

Leadership and cooperation in Google Docs based group work – a video ethnographic examination of group work in a Danish upper secondary school.

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Abstract

This paper examines how Google Docs is used and affects group work in the classroom. Methodologically, the study applies video ethnography and focus group interviews with pupils in two first year classes at a Danish upper secondary school. Google Docs is a widely used digital tool at Danish upper secondary schools and has been associated with “considerable potential [...] to serve as a platform for collaborative work” (Chu & Kennedy, 2011). However, contrary to these assumptions this case revealed that actual written collaboration on Google Docs was minimal. Instead, in all the examined groups, a leader was identified that dominated the groups' work and writing.

Theoretically, the paper take inspiration from Networked Learning and its critical approach towards usage of digital technologies in education. This includes acknowledging that, increasingly, learning combines digital and non-digital forms, and that, generally, technology play an active role in learning (Hodgson & McConnell, 2019; Fawns, 2018). Also, perspectives on affordances (Gibson, 1979; boyd, 2014), socio-material interactions (Sørensen, 2009), and leadership (Goffman, 1981) provide insights into the group work analysis.

Video ethnographic method enables a detailed analysis of the group members' oral as well as written interactions in Google Docs, thus paying “attention to the whole ecology“ of the group work settings (Bhatt, de Roock & Adams, 2015). The aim is to analyse the socio-material interactions in the groups, specifically the interactions between the pupils and Google Docs. This includes 1) how the pupils use Google Docs in relation to their group work, including how they combine oral and written communication, 2) how different leadership roles emerge, and 3) how the hybrid learning spaces (Ellis & Goodyear, 2016) afforded by the material surroundings in the group work settings seem to promote or inhibit collaboration within the groups. In specific, the case discusses how Google Docs configures space in a way that seems to afford cooperation (i.e. divided work among the group members with each person responsible for solving a different portion of the problem) rather than collaboration (i.e. coordinated, synchronous work activity on a shared problem). The final part of the paper will touch upon some didactical implications of the findings in the study.

Keywords

Google Docs; Group work; Cooperative learning; Learning ecology; Affordance; Networked learning

Introduction

The digital media environment is characterized by networked infrastructure and user-centred communication as demonstrated by the internet and social media in general. These network logics (Castells, 1996) challenge the education sector with needs for the development of new educational and learning cultures and practices. The aim is not to apply digital technologies in every learning situation, however digital technologies offer exciting new functionalities that possess the potential to facilitate activating and individualized learning methods and working patterns (e.g. Davidson & Goldberg, 2009; Beetham & Sharpe, 2013; Bates, 2015). Thus, the digital environment challenges us to rethink pedagogy and learning and develop new forms of learning activities in which the pupils on their own and in collaboration with other pupils or external resource persons collect information and participate in the creation of knowledge. Didactically, this involves far more than simply transferring teaching activities from the black board to digital platforms.

E-learning needs to be more than the ‘use of technologies’ and it is more than a ‘communications and delivery tool ... to support students and improve the management of learning’. At its best, e-learning is a reconceptualization of learning that makes use of not only instructor-led pedagogy but all the flexibility that asynchronous, multi-party contribution can bring. At its worst, e-learning is a substitution of one delivery mechanism for another (Andrews & Haythornthwaite 2007: 19).

This project examines the use of Google Docs within group work settings in two first year classes at a Danish upper secondary school. Google Docs has become a widely applied platform in educational contexts due to its functionalities that affords a learner-centred approach enabling users to easily create, share, and edit documents, spreadsheets, presentations, and forms online (Perron & Sellers, 2011). Presumably, “there is considerable potential for Google Docs to serve as a platform for collaborative work. However, empirical evidence of the impact on online collaborative work is yet inadequate” (Chu & Kennedy, 2011: 585). By examining the effects of Google Docs as a learning environment that affords “socio-material interactions” combining physical and digital spaces (Sørensen, 2009; Ellis & Goodyear, 2016), this study hope to contribute towards more insight into this research area.

Research Context

One of the main areas of attention within Networked Learning theory has centred on the use of ICT to connect learners in “learning communities” (Hodgson & McConnell, 2019). While this often focussed upon online communities of learners separated physically, this study examines group work in the classroom with pupils seated facing each other around a table, each with a laptop. Thus, the learning environment in this case consist of hybrid spaces (Ellis & Goodyear, 2016) combining a physical dimension with oral communication and a virtual dimension with written communication on Google Docs.

