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Co-learning in a Digital Community: Information Literacy and Views on Learning in Pre-School Teacher Education

Fredrik Hanell ^[0000-0002-6184-6603]

Linnaeus University, 35106, Växjö, Sweden
fredrik.hanell@lnu.se

Abstract. Through analysing how different views on learning enable pre-school teacher students to distinguish and use affordances offered by digital tools and the learning environment, this paper seeks to connect modes of appropriation, identity positions and information activities to types of information literacy. Identity, particularly views on learning, is analysed to find out how a Facebook group to some students remains a sustainable digital community throughout teacher education. The paper reports results from a netnographical study conducted between 2012 and 2015. The material used in the analysis consists primarily of 12 semi-structured student interviews and 6 teacher interviews. In the thematic analysis, a socio-cultural perspective on identity is applied. The concept affordance is used to analyse how identity is connected to use of digital tools and the learning environment. The findings show how the appropriation of the Facebook group is connected to identity positions and views on learning in two types of information literacy: a relational information literacy and a pragmatic information literacy. The normative function of co-learning is found to be an important aspect of the learning environment of pre-school teacher education that explains why the digital community can be experienced as either including or excluding.

Keywords: Information literacy, Pre-school teacher education, Identity, Learning, Social media.

1 Introduction

Digitalisation is transforming society in a multitude of ways as communication and use of information increasingly is mediated by digital tools. In the education sector, commercial actors and policy makers are pushing digital tools into educational settings [1-2] promoting substantial public investments in digital infrastructure. Simultaneously, individual students and teachers employ popular digital tools in creative ways to realise “new” ways of learning [e.g. 3-4]. In a recently completed PhD-project¹, a netnographic study conducted between 2012 – 2015 sheds light on the meeting between Swedish teacher education and new forms of literacies connected to use of digital tools. In the

¹ This paper is based on a PhD-project partly reported in [5-7] and published in full in Swedish as [8].

netnographic tradition where ethnographic methods are applied to study online interactions [9-10] digital communities are often a starting point. A digital community is a group of people that interacts socially and develops relations by means of a common (digital) place [9]. In this paper, I present key findings from the netnographic study that shows how affordances from the learning environment, digital tools and views on learning interact and can help to explain how a Facebook group to some students and teachers remains interesting and useful throughout the course of teacher education, making the group a sustainable digital community, while others left the group or chose not to participate actively.

A focal point in the reported study is the enactment of information literacies. In the context of this paper, information literacy is understood as an aspect of a practice, such as digital group-based learning, consisting of information activities performed to achieve specific goals in a specific context. The cultural dimension of information literacy in pre-school teacher education has been studied previously through analysing how students perform and describe information activities as digital tools are used and appropriated [5-6]. Two modes of appropriating a Facebook group have been identified: as a relation-building tool and as a collaborative problem-solving tool [5]. When appropriated as a relation-building tool, central information activities include initiating open discussions and using humour and irony to build relations. Students appropriating the group as a collaborative problem-solving tool instead request and share information directly connected to teacher education. In this paper, the psychological dimension of information literacy is focused through the concept identity, particularly views on learning. This paper therefore elaborates on and deepens previous research on how different identity positions (discussion-oriented student, goal-oriented student and customer-oriented student) can be connected to different ways of sharing information in pre-school teacher education [7]. Through analysing how different views on learning enable students to distinguish and use affordances offered by digital tools and the learning environment, this paper seeks to connect modes of appropriation, identity positions and information activities to types of information literacy. Two research questions guide this investigation:

1. How can modes of appropriation, identity positions and information activities be connected to types of information literacy as students use a Facebook group during pre-school teacher education?
2. How can views on learning explain how the Facebook group for some students remained interesting and useful throughout teacher education while other students left the group or chose to be inactive participants?

2 Theoretical Framework

The socio-cultural perspective applied in this paper draws our attention to how human actions are mediated by tools and situated in social settings [11]. Applied to information

literacy, a socio-cultural perspective makes clear that "people's use of information cannot be meaningfully separated from the tools that are an integral part of social practices" [12, p. 95]. Scribner and Cole [13] describes literacy as having both a cultural and a psychological dimension. Literacy, understood as "socially organized practices which make use of a symbol system and a technology for producing and disseminating it" [13, p. 236], therefore entails both the cultural aspects of how tools mediate, for example, written language and the psychological dimensions of how individuals conceptualise and learn written language. In this paper, Scribner and Cole's view on literacy is used as a point of departure to frame information literacy as an aspect of socially organized practices. Pre-school teacher education is considered an overarching practice, including several practices such as digital, group-based learning. Information literacy, as an aspect of the social practice of pre-school teacher education, can be studied by analysing information activities, connected to specific practices, and accounts of these activities.

