influence the type of content teachers in turn want to share.

There is therefore a possibility that the automatic systems on Facebook might influence what type of knowledge teachers want to share with each other. Confirming if this is really the case or what the implications this tendency has for the development of teacher's profession is not within the scope of this paper to cover. However, considering research shows teachers use SNS more and more for professional development, this tendency something future research should address.

5.3 Online Participation: A Source for Shortcuts or Reflection?

Both in the research literature and amongst participants in the Facebook group, we have seen a difference of opinions on what sort of reflection and learning online CoP's elicit. The question was therefore asked *does ESL teacher's participation on Facebook contribute to their development of new skills or fostered reflection on their practice?*

From the very outset of researching this question we preferences the importance of triangulating data to get a more comprehensive answer. We start by looking at the findings yielded from content analysis on how teachers share knowledge. *Resources inquiries* were the category of posts most reflecting the intention we might associate with "shortcuts". Resource-inquiries were used as a coding theme when users are engaging with finding something tangible to use which might help levitate workloads. When we analyzed the lower engaging posts, we found that resource-inquiries were indeed the overall most popular category for teachers to posts. In addition, both interviews, observation and content analysis has indicated that readymade solution are something teachers request. Furthermore, the posts and comments in the group has been shown to contain little didactive reflection on the knowledge shared in the group. The exemption

here being facilitator posts. Therefore, the claim that some teachers are looking for shortcuts in the group and that they reflect little on what they find is somewhat supported by the research. However, we need to keep in mind that what most users engaged with in the group was *idea-providing* post. This indicate that most teachers seek knowledge in this community in a similar manner as teacher A2 explained in her interview, to get inspiration or a place to start. It was suggested by Robson (2018) that participation in online communities gives teachers professional development through ideal reconceptualization. This is supported by the interview with teacher A2, and the tendency found in content analysis of teachers engaging with idea providing posts. However, the findings also support Macià and García's (2016) claim that teachers should combine the knowledge they gain in online CoPs with offline forms of traditional professional collaboration. Macià and García's (2016) argued that online environments are good at providing ideas for teachers, but that offline environments are better at providing reflective knowledge. We find support for Macià and García's claims when we consider the findings suggesting that didactive reflections are lacking in the online community. It is arguably the case that the group gives teachers many good and creative ideas on teaching. However, these ideas are lacking details and well-founded reasoning for their didactic or pedagogic benefits. The teachers will therefore still benefit from having someone to discuss these ideas with. We therefore arrive at the same conclusion as Macià and García that teachers will benefit most from combining the learning they gain from both online and offline networks.

5.4 Sharing Experiences Online: Both Useful and Problematic

When researching how teachers share experiences, especially those experiences involving students, there was noted to be a risk that the information shared might make it possible to identify individual student cases. The researcher was not able to identify specific students during observation. However, in three cases the researcher was able to identify the classes which the discussed students likely attended. In these cases, there was a potential that a person with knowledge of the teacher's workplace might be able to identity the student being discussed. This could potentially prove to be a privacy concern, especially seeing as we established in chapter 3.3 that the Facebook group can be considered public. However, the community appear to have found a way to avoid this issue by having administrators post on behalf of group members. This avoids the privacy issue mentioned because the issue was directly linked with teachers posting using their own personal profile. The current issue with administrators posting on behalf of teachers, is that the practice is indicated by the findings to not be completely adopted into the group's inner domain. Indications to this was that there were relatively few such posts was made by the administrators and that the posts that had been made elicited relatively little amount of engagement from users. These findings, combined with the interview response of Teacher A2, who were not aware that teachers could ask questions through the admins, tells us that the practice is not made clear enough to the group. We therefore conclude that there are indications that teachers posting about experiences involving students on Facebook currently presents an ethical issue.

