

Professional Development of Teachers in a MOOC

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Abstract: In this paper, we describe the participation in a MOOC which was arranged by and for teachers in Sweden. The MOOC was organized as a community rather than a course, which meant that there was a skeletal structure to facilitate community engagement but no set learning goals or tasks that had to be done by the participants. This loose structure enables participants to attend to the MOOC in different ways. Based on answers to surveys, four ways of participation are mapped out in this article. The structure of the MOOC was based on connectivist notions of knowledge building and the central principals of autonomy, diversity, openness and interactivity. How connectivist thinking can be related to the participation in the MOOC is explored and tensions between the two are discussed. The importance of dialogue in order to develop connections for learning is an aspect which is regarded as important in this article. As professional development for teachers, the MOOC has both advantages and disadvantages. The openness of the MOOC is considered an advantage by some participants, but an obstacle by others. The openness means a flexibility of when and to what extent to participate, but it also creates an uncertainty of what is expected and how to participate.

Keywords: MOOC, professional development, participation

1. Introduction

In recent years MOOCs have captured the attention as a new way of gaining knowledge and competencies, and they have been portrayed both as a threat and an opportunity to conventional education (e.g. Beaven, 2013). This article concerns a recently held MOOC in Sweden which aimed to raise teachers' digital and social media competencies.

During the autumn of 2013 *Digitala skollyftet*, was created as a cMOOC, based on the philosophy of connectivism and networking (cf. Siemens, 2005; Downes, 2008) designed by and for teachers. Four teachers, who have previously been involved in another initiative called *Skollyftet* in Sweden, set up the site and planned for the MOOC which started in November 2013. Setting up *Digitala skollyftet* can be seen as an attempt by the teachers behind *Skollyftet* to contribute to raising the digital competence amongst teachers in Swedish schools. The project aimed at addressing three cornerstones; digital competence, sharing-is-caring and school development.

Skollyftet originates in an attempt to counteract negative media coverage of Swedish schools and attempts to emphasize positive aspects and changes in the Swedish educational system. *Skollyftet* has become quite well-known amongst teachers in Sweden. On Twitter there are several active teachers who post information and discuss school issues. Every Thursday night there is an hour-long discussion on a particular subject in what is called #skolchatt. These phenomena where teachers actively engage in social media and discuss educational issues with colleagues throughout the country have been termed the Online Community of Educators (*det Utvidgade Kollegiet*).

Digitala skollyftet was designed as a cMOOC which means that the focus was on community building and interaction (Jobe, Östlund & Svensson, 2014). Most MOOCs are xMOOCs, similar to traditional academic courses and have a clear structure with a set starting and finishing point. Since MOOCs are not very common in Sweden, particularly not cMOOCs, there was a general concern amongst the organizers that the participants may need some sort of structure to get involved.

Therefore, a starting point in November 2013 was established and weekly hangouts were arranged where different issues were discussed and “experts” were invited to take part in the discussions. *Digitala skollyftet* was constructed with a connectivist pedagogical model in mind but had a skeletal structure in order to scaffold the involvement of participants.

1.1 *Digitala skollyftet*

Around 1.500 persons enrolled in *Digitala skollyftet*. However, to enrol in a MOOC, particularly a cMOOC, does not mean committing to anything. To enrol is free and open and there are no predefined expectations for participation (McAuley et.al., 2010). Since the MOOC is open, participation is possible whether being enrolled or not. Therefore, the number of people who enrolled has little, or no, relation to the number of active participants. As McAuley, Stewart, Siement and Cormier (2010) put it “participation in a MOOC is emergent, fragmented, diffuse, and diverse” (p. 6).

Digitala skollyftet aimed to facilitate user engagement and the loose structure of the course contained suggestions of weekly tasks which the participants could engage in. For example, in the first week the task consisted of presenting yourself online and commenting on someone else’s presentation of themselves. The participants were to choose a forum in which to present themselves and they also make attempts at finding other participants in digital environments and social networks. The MOOC was based on user engagement, offering a number of online tasks in which the participants could engage actively by interacting with others, contributing with posts in digital environments and social networks such as Twitter and Facebook, as well as setting up their own blog. However, participation in a cMOOC like this does not necessarily mean actively interacting and posting, but could also consist of following the flow of events connected to the MOOC and receiving information through others by reading what they post and following discussions in different forums.