A socio-cultural perspective on identity, as suggested by Penuel and Wertsch [14], conceptualises identity as commitment in three domains [15-16]: fidelity (commitment to persons you trust), ideology (commitment to ideas making the world and your place in it comprehensible), and work (commitment to a career choice that may realise hopes for the future). Understood in this way, identity is an important aspect for understanding how – and why – tools are appropriated and information activities performed [cf. 7]. To facilitate the analysis of how identity is connected to use of digital tools and properties of the learning environment, the concept affordance is used.

Affordances describe properties in the environment related to the capabilities of an individual to use them [17]. Hence, affordances can be seen as identified social situations or material properties that may mediate actions in a certain situation. A crucial aspect of learning is consequently the ability to identify and use affordances. In this paper, the concept affordance is used as an analytical tool to integrate enabling and constraining properties of tools and settings, including identity and views on learning, in the analysis of accounts of information activities. Accounts of information literacy are always connected to norms, for example descriptions of how learning takes place [18]. Identity and values of the individual as well as norms within the social practices where the individual acts therefore affect the identification of affordances.

3 Previous Research

Swedish pre-school teacher education is rooted in a seminar tradition, educating teachers for younger pupils, and Fröbel-seminars educating kindergarten teachers [19]. Friedrich Fröbel – pedagogue and philosopher – viewed children as human plants in need of good care to realise their potential, and teachers as "gardeners" providing supervision and suitable conditions rather than formal instruction [19]. The importance of free play, creativity, social interaction and relations as a foundation for learning are still communicated in pre-school teacher education, something we will return to below when views on learning are discussed.

A common ground for practice-oriented research on information literacy, and much research on digital literacy, is how for example Scribner and Cole [13] frame literacy

as socially constructed and consisting of both technical skills and meaning-making aspects. Researchers in this tradition, studying the Swedish context, describe a gap between the ideas behind information literacy conveyed in school and changes in pupils' information activities when digital tools are used [e.g. 20-22]. Several studies [e.g. 22-26] also point out that schools and higher education need to better support the development of a literacy with a deeper critical understanding of use of digital tools. These previous studies suggest a negotiation taking place in the meeting between formal education and digital tools where information activities, views on education and views on digital tools are reshaped. They also suggest we need a better understanding of the complexity of young people's education-related use of digital tools if the formal education system is to support the development of more critical forms of literacy. The present study seeks to contribute in addressing this issue.

Within information literacy research, identity can be used as an analytical tool to deepen our understanding of how information activities are performed. From different perspectives, LIS-researchers have made the relation between identity and information literacy visible: Lloyd [27] and Sundin [28] explore the development of professional identity, Meyers [29] investigates identity construction among children in virtual settings, Rivano Eckerdal [30] studies young women's conversations about contraceptives, and Hjøllund [23] explores social media use in upper-secondary school. However, further research is needed to better understand how identity is related to information literacy in educational settings. When it comes to teacher students, there seems to be no previous studies of the connection between information activities and identity.

LIS-research on Facebook use in educational settings has focused on issues connected to information literacy and information sharing. Schreiber [31] shows how a Facebook practice can overlap the written assignment practice among university students. Hjøllund [23] demonstrates how use of Facebook among pupils in upper-secondary school can provide new opportunities to express identity and use information, but at the same time, the urge to receive satisfaction from affirmation by others on Facebook can divert attention from formal learning. Similar to boyd [32], Hjøllund also points out that digital tools can lead to an overlap of different contexts. Research on information sharing shows that the materiality of tools affect how information is shared [33], and Mansour and Francke [34] illustrate how information sharing is related to assessment of credibility. Among general Facebook users, Syn & Oh [35] find that social engagement is the most important motivation to share information on Facebook. The interest in materiality and credibility distinguishes LIS-studies from the high number of other studies of information sharing on Facebook.