However, based on the data, it is arguably the case that if made aware of the issue, the teachers will adjust. The first indication of this is that in the case of the post made by Teacher C, we saw the community react quickly and efficiently when they identified an issue with the post. A concern could have been, as earlier research by Avalos (2011) showed, that strong cultural beliefs might be making teachers not recognize the gap between suggested practice and existing beliefs. However, the

interviews indicated that users were not opposed to the idea that the information shared might be compromising. Instead they expressed uncertainty as to what information was acceptable to share and what was not. The researcher further noted during coding that *lack of ICT knowledge* was a recurring theme in these responses. We can therefore argue that this is a practice which is likely caused by a lack of knowledge on how traceable information can be online. If this knowledge were to be updated and fully ingrained in the group's inner domain, we would expect the community to largely enforce itself. The observation of the group revealed the groups used clever means to make members follow the group's values. Like Tseng & Kuo (2014) found, a big motivator for teachers to participate online is to further their own careers achievements. Some of the comments criticizing oversharing of information seem to be acutely aware of this when they specifically pointed to Teacher C's career could be affected if a student was recognized in a student case discussion online. The community is therefore shown to be very efficient at not only removing unwanted posts, but they also possess the ability to convey compelling reasons for their reactions. We therefore surmise that using third party mediators to post experiences on behalf of teachers is a good suggested practice for these communities. It is further suggested by these findings that online communities have shown the potential to enforce and avoid sharing of too much details if the community has clearly defined rules and norms that are ingrained in the community's inner domain.

The conclusion that these communities *can* be used ethically to share experiences is important. As the paper's findings suggest, sharing experiences is very beneficial to teacher's professional development. It was indicated during the interviews that reading about other teacher's experiences helped prepare the reader to tackle issues they otherwise might have not considered. Furthermore, the interview participants also suggested experiences shared online help inexperienced teachers with emotional support by allowing them to see how other teachers deal with problems and overcomes them. This is especially important as the content analysis revealed teachers generally give informational support to each other in this community. This has also been shown by the earlier research of Kelly & Antonio (2016) and Trepte et.al. (2015), who also concluded online CoP's primarily facilitate informational support. When experience sharing is a way for new teachers to gain emotional support and build confidence, then this represents one of the few areas found where this type of support is elicited by the online teacher community.

6 Conclusion

In this paper we described some of the characteristics of how Norwegian ESL teachers share knowledge on Facebook. We have also covered how they use the group to share experiences, where we have identified some issues, benefits and suggested practices. Furthermore, we have looked at if participation on Facebook contribute to teacher's development of new skills or fostered reflection on their practice.

The characteristics we found regarding how teachers share knowledge show that there is a gap between what most teachers ask for in the community and what most teachers engages with. These findings suggest the community is largely dependent on a small group of posts on the site who provide the idea-providing knowledge teachers are engaging with. This has led the research to conclude that these communities might have issues to function as Communities of Practice if these idea-providing posters were to stop contributing in the long term.

Another important characteristic of how teachers share knowledge is a prominent focus on sharing multimodal content. The research does not provide findings for us to make any certain conclusion on the reason for this. However, interviews have shown teachers associate the online community with a place to obtain resources not associated with traditional resources such as textbooks. Another possible reason is found in earlier research which indicate Facebook themselves promotes multimedia content on their site to a greater extent than other content.

The research has also found that teachers need to be more educated on what they share on the internet and how they do it. Posting experiences using a personal social media profile has been found to pose issues because of the link between teachers online and offline networks. However, we found that this issue can be resolved if the community clarify their suggested practice of using third party mediators to share experiences on behalf of teachers. The research further concludes that when teachers share experiences online, they provide the community with informational support and emotional support.

The question was raised whether the community elicited learning and reflection on teaching. The research concludes that online knowledge is not a source of shortcuts for teachers. Instead, the online communities provide ideas and concepts which help broaden the teacher's perspective on what is possible to do. These ideas provide teachers with a place to start when planning their teaching. However, the lack of didactive reflection and reasoning found in the content posted in the group also makes us postulate that online knowledge should be combined with more traditional forms of professional collaboration. We therefore conclude that while the online community have many benefits for developing teachers' skills and learning, they do not replace traditional forms of professional collaborations when it comes to reflection.

7 Limitations and Further Research

This project is in large part exploratory in nature, and many of the findings have several alternative explanations. Some of these findings are therefore suggested to be further explored in order to establish more definitive evidence for why they occur.