The aim of this article is to investigate the activities taking place in a MOOC designed as a space for professional development of teachers. The article will map out the nature of the interaction and what it means to participate in a space that has a clear professional focus, with a structure that aims to build a community based on the connectivist principles of autonomy, diversity, openness and interactivity.

2. Theoretical framing

The theoretical framing of this article is based on an extended notion of the connectivist perspective, where interactive dialogic practices are foregrounded. cMOOCs are often associated with connectivist perspectives on learning (e.g. Bell, 2011) and connectivist approaches to learning are frequently expressed as the ability to see connections between fields, ideas and concepts, connecting information sources (Siemens, 2005). However, Ravenscroft (2011) argues that mechanisms for maintaining connections take place through dialogue: “a pivotal role for *dialogue interaction* in meaning making and learning within networks and similar open enterprises” (p. 140). From this perspective, connectivism is suggested to have evolved having an emphasis on dialogue since networking means collaborative thinking.

To some extent, *Digitala skollyftet* resembles the MOOC Connectivism and Connective Knowledge (CCK08)¹ since both explore connectivist notions of knowledge building. In previous articles (Mackness, Mak & Williams, 2010; Mak, Williams & Mackness, 2010) the participants’ learning experiences in CCK08 have been explored in relation to the connectivist principles of autonomy, diversity, openness, and connectedness and interactivity (e.g. Downes, 2008). ‘Autonomy’ here refers to that learners are allowed a choice of where, when, how, with whom, and even what to learn. ‘Diversity’ is related to there being a diverse population in order to avoid group-thinking and ‘echo-chambers’ (McRae, 2006). ‘Openness’ concerns the free flow of information and is supposed to encourage a culture of sharing and a focus on knowledge creation (Mackness et al., 2010). ‘Connectedness’ and interactivity is considered to be what makes all this possible. Knowledge emerges as a result of connections, according to the connectivist perspective (e.g. Bell, 2011). Though

¹ The MOOC Guide: <https://sites.google.com/site/themoocguide/3-ck08---the-distributed-course>

the CCK08 contained the connectivist principles, paradoxes also arose which constrained “the possibility of having the positive experiences of autonomy, diversity, openness and connectedness/interactivity normally expected of an online network” (Mackness et al., 2010). It could therefore be put into question whether it is possible to combine the connectivist principles, which are based on online networks, to MOOCs as courses. To emphasize the network aspects, and perhaps downplay the course aspects, the organisers of *digitala skollyftet* tended to refer to the MOOC as a Massive Open Online Community, rather than Course.

To frame participatory activities, Goffman’s (1959) uses the concept of presentation of self as a tool to identify user interaction. For activities of participation, online performance has been used in investigating notions of what Goffman would label front stage and back stage activities (Hogan, 2010). However, as Hogan (ibid.) points out, Goffman’s dramaturgical approach focuses on situations which are framed in time and space. Online environments, on the other hand, are often asynchronous and less dependent on time and space. Hogan (ibid.) distinguishes between performance spaces online where actors perform with each other and exhibition spaces where artifacts will be submitted by individuals in order to show to others. This distinction will be used to identify different ways in which it is possible to participate in MOOCs like *Digitala skollyftet*.

3. Methods

The method for collecting data incorporates a number of different datasets which will be synthesized in the analysis in order to illuminate different aspects of participating in the MOOC as well as of particular aspects of it, such as badges.

The empirical data consist of three surveys as well as interviews with the organizers of the MOOC and with some participants. Open online resources, such as blogs, Twitter, and Facebook, have also been mined for data which concern *Digitala skollyftet*. For example, data have been collected from mid October 2013 until the end of March 2014 from twitter, where the hashtag #digiskol has been used. Collecting data from social media is notoriously difficult and an area of research which is still very much at an exploratory stage of how to collect and analyse data (Horst & Miller, 2012), as well as ethical aspects of how to use data (Ess, 2011).