Since most students are familiar with Facebook and use it more frequently than other digital platforms, it is attractive to use in higher education [36]. Facebook groups seem to be the most popular function since they are suitable for information sharing (as shared information is accessible for everyone in the group simultaneously regardless of time and place) and afford specialized content-driven communication [37]. Previous studies also suggest that students appreciate to be able to reach teachers swiftly in an informal setting [38] and Facebook may also provide a unique way to nurture relationships between teachers and students [39, cf. 4]. According to Aaen and Dalsgaard [37],

there is a lack of studies that include the context around Facebook groups, such as physical settings and other digital tools. Similarly, Greenhow and Lewin [40] suggest that there is a need for ethnographic accounts of how digital tools are used for learning, in a wider sense than just formal learning, something that the present study contributes with.

Similar to other studies of Facebook use in education settings, studies focusing on teacher education [41-42] find that Facebook groups can offer teacher students valuable opportunities for communication and facilitate learning. How identities of teacher students are expressed and shaped in digital settings is fairly unexplored [43], even though identity is considered to be a crucial component affecting perspectives and ways of acting among teachers [44]. In a study of a student-led Facebook group (without teachers) Lu and Curwood [43] investigate how teacher students identities develop. In line with previous studies, the authors find that most of the students remained passive partly because they believed a verbal minority used the group to express themselves. We will return to the reasons behind why some students are highly active, while others avoid using a Facebook group actively, when the results are presented and discussed below. Next, the design of the present study will be described.

4 Research Design

This paper reports results from a netnographical study at a Swedish pre-school teacher education² conducted between 2012 and 2015. Netnography is an ethnographic approach for doing research online [9-10]. As mentioned above, a starting point for several netnographic studies is the concept digital³ communities. A digital community is a group of people interacting socially, developing relations through a common (digital) place facilitating this interaction [9]. Digital communities represent a part of people's everyday experiences on internet and are used for both information sharing and emotional support. Recently, anthropological research has questioned concepts such as community, leading Kozinets [10] to reconsider digital communities as the starting point for netnographic research. Because of how the numerous contexts and opportunities for interaction offered by the internet interacts with – and intensify – the multifaceted and situational properties of identities, it may be problematic to describe persons interacting in a Facebook group as members of a community. For these reasons, Kozinets [10, p. 100] reframes netnography as an approach for studying social experiences online, or "online networks of social interaction and experience". While uncritical overuse of the community concept is questionable, I still consider digital community a useful term to describe the Facebook group discussed in this paper. In line with the theoretical underpinnings of the study, shifting identity positions and ways of using and understanding the group are considered even though I apply the community concept.

² Swedish pre-school teacher education is a 3.5-year university education (210 credits in the European Credit and Accumulation System).

³ Kozinets speaks of "online communities" but in this paper, I choose to use "digital communities" which also is in line with the notion of a "digital place".

The digital community studied is a Facebook group used by teachers and more than 200 pre-school teacher students enrolled in teacher education 2011.

Material generated by the study includes online material, mainly from the Facebook group used by students and teachers, but also field notes from participant observations, transcribed interviews and a field diary.

Table 1. Material generated by the netnographic study.

Part of the study	Material
Part 1 (April-June 2012)	201 conversations from the Facebook group. Interviews with 3 students and 2 teachers. 11 pages of field notes.
Part 2 (November 2013-February 2014)	147 conversations from the Facebook group, 104 conversations from the Facebook groups of two teams. Material from Google Drive, Prezi, and blogs. Interviews with 9 students and 4 teachers. 27 pages of field notes and 4 pages of field diary.
Part 3 (September 2014-January 2015)	83 conversations from the Facebook group. 3 pages of field notes.

Throughout the study, conversations from Facebook groups and material from other digital tools were collected in text documents and coded thematically. In the analysis, conversations were also studied naturalistically, as they were unfolding in the Facebook group, to better understand the experience of the interface and the graphic content.

To gain a deeper understanding of the participants use and understanding of digital tools in the learning environment of teacher education, I was active in the field *in corpore* [9] during the second part of the study, and detailed field notes and a field diary were produced. Interviews were conducted during the first two parts of the study, and they were analysed to contextualise and validate results from digital interactions [45] and to better understand the perspective of the participants [46] – something particularly important when analysing identity. Given the aim of this paper, the findings primarily report results from the analysed interviews. Applying a socio-cultural perspective on information literacy, I analysed the netnographical material using the concepts affordances and identity. The analytical concept affordance was used to investigate the interplay between enabling and constraining factors of the learning environment, appropriation of digital tools and identity. Inspired by theoretically informed ethnography [47], the inductive process of coding also contained a cross-fertilisation between theory and empirical material. Recurring themes of interviews, conversations and observations were identified and comparatively analysed to highlight similarities and significant differences.