The first findings with several explanations are the preference amongst teachers to share multimedia content on Facebook. We have found evidence to support the claim that teachers prefer to share these types of content. Why they do so is somewhat speculation on the part of the researcher. Comparing the findings with earlier research suggested the reason for this is that the technological framework learns its users to prefer sharing multimedia content. This is as earlier stated only a possible explanation, and so further research is needed. Especially interesting would be to see more research on how non-human appliance learning could influence teachers teaching practice when they participate in online communities.

Another suggestion for future researchers is consideration of the research design when conducting online studies. If this project were to have been done again a suggestion would have been to assign a unique id number to the different users when anonymizing the data. The way data was collected in this project involved removing all personal information from the data material. However, this also meant it was difficult to track tendencies in behavior across different users. We used observation to point out certain users and then make a note of them in the data. However, assigning a unique id to all the users would allow users to remain anonymous in the dataset, while also allowing for deeper analysis of individual user behavior. This would have made identifying group facilitators easier and yield more reliable results.

Future research on Facebook groups should also consider trying to acquire administrator access to the community one wants to research. Facebook offers a function called "group insight", which gives group administrators access to a lot of different forms of data, both statistical and text based. According to Facebook (2019), administrators have the choice to export the following group details: Growth (total members, pending members, approved requests and more), engagement (posts, comments, reactions, active members, top posts and more), members (top contributors). All this information can be exported in anonymized form to an .xls or .csv file which can be opened in excel or similar spreadsheet software. Had this option been made possible in this project it would not only have allowed the researcher to save several weeks of work, it would also minimize the risk of human error in processing data during collection. As data collected in this project has been manually collected and anonymized by the researcher, there is a possibility that human error can have occurred.

Lastly, we should mention that the timing for data collection has been noted to be a potential influence on several of the findings done in this project. By collecting data early in the semester, we are likely seeing teachers share a specific type on knowledge more aimed at planning the semester, rather than for instance test design and assessments which become more relevant towards the end of the semester. Facebook and other social networking sites have a great potential for tracking trends in people's interests. Therefore, suggestion for future research could be to track trends in what topic interests' teachers over the course of a semester. The previously suggested method of using group insight could potentially provide a new and innovative way of researching which topics and trends interests' teachers at different times. This can in turn allow

researchers to more easily stay up to date on quickly evolving trends in the teacher community.

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9 Appendix

9.1 Appendix 1 List of Facebook Groups For Teachers

Group name	Year created	How many members in 2019
Undervisningsopplegg	2009	57950
Arbeidstidsforhandlingene	2012	25088
Undervisningstips	2014	22981
Status Lærer	2014	20667
VURDERING FOR LÆRING - lærende nettverk	2015	17984
Kunst Og Håndverk Fra 1-7 Trinn	2015	15437
Matematikkdidaktikk	2013	15290
English Students	2015	12818
Norsk som andrespråk	2015	12401
Undervisningsopplegg - dele/kjøpe/selge	2015	12278
Førsteklasselærer	2015	12136
IPad i skolen	2011	11739
Engelsklærere	2013	10937
Ressurser til grunnskolen	2015	8017
Kunst- og håndverksoppgaver	2013	7870
Spesialpedagogisk forum	2012	6957
Andreklasselærer	2016	6450
Undervisningsopplegg ungdomstrinn	2015	6321
Norsklærere 2.0	2012	4917
GeoGebra. Norsk gruppe med hjelp og tips.	2010	4864
Bruk av nettbrett i skulen.	2013	4816
IPad i tilpasset opplæring	2012	4582
Skoleledelse for fremtiden	2013	4304
Tredjeklasselærer	2016	4098
Kunst og design i skolen	2010	4032
DYSLEKSI NORGE, nytt om IKT.	2013	4032
Naturfagdidaktikk	2014	3817
IT og undervisning	2011	3792
Undervisningsopplegg naturfag og matematikk 1.-10. trinn	2015	3638
Musikklærere	2013	3434
Matematikkside for lærere i grunnskolen - del lær spør	2015	2885
IDEGRUPPE FOR SFO	2013	2776
Fjerdeklasselærer	2016	2560
Spansklærere i Norge	2010	2474
Samfunnsfagslærergruppen	2015	2469
Matematikkdidaktikk for barnetrinnet	2015	2419