A first survey was sent out to those who had enrolled in *Digitala skollyftet*. This survey mainly asked for basic information of the participants, such as if they were teachers and which subject they taught and at what level. 438 persons answered this initial survey and above 80% of them agreed to participate in further investigations. The background information showed that the participants represented all levels of the school system. The number of female participants greatly outnumbered the number of male participants. In this survey the respondents were also asked whether they agreed to answering more surveys, whether they agreed to be interviewed and whether they agreed to possible visits by the researchers at their workplace. In the survey it was clearly stated that interviews and visits would only be made with a small number of the participants and, even if they agreed at this point in time, they have the right to withdraw their participation at any time. A second survey, with in-depth questions regarding the participants’ use of digital technology and social media within their profession and in their spare time was sent out in the beginning of January 2014. This was a rather extensive survey which took some time to complete. A third survey was sent out in March 2014. This survey was shorter and the questions concerned the participants’ experiences of the MOOC. The questions were open-ended and therefore a qualitative approach at interpreting the answers has been taken (see Appendix 1). All in all, 66 persons answered all three surveys and 10 of these persons were also awarded the *Digitala skollyftet* open badge.

The analyses in this paper primarily concern the 66 persons who have answered the three surveys. Their answers in survey three with open ended questions have been analysed and the participants have been organized in four groups based on their answers regarding their activity in the MOOC. These four groups have been compared in order to find characteristics of participation. These characteristics are then analysed in relation to the connectivist principles of autonomy, diversity, openness and connectedness/interactivity in order to notice similarities as well as differences in how the different groups relate to these principles and to detect how the principles relate to the participation in a MOOC.

4. Findings

In this section, the findings are presented starting with some general indications in the answers from survey three (see Appendix 1). This is followed by a description of four groups of participants based on characteristics of the participation, as detected in the data. Finally, the general indications as well as the groups and their participation is analysed in relation to the four connectivist principles. This analysis aims to illuminate how these principles relate to participation in a MOOC, as well as to highlight potential paradoxes and dilemmas which become noticeable when relating the principles to participation in a MOOC.

4.1 General indications

A great majority of the participants regard *Digitala skollyftet* as a good way to develop their professional competence. Only four of the 66 participants state that they are negative towards *Digitala skollyftet*. Three of these four work at preschool-level which indicates that *Digitala skollyftet* may not have been particularly suitable for this level of the educational system. As one of them states “it is all about school, school, school”. Though being positive generally, a number of participants raise issues about working too much and working on their spare time. If partaking in *Digitala skollyftet* is considered to be part of their professional development, then these participants state that it should be done within working hours. The importance of gaining approval from their headmaster in order to get time to engage in this sort of competence development is stressed.

When asking about their use of digital tools and whether that has changed due to their engagement in *Digitala skollyftet* a majority answer that it has changed. Many mention different tools that they have discovered and/or started to use, but many also state that they have come in contact with other people and through them started using other tools. 7 persons write that it has not changed their use of digital tools at all and 13 persons state that they were already competent and frequent users and therefore their use of tools has not changed to any considerable extent. The people who appear to have changed their use of digital tools the least are a group which, on the one hand, consist of those who did not engage in *Digitala skollyftet*, and, on the other hand, a group which could be considered highly competent users already. Those who benefit the most therefore seem to be a group in the middle who actively engaged in *Digitala skollyftet* and who had some experience in using digital tools but who could not be considered expert users.

A majority of the participants state that engaging in *Digitala skollyftet* has made a positive difference to developing their network. A handful write that they cannot tell, since they did not participated to any large extent and the same number say that *Digitala skollyftet* has not developed their network. Two of these participants, question the use of Facebook and Twitter and consider participation in *Digitala Skollyftet* to be too dependent on these specific environments.