5 Results and Analysis

The use of the Facebook group in the socio-cultural setting of pre-school teacher education is carried out in relation to, and partly as a response to, enabling and constraining properties of other tools, material and organizational aspects of university education, and norms of the learning environment.

5.1 Enabling and Constraining Properties of Digital Tools

One important tool is the virtual learning environment (VLE) that teachers and students are prescribed to use by the university. In several accounts, the VLE is described as a necessary, but inadequate, tool for the pedagogical needs at the teacher education. The VLE can be said to serve as a backdrop that illuminates the affordances of other digital tools by example of its own shortcomings. When it comes to the Facebook group, it is particularly the enabling of discussions that makes the tool interesting according to Kristian, a teacher:

But this Facebook group is for discussion. About things related to our education, about pre-school and learning in general, and about children and young people. For us who share this interest – here we can meet, it is a meeting place. [The VLE] carries official course- or education information. That is there. That is where documents such as course guides and course plans are. And there is, like, official statements from course leaders. Then we can talk about it in the Facebook group. Interview with Kristian, 120608⁴

Thus, Kristian views the VLE as a vehicle for formal course information while the Facebook group offers a place for students and teachers to discuss course content and share information concerning issues related to pre-school teacher education. This view is often shared by students who appropriate the group as a relation-building tool while students who appropriate the group as a collaborative problem-solving tool tend to consider it a channel for sharing official course information [5]. The teacher Kenneth, similar to Kristian, describes the difference between the VLE and the group in terms of meeting the students in various types of conversations:

I am often very happy to get this look behind the scenes. That's based on an idea that I am not comfortable in this simple teacher role. I mean where it is about course plans, transfer and assessment. If I hadn't had any other ambitions I would probably have remained on [the VLE] because it would have been easier for everyone involved. If I have the idea that I want the students to meet children as humans, and not hide behind a teacher role, I think that then I should try to live it on a university level – I want to meet students not only as students but also in other conversations. Interview with Kenneth, 140108

⁴ All quotes have been translated from Swedish by the author.

This quote illustrates the identification of two affordances – properties of the environment enabling actions [17] – connected to certain norms when it comes to how learning is understood: the group enables discussions and a more equal dialogue between students and teachers. While the VLE might be suitable for the “simple teacher role”, the Facebook group better facilitates informal communication where students are approached not merely as students. Kenneth suggests another teacher role, connected to a certain view on learning, stipulating that in conversations beyond assessment and transfer of knowledge, students and teachers should be able to meet and discuss as people (we will return to norms and views of learning below). In this view, the overlap of different contexts made possible by social media is considered constructive, as opposed to findings from previous research on school pupils’ information literacy [23].

5.2 Material and Organizational Aspects of the University Education

The learning environment comes with constraining properties in terms of limited contact hours, and few chances of physical meetings, between students and teachers. This poses a challenge for Kenneth who seeks to teach and interact with the students through “nurturing relationships”, something that is difficult when opportunities to meet with students are scarce: “the idea that relations are something that you nurture and develop is not working during this course. I basically only meet them for assessment” (Interview with Kenneth, 120530). Therefore, the group becomes an important arena for regular contact between students and teachers and for nurturing relationships, something that Kenneth and other teachers believes to be a necessary condition for learning. A post to the group made by Kristian exemplifies a type of information activity where affordances of the group are used to nurture relationships:

Today and yesterday have been fun days at work. I have you to thank for that.
Nice.

Let’s continue like this! Facebook conversation, 120417

Drawing on how Moll et al. [48] describe the nurturing of relationships as important for learning, Francis [4] suggests that nurturing practices are vital when students collaborate online. The nurturing of relationships can create a sense of familiarity and makes it easier to ask for, and to receive, assistance from others. Nurturing practices afforded by the group are a necessary component that allows the teacher students to appropriate the group as a tool for learning, either as a relation-building tool or as a collaborative problem-solving tool [5].