Jeg er lærer, og jeg elsker det! - La lærere være lærere	2014	2327
Norskdidaktikk	2015	2302
RLE-lærergruppa	2014	2222
Brettet	2012	2155
Matematikktips	2016	2122
Smart læring MOOC	2014	1934
UNDERVISNINGSOPPLEGG videregående skole	2015	1746
Lær Kidsa Koding lærernettverk	2014	1710
Læring i en digital tid - Learning in a digital age. Disruptive Education	2012	1628
Utviklende opplæring i matematikk	2015	1474
Følgegruppen Grunnskolelærerutdanning	2010	1416
Landslaget for mat og helse i skolen (LMHS)	2011	1276
Nordic Teacher's forum	2014	1229
Teaching English in Vgs (Norway)	2012	1207
Fransklærere i Norge	2013	1198
Spesifikke Språkvansker (ssv)	2013	1022

Table 14 All Facebook groups aimed at Norwegian educators with over 1000 members. Sorted by number of members.

9.2 Appendix 2 Interview Guide

Verbal Consent

Would you like to participate in this interview?

- Verbal Consent was obtained from the study participant
- Verbal Consent was NOT obtained from the study participant

Separate consent form to be handed out and signed before interview. Verbal consent is to confirm the case informant has not changed his/her mind on participating.

INSTRUCTIONS FOR USE

Always bear in mind that this interview plan should be used in a flexible manner. It can be adapted, if necessary, to the topics the interviewer seeks to explore, the type of informant being interviewed, and so forth.

The proposed plan begins with a section entitled "Introduction of interviewer", which can easily be adapted to the interview situation. The important thing is that the interviewer introduces himself/herself and reminds the respondent of the topics that will be discussed during the interview. In this way, the respondent knows exactly what the interviewer's expectations are.

The interviewer does not have to ask all the questions proposed in the interview plan. They merely have to follow the general outline.

To make the interview flow more easily, it can be useful to summarize each topic just discussed before moving on to another one. The interview will also flow better if interviewers ask the main questions first whenever they introduce a new topic. In any event, the interviewer must choose questions with which he/she is at ease and which are adapted to the interviewee.

If respondents have difficulty identifying specifics in the question, the interviewer can give some examples, but they must not suggest answers.

Topic/theme	Question
Introduction	Introduce the research topic, how interviews will be used in the study and how data collected during the interview will be processed and stored. Also mention that participation is voluntary, and consent can be retracted at any time by using the contact information provided in the consent form.
Background	How long have you been teaching?
	At what level do you teach?
	How long have you been a member of the Facebook group Engelsklærere?
Participant Role	Describe some of the things you do on the Facebook group.
Participant Role	Have you ever posted anything in the Facebook group? If so, what was it.
Community Participation	How did you come to be a member of the group?
Community Participation	What was your expectations of the other members when sought membership in the group?
Knowledge Facilitation	What would make you want to comment on a post? Are there any special characteristics with a post that would make you more interested in it?
Knowledge facilitation, Exploring ideas	Do you feel the group gives you new knowledge about teaching English? If so, in what way?
Participant Role	Read post from Teacher B. What do you think of this teachers opinions?
Knowledge facilitation, Exploring ideas	Have you ever asked the group for tips on resources? If yes, what examples of resources were/are you interested in acquiring from the group? If no, are there resources you could be interested in acquiring?
Knowledge facilitation,	Have you used anything posted in the group in your own teaching? If so, what did you use? And how did you go about using it?
Knowledge facilitation, Exploring ideas.	Do you ever search for specific resources to use in your own teaching? If so, what do you look for in these resources?
Authentic learning,	Have you ever shared an experience you had as a teacher with the group?
Authentic learning	What is your opinion on teachers sharing experiences from their workplace with the group?
ICT Knowledge	What do you think of the potential risk of others identifying people mentioned in experiences? Do you consider this a possibility?
ICT Knowledge	What information do you deem safe to share about students? And where do you believe is the limit to what should be allowed to share?

Social support	Have you ever asked the group for help with a problem you had as a teacher? If so, what did you ask about? If there are more than one example, are there specific topics you find especially helpful to enquire about in the group?
Rounding off	Do you have anything else you feel has not been brought up?