When it comes to whether their engagement in *Digitala Skollyftet* has contributed to school development, more than 10 persons are uncertain or write that it has not. One of them writes that it is difficult to know since school development is a long term process. Sharing the information they received through *Digitala Skollyftet*, as well as being able to convince their headmaster of the importance of digital competence, are ways that are stated as contributing to school development. There appears to be a difference in the way school development is conceived. Some participants see their individual development as school development, or whereas others regard school development as referring to a more systemic level of the organization.

A majority of the participants say that they share material and for many that was something which they did before *Digitala Skollyftet*, so therefore their attitudes towards sharing have not changed. However, some write that they now dare to share or that they are starting to consider it. One person state that sharing makes the work as a teacher more fun as the climate at his/her workplace is “rather heavy”. Another one found it hard to find teachers who shared online and who worked at the same level in the educational system, therefore it was hard to find relevant material and/or people to cooperate with.

More than ten participants state that their engagement in *Digitala Skollyftet* has contributed very little, or not at all, to changing how they work in the classroom. Most of them state that this is because they did not engage in *Digitala Skollyftet* as much as they had planned, but some also write that they are planning to change things but have not yet done so. The changes mentioned mainly relate to the increased use of different digital tools.

Most of the participants see the openness of *Digitala Skollyftet* as something positive which enables them to engage in the MOOC when they have time and at their level. However, this could also be negative since other engagements may be prioritized when there are no deadlines to met. The openness also lead to insecurity about what you were expected to do and how. Some point out the difficulty in grasping the extent of *Digitala Skollyftet*. A couple of people state that it was hard to find people to collaborate with and one mentions that it appears as though the cooperation mainly takes place within previously existing networks. It is also mentioned that more support may be needed if you are new in this type of environment. This indicates that newcomers may find it difficult to find out how and with whom to collaborate and share ideas and material. The openness then becomes a restriction.

Only a handful of people consider *Digitala Skollyftet* as finished, instead the majority view it as a start and emphasize that school development is a continual process without end. This indicates that *Digitala Skollyftet* is regarded as school development and not primarily as personal development.

4.2 Four groups of participants

Four groups have been distinguished in the empirical material based on their participation in *Digitala skollyftet*. These four groups will be presented here and the characteristics of each group will be explored and explained. The four groups are categorised as follows:

- the posting participants (21 persons),
- the on-looking participants (16 persons),
- the constrained participants (17 persons),
- the non-participants (12 persons)

The distinction between the groups are not clear-cut, particular not between the two middle groups of on-looking and constrained participants as these two groups are similar in that they have participated in *Digitala skollyftet*, but not consistently or as on-lookers. In all four groups, there are representatives from different levels of the school system. The number of males and females in the groups mirrors the larger representation of females which was found in the initial survey.

“The posting participants” is the group that portray themselves as active participants in *Digitala Skollyftet*. They have contributed to discussions in different forums and shared their material with others. Half of the group (10 people) have also been awarded a *Digitala Skollyftet*-badge. In order to receive the badge they had to give evidence of their competence in the three cornerstones; digital competence, sharing-is-caring and school development. Though this group is positive towards *Digitala Skollyftet* about half of them also raise critical issues regarding the loose structure of the course and that it was hard to grasp and understand what to do and how to perform the tasks. Some of them consider the difference in experience of the participants to be somewhat problematic. Whereas a couple of them write that they had expected a higher level on the assignments, a few others write about the obstacles for newcomers to participate in the MOOC. All but one of the participants in this group, write that they share material and ideas with others. A couple of them appear to share mainly with external colleagues since they claim not to get much response from the colleagues at their workplace. One of them writes that social media has become a breathing space, in which to communicate with equally engaged colleagues. A number of participants in this group appear to focus their involvement around certain interests such as flipped classrooms and coding. This could be a strategy to narrow the focus of participation in order to cope with the expansiveness of *Digitala Skollyftet*.