From a student perspective, Anna argues that the Facebook group is important since the entire class with more than 200 students lacks other functional ways to communicate and get together. The students only meet for “some lectures or so, but then you don’t talk to each other, you only see each other. So we really only talk through [the Facebook group]” (Interview with Anna, 120530). This means that the group is appealing to both students and teachers who want to engage in discussions in addition to the few opportunities provided by lectures and seminars. The socio-cultural setting of pre-

school teacher education seems to provide few alternatives to practice the ideals of learning emphasising open discussions and meetings with others. In practice, opportunities to nurture and build relations and to create a learning environment that teachers such as Kristian and Kenneth envision are severely constrained due to limitations connected to few contact hours with students and large groups of students during lectures. For these reasons, the affordances offered by the group are important to achieve the pedagogical ideals conveyed by Kristian and Kenneth – in particular to support open discussions and the nurturing of relationships – ideals shared by students positioning themselves as discussion-oriented students [7].

These affordances of the Facebook group are not identified or appreciated by everyone. Some teachers and students see problems with how the group is used for open discussions, in particular when anxious students use the group to request formal information: “it become that kind of hysteria as soon as some small, small thing happened. Instead of checking with your group’s teacher you blurted out to [...] the Facebook group” (Interview with Linus, 140107). Another student critiques how the group is used to share information with low topical relevance to teacher education: “it was only actually, excuse the phrase, but pure shit written there. [...] So you felt, no, this is like completely unserious, I shan’t be a part of this” (Interview with Kristoffer, 140130). Similarly, Erik is sceptical of the advantages of the group, even though he remains a member: “to me the [Facebook group] is just a road to anxiety. [Karl laughs] Because there are, there are too many with different ideas and in the end, you sit there and think: I have gone about it...completely...wrong” (Interview with Karl and Erik, 131218).

By critiquing a perceived lack of relevant and correct information useful for their studies, Linus, Kristoffer and Erik provide examples of the identity position goal-oriented student [7]. As opposed to students who position themselves as discussion-oriented students and appropriate the group as a tool for relation-building, goal-oriented students tend not to fully acknowledge the value of joking or informal conversation as components of the nurturing practices mentioned above. This is not to say that students who position themselves as goal-oriented students are not at all interested in the nurturing capacities of the group. However, the examples above from goal-oriented students suggest that when conversations create insecurity, anxiety or frustration, the effect can be the opposite of nurturing or relation-building. This observation echoes findings from previous research [43] suggesting that repeated sharing of information by a few individuals that seems irrelevant to others can discourage several students from participating in conversations. Both an uneven level of activity and different perceptions of the purpose of a Facebook group seem to be recurring issues when Facebook is used in educational settings. As suggested above, a key to understand how use of the group is understood and justified among the students and teachers is how learning is understood as co-learning. Next, we will explore co-learning and how different views on learning can explain how affordances of digital tools are identified and how information activities are undertaken.

5.3 Norms of the Learning Environment

A part of the learning environment that deeply affects how affordances of digital tools are identified, understood and used in pre-school teacher education is norms connected to views on learning. The view on learning as co-learning is identified in Hanell [7] as an ideological form of commitment [15-16] that shapes the identity position discussion-oriented learner and consequently affects how information is shared. The notion of co-learning affects how roles of students and teachers are perceived, and both students and teachers repeatedly refer to co-learning when they discuss their views of digital tools. From a socio-cultural perspective, a central idea is that tools mediate and shape both actions and cognitive processes [e.g. 11, 49]. However, when Anna reflects on how discussions and learning are affected by digital tools to some extent, she also points out that her view on learning might be more important than the tools she use. In an interview, Anna describes her motivation as a pre-school teacher student:

I like to discuss, things, I mean this co-learning – I like it. [...] Now if you think that you should work for co-learning, which is a bit like... Perhaps a concept in the world of pre-schooling, learning from each other... then perhaps you should do it yourself first. Interview with Anna, 131216

Similar to Anna, Irma describes how the notion of co-learning influences her actions as a student:

Now if we think about the idea of co-learning, and that it is this we – I – start with in any case. Otherwise I wouldn't even have come to school to begin with, but kind of be sitting with my text books. Interview with Irma, 131216

In line with how Anna describes the importance of her view on learning, Kristian asserts that his view on teaching and the role of the teacher is the main issue rather than the use of various digital tools:

It is not only that I use Facebook to communicate with my students, but that I choose to be another kind of teacher than the teacher traditionally has been. And that is really a much bigger step than to use Facebook. Interview with Kristian, 140120