9.3 Appendix 3 NSD Assessment

NSD NORSK SENTER FOR FORSKNINGSDATA

NSD sin vurdering

Prosjekttittel

Online Community of Practice Amongst English Teachers

Referansenummer

828227

Registrert

09.08.2018 av Lasse Georg Tønnessen - lasse.g.tonnessen@ntnu.no

Behandlingsansvarlig institusjon

NTNU Norges teknisk-naturvitenskapelige universitet / Fakultet for samfunns- og utdanningsvitenskap (SU) / Institutt for lærerutdanning

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Anna Krulatz, anna.m.krulatz@ntnu.no, tlf: 90368258

Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

Lasse Georg Tønnessen, lasse.g.tonnessen@ntnu.no, tlf: 47247624

Prosjektperiode

01.08.2018 - 01.07.2019

Status

07.12.2018 - Vurdert

Vurdering (1)

07.12.2018 - Vurdert

BAKGRUNN
Deler av datainnsamlingen i prosjektet innebærer observasjon på sosiale medier. Gjennom dialog med studenten og meldeskjemaet forstår NSD det slik at det ikke skal innhentes/registreres identifiserende opplysninger om enkeltpersoner fra observasjonen på sosiale medier. Ettersom det ikke behandles personopplysninger i denne delen av datainnsamlingen er dette en del som ikke skal vurderes av NSD og som faller utenfor personvernlovgivningens virkeområde.

NSD SIN VURDERING
Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg 07.12.2018, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

MELD ENDRINGER
Dersom behandlingen av personopplysninger endrer seg, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. På våre nettsider informerer vi om hvilke endringer som må meldes. Vent på svar før endringer gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET
Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 01.07.2019.

LOVLIG GRUNNLAG
Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER
NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER
Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER
NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET
NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Kontaktperson hos NSD: Belinda Gloppen Helle
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

9.4 Appendix 4: Information Letter for Interview Informants

Are you interested in taking part in the research project *"English Teachers use of Facebook groups for collegial support"*?

-

- This is an inquiry about participation in a research project where the main purpose is to *examine, identify, and described the characteristics and ways in which English teachers participate and promote teaching and learning through discourse in an online community on Facebook*. In this letter we will give you information about the purpose of the project and what your participation will involve.

- **Purpose of the project**

The purpose of this master's thesis project is to examine the ways teachers use collegial groups on Facebook to participate and promote learning amongst each other.

Who is responsible for the research project?

NTNU Norges teknisk-naturvitenskapelige universitet / Fakultet for samfunns- og utdanningsvitenskap (SU) / Institutt for lærerutdanning is the institution responsible for the project.

Why are you being asked to participate?

You have been active on the Facebook group "Engelsklærere" and has for this reason been approached to participate in this project.

- **What does participation involve for you?**

If you chose to take part in the project, this will involve participating in an interview session. It will take approx. 30-45 min. The interview includes questions about how you as a teacher believe your usage of a Facebook groups affect your profession.

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

- *Those with access to the personal data are Lasse Georg Tønnessen (student) and Anna Krulatz (project supervisor).*
- *Any personal information collected during this project will be processed on a work computer provided by NTNU*
- *Data will also be stored on an Microsoft Office 365 account provided and administered by NTNU.*

Any personal information will be anonymized before publication and all participants will not be recognizable in the final data material.

What will happen to your personal data at the end of the research project?

The project is scheduled to end *[01.07.2019], at which time all personal information will be deleted.*

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you

- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?
We will process your personal data based on your consent.

Based on an agreement with *NTNU*, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?
If you have questions about the project, or want to exercise your rights, contact:

- *Lasse Georg Tønnessen, by email (lasse.g.tonnessen@ntnu.no) or telephone: +47 24 76 24.*
- *Alternativly you can contact the project supervisor Anna Krulatz, by email (anna.m.krulatz@ntnu.no) or telephone +47 90 36 82 58*
- NSD – The Norwegian Centre for Research Data AS, by email (personvernombudet@nsd.no) or by telephone: +47 55 58 21 17.