The persons in “the constrained participants” group state that they have not engaged in *Digitala Skollyftet* as much as they had liked to, or planned to do. Most of them write that they started off being active and engaged but then their everyday work as teachers took most of their time and due

to time constraints they have not participated in the way they intended. Overall this group appears to be active, though not consistently, and most of them write that they actively share material with others, though some state that they are still a bit reluctant to do that. Though they have not been as actively engaged in *Digitala Skollyftet* as they had planned, most of them still claim that they have changed their way of working in the classroom by using new or different digital tools. They also express that their network of colleagues have expanded and that they have found new persons and blogs to follow and get ideas and practical suggestions from. Some of them state that their engagement in *Digitala Skollyftet* has enabled them to support colleagues at their workplace in developing competencies regarding digital tools and sharing with others.

“The onlooking participants” are characterized by their engagement in *Digitala Skollyftet* mainly consisting of reading what others have posted in different forums and on blogs. These participants do not, to any great extent, post and share their own material and they are therefore less visible as active participants compared to those who post and share actively. In the descriptions of their engagement in *Digitala Skollyftet*, they appear to be active in the sense that they read blogs and follow Facebook-groups and discussions on Twitter. This is a source of information and inspiration, which is then shared by some with colleagues at their workplace. Some of them try out new digital tools in their classrooms and some consider their involvement in *Digitala Skollyftet* as leading to school development when they spread what they have learned through reading and following activities in different forums. When referring to the Online Community of Educators (*det Utvidgade Kollegiet*) they mainly appear to see the community as a resource. However, most of them are reluctant to share themselves, even though some say that they either do, they are starting to do it, or consider doing it. A couple of the participants in this group state that the openness enables them to participate in their own way so that even if they are not posting or actively participating in discussions, they are able to follow them in their own time.

“The non-participants” have not engaged in *Digitala Skollyftet* to any considerable extent. Half of the group, 6 persons, says that they did not participate due to changes in work or family issues. However, 4 of these express that they see *Digitala Skollyftet* as a good way to develop professionally. A couple of the others write that they did not have the necessary tools to be able to participate and two of them say that they were not allowed to participate due to lack of communication and since they did not understand what they were supposed to do, or how. This indicates that these persons belong to those who would have needed more support in order to be able to participate.

The characterizations of the different groups are based on how they portray their participation when answering the third survey. This portrayal can be compared to how they answered questions about their activity in social media in the first and second survey, as well as to their actual activity on for example Twitter during *Digitala Skollyftet*. In the first two surveys “the posting participants” and “the constrained participants” state that they are active in social media to roughly the same extent. However, their activity on Twitter convey that “the posting participants” are more active since they both post more tweets, retweet more and have a larger number of followers as well as the number they follow.

4.3 *Connectivist principles and participation in Digitala Skollyftet*

In this section the participation in *Digitala Skollyftet* will be considered in relation to the connectivist principles of autonomy, diversity, openness and connectedness/interactivity. These principles connect and influence each other and their interconnectedness is therefore in focus rather than each principle on its own. The findings in earlier studies of the CCK08 (Mackness et al., 2010, Mak et al., 2010) will be related to since both this MOOC and *Digitala Skollyftet* could be called cMOOCs.

Mackness et al. (2010) write that the participants in CCK08 equated autonomy to “flexibility and control over learning and exemplified by the participants’ choices of how, and how much, to engage with the course” (p. 269). This corresponds to a large extent to what the participants in *Digitala Skollyftet* consider to be the advantage of the MOOC. However, the participants in *Digitala Skollyftet* also saw this flexibility, together with the openness of the course, as one of the obstacles for active participation. The need for guidance was stressed by several participants and some stated that their reason for not participating was the open structure, or lack of structure and support. The openness was regarded as an obstacle since the participants became uncertain of what was expected of

them, but also as an asset since the way they participated became more flexible. Mackness et al. (2010) state that in CCK08, openness was implicitly referred to as a way of being. The participants in *Digitala Skollyftet* similarly seem to equate openness and the inclination to share as a positive personal asset which many of them claim to have or, if not, then aspire to acquire.