In a sense, Facebook is used to implement the notion of co-learning that entails a student-active pedagogy where knowledge is created collaboratively in open discussions. This view on learning emphasises the importance of relations in the process of learning. The role of the teacher is less connected to traditional classroom-authority and the transfer of knowledge, but more to being a supervisor that facilitates students' learning. Interestingly, the notion of the "traditional" teacher-role associated with authority and the transfer of knowledge that both Kenneth and Kristian critique and aim to avoid has not historically been influential in pre-school teacher education. This traditional teacher-role is associated with schooling, not pre-schooling, and the teaching of older

pupils. The critique of the “traditional” teacher-role can be related to the traditional image of the pre-school teacher, emanating from Fröbel’s kindergartens and the pre-school teacher seminars, with strong beliefs that pre-schooling should not mimic schooling and that teachers should act as supervisors [19].

Apart from co-learning, two other views on learning are visible in the material. These views reflect different norms and understandings of the roles of students and teachers, and how university education is perceived. Students who position themselves as goal-oriented learners commit to a career choice (becoming a pre-school teacher) and consequently focus on finishing compulsory assignments and to acquire a diploma (preferably without unnecessary efforts) [7]. This view on learning can be framed as an instrumental view on learning. Kristoffer describes how other students would write posts about dead pets or how they had fell and injured themselves – conversations that Kristoffer thought irrelevant in relation to teacher education. In this way, Kristoffer illustrates how students who position themselves as goal-oriented learners might not identify the affordance open discussions offered by the Facebook group. Rather, they prefer the sharing of correct and relevant information.

Students who position themselves as customer-oriented learners commit to a neoliberal view on learning [7, cf. 50]. Education is perceived as a commodity, the student as a customer and the teacher as a salesman. A type of information activity connected to this identity position is voicing discontent, often in relation to practical issues where teachers are considered to be responsible for negative outcomes. One example of this is when a student realises that a lecture will be held in a building not commonly used: “But why? Feels completely unnecessary when we’ve had all the other three years here...” (Facebook conversation, 141007). After other students have explained where the building is located, a teacher writes that the change had to be made because the large lecture hall in the main building was already booked. Practical issues, beyond the control of individual teachers, explained the circumstances. However, students positioning themselves as customer-oriented students tend to direct their discontent towards the teachers because they are seen as representatives of the university and as such responsible for the “commodity” the students have paid for.

During the last part of the study, the normative function of co-learning in the social practice of pre-school teacher education is visible. Among the information activities in the Facebook group, the identity position discussion-oriented student is dominating [7]. At this point, during the last semester of teacher education, few active members of the group reflect the other two identity positions and the alternative views on learning.

6 Discussion

When descriptions of information activities form narratives that construct identities of teacher students, for themselves and for others [see 14], the psychological dimension of information literacy is made visible. The previous section shows how identity, particularly views on learning, interacts with affordances of digital tools and the learning environment when information activities are undertaken. In this way, the present study supplements previous research on information literacy and identity [e.g. 23, 27, 28, 30]

with an analysis of the connection between views on learning (as an aspect of identity) and information literacy.

Through information activities, information literacy emerges as an aspect of the social practice of pre-school teacher education when this practice meets a Facebook practice [cf. 31]. In the table below, the first research question is addressed as the connection between information literacy, appropriation and identity is described.

Table 2. The connection between appropriation, identity and information literacy.

	Relational information literacy	Pragmatic information literacy
Mode of appropriation	Relation-building tool	Collaborative problem-solving tool
Identity position	Discussion-oriented	Goal-oriented / Customer-oriented
View on learning	Co-learning	Instrumental / Neoliberal
Relation teacher-students	Non-traditional, informal	Traditional, formal
Typical information activities	Sharing and requesting information that constructs identity, builds relations and initiates open discussion; reflecting and questioning	Sharing and requesting relevant and correct information; voicing discontent, protesting

In Hanell [5], two different modes of appropriating the group are identified: as a relation-building tool and as a collaborative problem-solving tool. In the table above the two modes of appropriating the group are connected to three types of identity positions identified in Hanell [7], linked to different ways of sharing information: discussion-oriented student, goal-oriented student and customer-oriented student. When the group is appropriated as a relation-building tool, and when students position themselves as discussion-oriented students, information shared and requested often serves to build relations, construct identity and spark open discussions – often with humour and irony as key components of these information activities. This identity position and this mode of appropriation are connected to a relational information literacy, characterized by a commitment to co-learning in the ideological domain, and a non-traditional and informal approach to student-teacher relations. Grounded in the view on learning as co-learning, a relational information literacy is connected to the historical heritage of pre-schooling and the social practice of pre-school teacher education.