Yours sincerely,

Lasse Georg Tønnessen

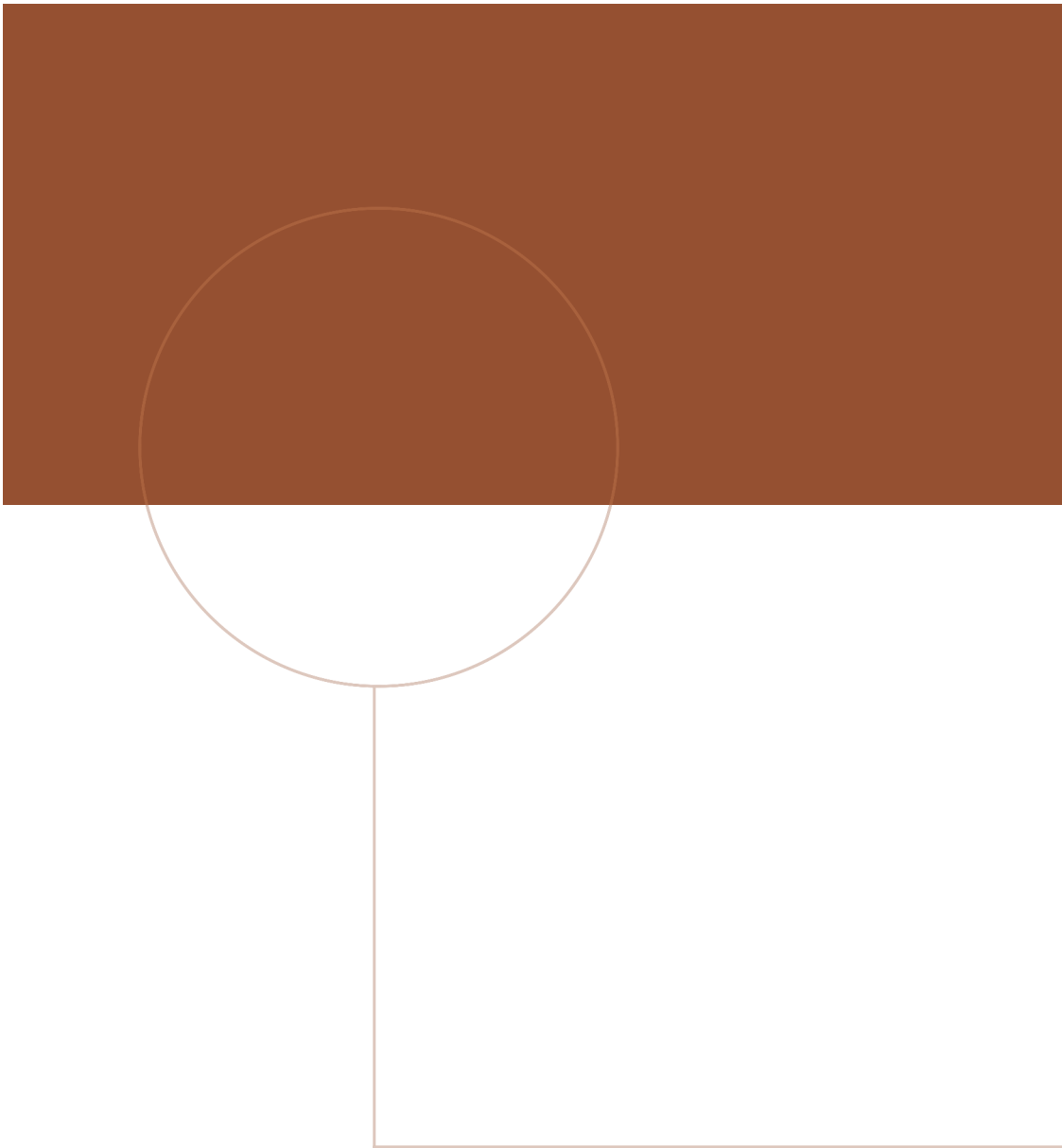
Consent form

I have received and understood information about the project *[insert project title]* and have been given the opportunity to ask questions. I give consent:

☐ to participate in *an interview*

I give consent for my personal data to be processed until the end date of the project, approx. *[01.07.2019]*

(Signed by participant, date)



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