When it comes to diversity, this could be considered from two different aspects. Many participants stated the fact that they could connect to colleagues who worked in different environments and different parts of the country as something positive. Professional development of teachers commonly takes place within a particular school or maybe together with neighbouring schools. In that sense *Digitala Skollyftet* offers diversity. On the other hand, it is discernible in the data that many participants were mainly interested in connecting with people who in some sense were similar to themselves. To collaborate with someone it was often stated that the other person(s) needed to teach the same subject and/or teach at the same level of the school system. In that sense diversity was not something that the participants sought in *Digitala Skollyftet*. Since the MOOC was intended for teachers in Sweden it could also be argued that this group in itself is not homogenous enough to enable the kind of diversity aimed at in MOOCs. Instead, what McRae (2006) refers to as group-thinking and ‘echo-chambers’ may be encouraged.

Although the participants in *Digitala Skollyftet* consider the autonomy and flexibility of to what extent and how they engage in the MOOC as important, their actual engagement in *Digitala Skollyftet* is characterized by their interactivity with others. The importance of digital dialogues, as pointed out by Ravenscroft (2011), becomes apparent since to follow others on Twitter and on blogs is by many regarded as a key feature in their own development. The notion of “sharing-is-caring” closely relates to this interconnectedness and stresses the community, rather than the individual, as important. The activities of the participants on Twitter convey this interactivity and also explicate the importance of certain actors. The organisers of *Digitala Skollyftet* are central in these activities as many of the participants turn to them when they have questions, but also since they to a certain extent moderate the course by supporting participants in different ways. For example, they retweet when somebody asks a question or enquires about possible cooperation, or they attempt to put people in touch with each other who have not yet “connected” on Twitter. Figures 1-4 attempt to visualize the network of participants from the different groups². The visualizations depict the activity on Twitter under the hashtag #digiskol during the period of October 2013 to March 2014. Figure 1 shows the network of the non-active participants (marked with red). As shown, these participants have few contacts. Some are in contact with the organizers (marked with turquoise) and also with the Twitter alias @digiskol and @skollyftet (marked with blue). The activity of the on-lookers is depicted in figure 2. The on-lookers (marked with yellow) are connected to each other through their contact with the organisers as well as through @digiskol and @skollyftet. The amount of contacts varies and so do their connectedness to others in the group. Figure 3 shows the activity of the constrained participants. Their networks are intertwined through the interaction with the organizers, @digiskol and @skollyftet. Some of the on-lookers appear to have more contacts than the constrained participants. This could be because the on-lookers mainly collect information and in order to receive a substantial amount of information they have a larger network. The posting participants have vaster networks than the other three groups, as shown in figure 4 (marked with green). However, in all the groups, the organisers, @digiskol and @skollyftet are important nodes in the networks.

Apart from the organisers, other experienced users of Twitter with large networks of followers may become important to newcomers. In this way some participants may take on, or be given, the role of an expert. Though the building of a community of peers may be the vision of a MOOC, the reality may be that the occurrence of more-capable peers in networks are inevitable. However, this should not be seen as negative, but rather as a way in which participants learn from

² The size of the circles in the figures visualizes the amount of interaction, as in mentions, sent to and from participants. Larger circles mean that a larger amount of tweets with mentions have been sent. The sizes of the circles should be considered within each figure as the scale of the figures had to be adjusted so that all became visible but were not too large.

The size of the arrows in the figures relates to the number of tweets with mentions. The alias where the arrow originates from has sent a mention to the alias which the arrow points to. An arrow pointing at a circle means that tweets have been sent which mentions the alias of this circle.

each other and where more-capable peers can be regarded as assets since they may scaffold the experiences of the newcomers.