On the other hand, students who appropriate the group as a collaborative problem-solving tool, and position themselves as goal-oriented learners, tend to share and request information directly related to, and useful for, formal aspects of teacher education. This mode of appropriation and the identity positions goal-oriented student and customer-oriented student are connected to a pragmatic information literacy. This type of information literacy reflects both instrumental (goal-oriented student) and neoliberal (customer-oriented student) views on learning as well as a traditional and formal view on student and teacher roles. In terms of commitment, goal-oriented students commit

to pre-schooling as a career choice while customer-oriented students commit to a neoliberal ideology, suggesting a certain *quid pro quo* mentality within a pragmatic information literacy.

Information literacy is connected to norms [18]. The normative view on learning as co-learning is historically rooted in the development of the pre-school teacher profession and pre-school teacher education. The way the teachers explicitly distance themselves from “traditional schooling” and the importance both students and teachers place on social interactions and relations echo ideals from Fröbel’s kindergarten and the seminar-tradition of Swedish pre-school teacher education [19]. In connection to the second research question, the findings above show how the idea of co-learning provides explanations for how and why digital tools are used in pre-school teacher education. The critique of the traditional teacher-role, associated with authority and the transfer of knowledge, and a social-constructivist view on learning as co-learning provides an ideological rationale for the use of digital tools. Previous research suggests that Facebook groups can provide teacher students with valuable opportunities for communication [41-42]. Depending on the motivations of the participants, Facebook can support learning communities [42]. The digital community in the Facebook group becomes an important arena for realising the credo of co-learning, emphasising the building of relations and open discussions between students and teachers. These ambitions are difficult to achieve outside of the digital community, given the material and organizational aspects of teacher education.

However, norms and information activities connected to co-learning can be both including and excluding. The interplay between pedagogical ideals and enabling and constraining properties of the learning environment makes affordances of the Facebook group identifiable and appealing for several teachers and students. The discourses surrounding digital tools, reflecting both technological determinism and overinflated optimism [51], likely interact with the ideals of co-learning and contributes in framing digital tools as natural and even necessary to use. At the same time, students who reflect instrumental or neoliberal views on learning, in a pragmatic information literacy, can be repelled by what they perceive to be irrelevant or misleading information. The preference for relevant and correct information is in line with how Facebook groups are considered suitable for information sharing partly because they enable specialised, content-driven communication [37]. Information activities connected to a relational information literacy with nurturing properties for students who embrace the ideal of co-learning can in fact be the opposite of nurturing for students with different views on learning.

These results can be related to findings from Lu and Curwood [43] who identify two categories of teacher students using a Facebook group. One category of students expresses identity through identification with other students and is helpful, supportive and sociable. The other category instead expresses resistance towards social norms related to group-activities. Among the pre-school teacher students, the normative view on learning as co-learning has including properties for students who consider learning to be a social and relational process. Students with more individualistic preferences, often positioning themselves as goal-oriented or customer-oriented learners, instead appear to be gradually alienated by the ideal of co-learning. The tendency to share information

in the community is lower among these students, which is coherent with previous research describing social engagement as the most important motivation to share information on Facebook [35]. Co-learning is a dominating norm within the social practice of pre-school teacher education, but not fully accepted. The tendency to commit to co-learning explains why some students consider the digital community interesting and useful, while students who reject or resist the norms of co-learning instead leave the community or choose to be inactive participants. Future research should continue to investigate how views on learning interact with information activities in different digital settings.

7 Conclusions

This paper shows how the appropriation of Facebook [5] can be connected to the positioning of identity [7] and views on learning in two types of information literacy: a relational information literacy and a pragmatic information literacy. The psychological dimension of literacy [13] is explored through an analysis of how co-learning, and instrumental and neoliberal views on learning, are expressed in accounts of information activities in a digital community. The normative function of co-learning is found to be a significant aspect of the socio-cultural environment of pre-school teacher education that can explain how a digital community using a Facebook group can be experienced as either including or excluding.

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