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TITLE Subject-specific perspectives on teaching qualities in Nordic connected classrooms.

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Abstract (300 words)

Digitalization of education is a multifaceted process that affects infrastructures of teaching, use of learning material and terms for classroom interaction. Not least, there seems to be differences in how digital technology comes into play in different school subjects. The aim of this presentation, based on a longitudinal video-ethnographic study in four Nordic countries in Connected Classroom Nordic project, is to compare subject specific dimensions of teaching quality in digitally rich lower secondary classrooms in the Nordic countries. Theoretically the study departs from a media-ecology approach, and on the distinction made by Fenstermacher and Richardson (2005) that teaching qualities consist of both successful teaching in terms of student outcome and of value-based arguments for what is good teaching from logic, psychological and moral standpoints. With such an approach we are interested in identifying aspects of teaching qualities, in a plural sense, as teachers and students navigate and make use of digital technology in everyday classroom interactions.The analyses in this study build on data from a video ethnographic study in four lower secondary schools in different Nordic countries. Based on data from 78 lessons in L1, mathematics and social studies, teacher profiles were constructed to make visible how different teachers made use of digital technology in their teaching including implicit and explicit gains and challenges in the teaching. As a next step, all teaching profiles from respective subjects were analyzed in order to distinguish how digital technology seemed to afford and constrain different aspects of subject content, literacy practices, possibilities for student engagement and conditions for equity in each subject. Preliminary findings from the on-going analysis indicate some subject specific differences concerning how content is recontextualized, visual aspects of representation of and engagement with content, literacy practices in different subjects and conditions for student participation and equity between students.

Extended summary (1000 words, excluding reference list)

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Introduction

In international comparison, education in the Nordic countries is well equipped with digital technology, something that has not least proved to be an important factor during the pandemic-periods of home-schooling (Nilsberth et al., 2021). However, even if there are many advocates for the advantages of digitalization on policy levels (Redecker, 2017; OECD 2016), access to digital technology is in itself no guarantee for improved teaching quality in terms of student participation, content formation and equity issues. Instead, previous research has problematized a tendency towards narrow and transmissive use of digital technology in lower secondary education (Blikstad-Balas & Klette, 2020), and the risk that technology issues overrides dialogue around content and student engagement in classroom interaction (Kjellsdotter, 2020; Nilsberth et al., 2022; Selwyn et al., 2017). With its pros and cons, digitalization is a fact, digital tools are ubiquitous and have come to change the classroom as an environment for learning and socialization in ways that we need to develop more knowledge about. Digitalization of education is a multifaceted process that affects infrastructures of teaching, use of learning material and terms for classroom interaction in various ways in different classrooms and schools. Not least, there seems to be differences in how digital technology comes into play in different school subjects and how we can understand relations between teaching quality and digitalization from subject-specific perspectives. The aim of this presentation, based on a longitudinal video-ethnographic study in four Nordic countries, is to compare subject specific dimensions of teaching quality in digitally rich lower secondary classrooms in the Nordic countries. Research questions are:

1. How do lower secondary teachers in L1, mathematics and social sciences use digital technology and for what purposes?

2. What subject-specific possibilities and constraints can be discerned in teachers' use of digital technology?

3. How do subject specific patterns in use of digital technology be understood in relation to different aspects of teaching qualities?

Theoretical background

Theoretically this study departs from a media-ecology approach, where digital media and technology is understood in terms of environments (Strate, 2017). Going beyond perspectives on digitalization as merely about implementation of new tools and developing digital competence, we are interested in what happens with classrooms as environments for teaching, learning and interaction in different school subjects, when "new" digital resources meet "old" non-digital classroom practices. Further, we focus on a teachers' and students' joint meaning making as they navigate and make use of digital as well as analogue media in everyday classroom practices. "New" digital media both shapes and is shaped by "old" classroom practices and non-digital technology, which can turn out differently in different subject contexts (Erixon, 2014; Igland, Skaftun, Husebø, 2019). However, these processes are not to be understood deterministically (cf. Kritt & Winegar, 2007) as predefined routes but also taking into consideration the agency of different stakeholders in relation to qualitative aspects of content, engagement, equity and literacy practices. We draw on the distinction made by Fenstermacher and Richardson (2005) that teaching qualities consist of both successful teaching in terms of student outcome and of value-based arguments for what is good teaching from logic, psychological and moral standpoints. With such an approach we

are interested in identifying aspects of teaching qualities, in a plural sense, as teachers and students navigate and make use of digital technology in everyday classroom interactions.

Material and method

The analyses in this study build on video recordings and field notes during three school years in four lower secondary schools in different Nordic countries, in total 78 recorded lessons in subjects L1, mathematics and social studies. Based on this material, teacher profiles were constructed for each participating teacher in order to make visible how the different teachers made use of digital technology in their teaching including implicit and explicit gains and challenges in the teaching.

All video data was coded in the program Nvivo (software for qualitative analyses) in relation to organization of teaching, use of digital technology, student participation and multilingual aspects. In addition, descriptions of all lesson activities on a general level were added to the timeline (also in Nvivo). Based on this first analysis of all video data, teacher profiles were constructed in relation to instruction and activities involving digital resources, purposes for use of digital technology and what kind of problems and challenges that arise and how they are managed. As a next step, all teaching profiles from respective subjects were analyzed in order to distinguish how digital technology seemed to afford and constrain different aspects of subject content, literacy practices, possibilities for student engagement and conditions for equity in each subject.

Preliminary findings

Preliminary findings from the on-going analysis indicate some subject specific aspects in how use of digital technology relates to teaching qualities. Examples of qualitative differences between subjects concern differences in how content is recontextualized, visual aspects of representation of and engagement with content, literacy practices in different subjects and conditions for student participation and equity between students are met. The results indicate that increased knowledge and awareness of these aspects could help in improving teaching quality in digitally rich classrooms both in terms of good and successful teaching.

Significance (relevance to the QUINT ambition)

The study furthers our understanding of the impact of digitalization of teaching in relation to teaching qualities in more nuanced and differentiated ways in relation to subject specific conditions and practices.

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