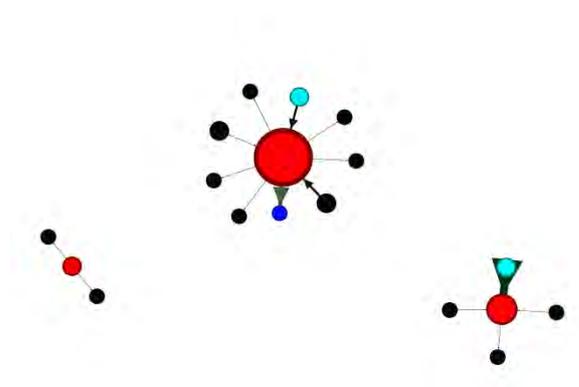


Figure 1 Non-participants

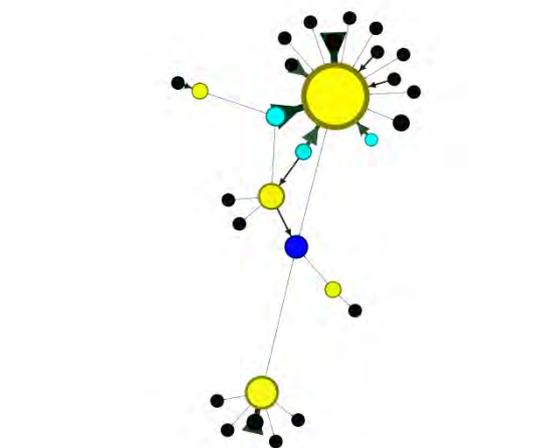


Figure 2 On-looking participants

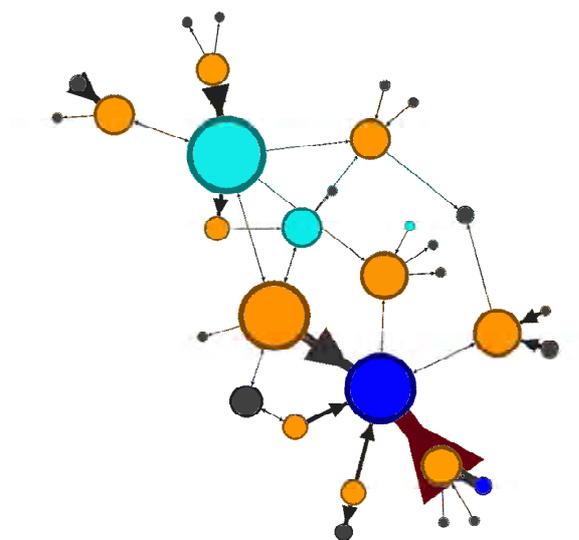


Figure 3 Constrained participants

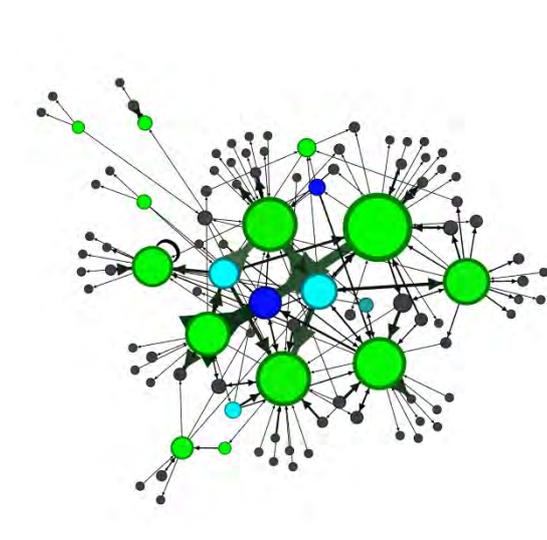


Figure 4 Posting participants

According to connectivist views, learning flows from an initial connection (e.g. Siemens, 2005). However, as pointed out by Mackness et al. (2010) “connectivity itself is not a sufficient condition for connectedness or interactivity” (p. 272). To achieve meaningful connectedness is difficult and this difficulty may partly be related to the relation between a MOOC and the connectivist principles (ibid.). To connect digitally with others is one thing, but in order to investigate how these connections may evolve and become spaces for learning, attention needs to be paid to the dialogues that the connections facilitate (Ravenscroft, 2011).

5. Conclusion

To sum up, it is possible to see that the *Digitala skollyftet* is an active environment, displaying interaction on different levels. Four categories of participation were discerned, which all show ways

of engaging in this type of MOOC. *Digitala skollyftet* can be considered as professional development for teachers. The different ways of participating in the MOOC disclose that the openness of the MOOC is both an obstacle and an asset. Posting participants, who generally are experienced users of social media, as well as non-participants, who generally are less experienced in digital surroundings, state that the openness contributed to an uncertainty of what was expected of them when taking part in the *Digitala skollyftet*. That it was difficult to grasp the extent of the course added to their uncertainty.