A central point in Networked Learning concerns the agency of technology in any learning context. As a supplementary perspective, affordance theory offers a holistic, analytical perspective for examining the complementary relationship between learner and the learning environment. The concept of affordance captures the “possibilities for action” (Gibson, 1979) by referring to both the enabling and the constraining qualities of technologies. Thus, the affordance concept captures the insight that material qualities frame, without determining, the possibilities for agents’ actions in relation to an object (Hutchby, 2001). Importantly, the specific effect depends on the user as the same tool or technology has different affordances for different users: “Understanding the affordances of a particular technology or space is important because it sheds light on what people can leverage or resist in achieving their goals” (boyd, 2014, p. 10–11).

Day and Lloyd (2007) stress the holistic quality of this perspective by pointing out that learning technologies are only one of several contextual factors that constitute affordances for learning. Other aspects such as teachers, other pupils, and the learner’s own experiences and attitudes also influence the capabilities to perform the desired learning activities. In this paper, attention focusses upon how Google Docs frames the interaction among the pupils, how they collaborate and how leadership is distributed. Here, the study takes inspiration from Estrid Sørensen’s “socio-material approach” to learning that builds upon “the assumption that new as well as established technologies take part in and contribute to forming school practices” (Sørensen, 2009, p. 3).

Aims and Objectives

The aim is to analyse the socio-material interactions during Google Docs-based group work in a Danish upper secondary school. The main research questions are: 1) How do the pupils use Google Docs in relation to their group work, including how do they combine oral and written communication? 2) How does different leadership roles emerge? 3) How do the hybrid learning spaces (Ellis & Goodyear, 2016) afforded by the material surroundings in the group work settings seem to promote or inhibit collaboration within the groups?

A general question concerns how Google Docs configures space in a way that seems to afford cooperation (i.e. divided work among the group members where each person is responsible for solving a portion of the problem - which is deemed problematic by the teachers) rather than collaboration (i.e. coordinated, synchronous work activity on a shared problem). The laptops constitute a significant part of their material surroundings, but while

providing a platform for written group interaction, the laptops simultaneously afford individual spheres in which pupils seamlessly are able to divert attention from the group to carry out on-task as well as off-task actions individually. That is, sometimes they take a moment to read to solve difficult questions related to the task, and sometimes they seem to use the screen to hide from the group work. This analysis of what kind of learning space and what kinds of learning activities are afforded by Google Docs provides an empirical foundation for the final part of the paper which discusses didactical implications of the findings, including what kinds of group work activities are best suited to Google Docs.

Design

With the influx of digital technologies such as laptops in the classroom, new methods are needed in order to observe activities and practices with and around digital technologies. Ethnographic and multimodal approaches in combination are necessary to observe how agents choose communicative modes and how contextual factors inform these choices.

This study applies video ethnographic methods and focus group interviews with pupils in two first year classes at a Danish upper secondary school. Video analysis enables the studying of how “interactions and literacy practices are increasingly played out in digital environments” (de Roock, Bhatt & Adams, 2016, p. 106), including the “complexity of socially situated activity” and “the complexity of how multiple modes are used as organized resources” (Flewitt, 2011, p. 308).

Hence, multiple data collection methods have been applied in the two upper secondary classes studies, allowing the paper to pay “attention to the whole ecology“ of the group work settings (Bhatt, de Roock & Adams 2015), including how pupils communicate and collaborate in the hybrid learning space afforded by Google Docs. First, observations and informal interviews were performed before five group work sessions were recorded using two kinds of video sources: a video camera recorded the groups situated around a table in order to capture their social interactions, and individual screen-recordings captured activity on the laptops. This setup enables a detailed perspective into the pupils’ activities in a hybrid learning space consisting of face-to-face and online communication. Afterwards a short survey and focus group interviews with the recorded pupils were made. Finally, the data were coded and categorized using Atlas.ti.

Preliminary findings

So far, two main types of preliminary findings were identified:

Firstly, collaboration on Google Docs in the groups mainly takes place as parallel work forms at the expense of coordinated, synchronous work activities on a shared problem. Parallel work describes situations when the group members distribute work between themselves with each person responsible for solving a portion of the problem - a practice considered problematic by the teachers. While Google Docs has being linked with “considerable potential [...] to serve as a platform for collaborative work” (Chu & Kennedy, 2011), this study observed that actual written collaboration is hardly ever achieved. On the contrary, Google Docs appear to enhance dominant leader roles, which leads us to the other finding.

Secondly, in all the examined groups, a distinct leader was identified with the other members performing more or less peripheral roles. Shortly put, the leader was the one who took care of the writing in the Google document. Other leadership activities include planning and pacing the group’s work, asking questions to the group, deciding on answers and seeking supplementary input.

The presentation will consider didactical consequences of this study. All the examined group work cases used traditional assignments where their pupils answered questions to texts. Insights into the learning spaces afforded by Google Docs suggests a need for didactical reconsiderations.

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