Comparing the four different groups of participants it is possible to discern differences in how and with whom they engage. The visualizations in figure 1-4 attempts to show that the extent of their networks are different. What is similar in the networks of all groups is that the organisers of the MOOC, @digiskol and @skollyftet are important nodes in the networks. The posting participants have a wider network, which, to some extent, is separate from *Digitala skollyftet*. One reason for this may be that their networks have been developed before the MOOC. For some of the constrained and on-looking participants, the building of a network started with their participation in *Digitala skollyftet* and is therefore intimately connected to the MOOC. However, the participants in these two groups also appear to closely relate their activities in the *Digitala skollyftet* to the local context of the school where they work. The importance of sharing what they have discovered through *Digitala skollyftet* with their colleagues at work is emphasized more by these groups than by the posting participants. The participation of the constrained and on-looking group may therefore contribute to the professional development of the participants as well as their local colleagues. The different groups of participants reveal different ways of engaging with the MOOC. However, whether there is a preferred way of engaging with the MOOC is, according to us, not possible to discern. Instead, how participants chose to engage in the MOOC is likely to depend on their personal reasons for participating and their professional development also relate to what they wish to achieve and in which areas. Since the MOOC is open and diversified, what participants gain from engaging in it is likely to become equally open and diversified. As cMOOCs are not supposed to have preconceived fixed goals, it is largely up to each and every participant to decide their own path. However, if learning is seen as social in nature and depends on the engagement with others, then what kind of interaction between participants the MOOC renders possible are crucial in order for spaces for learning to evolve. To facilitate the performance of qualitative interactions rather than the exhibition and sharing of artifacts, scaffolding may to a larger extent be needed in a MOOC.

The connectivist principles of autonomy, diversity, openness and connectedness/interactivity have a bearing on the way the participants engage in the MOOC. However, questions could be raised as to what extent the connectedness facilitated by the MOOC also facilitates spaces of learning. The nature of the interactions, whether analog or digital, is crucial if MOOCs are to become spaces for learning. Therefore, Ravenscroft (2011) write that connectivist' thoughts need to consider the importance of dialogue. He stresses the need for dialogues to facilitate critical inquiry, reflection and negotiation. Some of the participants in *Digitala skollyftet* stress the need to be able to further discuss issues. This appears to be done by some participants when they share their experiences in the MOOC with colleagues at the school where they work. For these participants the MOOC becomes a vehicle for finding information and sharing with others, but deeper engagements in subjects are carried out through dialogues in local contexts. This connects to Hogan's (2010) notions of performance and exhibition spaces. With the current structure, the MOOC appears to mainly facilitate the exhibition and sharing of artifacts. In order to become a performance space where participants engage with others, a structure of the MOOC which supports such dialogues may be needed. The purpose of the structure would be to facilitate deeper engagement by supporting critical inquiry, reflection and negotiation. Such a structure may overcome the difficulty to achieve meaningful connectedness (Mackness et al., 2010) since it addresses the differences between networks in general and MOOCs as networks which facilitate learning.

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Appendix 1

Questions in survey 3

- How would you describe your participation in *Digitala Skollyftet*?
- In what way has your participation in *Digitala Skollyftet* contributed to changing your use of digital resources?
- In what way has your participation in *Digitala Skollyftet* contributed to the development of your network?
- In what way has your participation in *Digitala Skollyftet* contributed to school development?
- How has your participation in *Digitala Skollyftet* altered your views on sharing on the Internet?
- In what way has *Digitala Skollyftet* contributed to changes in the classroom? Please give concrete examples!
- What advantages and disadvantages do you see with this kind of “course structure”?
- How do you evaluate *Digitala Skollyftet* as professional development?
- Do you consider *Digitala Skollyftet* to be finished?
- General comments about the course