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Title of your paper: Affordances in digital writing: Exploring teaching quality

Abstract

This paper examines how affordances in digital writing are managed in student-teacher discussions in the context of Finnish-Swedish lower secondary classrooms. The aim is to explore how affordances in digital writing become visible, what type of questions are addressed, and how it can be understood in relation to teaching quality. The study is guided by the following research questions: (1) What type of questions do students raise in relation to affordances in digital writing? (2) How are these questions managed in the student-teacher discussions? (3) How can the relation between affordances in digital writing and teaching quality be understood?

The concept of affordances, understood as the action possibilities allowed by technology in given contexts, is applied as a theoretical framework. In addition, digital writing is conceptualized as a situated practice through the lens of a non-linear framework of technology and a process approach to writing. Methodologically, the research draws on video-ethnographic data from a L1 classroom and a History/Social Science classroom in a Finnish-Swedish school, including 23 video-recorded lessons in total. Preliminary findings show that students address questions mainly related to text editing (e.g., paragraph divisions and software-based spell-checking) when writing digitally. Overall, it implies a need to recognize and identify different affordances, to find ways to cooperate with technology, and in that way give students access to the resources offered by technology in digital writing. The research deepens the understanding about the relation between affordances, agency and teaching quality.

Extended summary

Introduction

Supporting students' autonomy and agency in the teaching is generally seen as an indication of high-quality teaching in contemporary classrooms (Klette et al., 2018; OECD, 2019). As technology is integrated to different teaching practices to an increasing degree, it also becomes central in the constitution of agency and teaching quality (Fenstermacher & Richardson, 2005). High expectations are put on the implementation of digital tools and programs in the teaching, not least in connection to various writing practices that have become increasingly prominent across different school subjects. Previous empirical studies show that digital writing can promote students' sense of self-efficacy and motivation, encouraging interactive and collaborative writing, and function as scaffolding tools (Williams & Beam, 2019).

Technology entails several affordances (Gibson, 1977; Norman, 1988), i.e., action possibilities, allowing humans to perform different tasks when typewriting, enabling agency. However, the identification and uptake of affordances in digital writing presupposes a certain digital competence on individual level (Dahlström, 2019, 2021). Put differently, technology's inherent properties and functions need to become visible and perceived, for the students to be able to utilize the affordances, constituting a process where the teacher's support and instructions become crucial. Digital competence is, at least in the Finnish curriculum, one of the areas expected to be included in almost all subjects, all grades (Tanhua-Piironen et al., 2019). Yet, much remains unknown about how it is, and to what extent, explicitly emphasized in the teaching, especially when considering the affordances in digital writing.

The present study explores how affordances in digital writing are managed in student-teacher discussions in Finnish-Swedish lower secondary classrooms. The aim is to examine how affordances in digital writing become visible, what type of questions are addressed in students' and teachers' meaning making practices and, further, to discuss the relation between affordances in digital writing and teaching quality.

The study is guided by the following research questions:

RQ1. What type of questions do students raise in relation to affordances in digital writing?

RQ2. How are these questions managed in student-teacher discussions?

RQ3. How can the relation between affordances in digital writing and teaching quality be understood?

Theoretical background

Digital writing is conceptualized as a situated practice through the lens of a non-linear framework of technology and process approach to writing (Williams & Beam, 2019), i.e., as a recursive process where the typist moves back and forth, and in-between, different phases and modalities in the writing process. Further, to address the relational aspect, the concept of affordances is applied. As it was first introduced by Gibson (1977), the term 'affordance' is an action-oriented theory that describes the relation between living bodies and the environment and, more specifically, what the environment offers or provides the animal. In other words, affordances are opportunities for action in given contexts.

In an education technology context, Dahlström (2019) found in Swedish lower-secondary classrooms that 'write-ability', 'edit-ability', 'story-telling-ability' and 'accessibility' were the most salient affordances, enabling student agency, in digital story writing. That is, digital writing tools evoked a range of action possibilities expressed by the students, e.g., knowing how to write correctly, being able to manipulate and edit the text, and increasing the possibility to write more focused and precisely. Nevertheless, Dahlström (2019, 2021) stresses the need of practice in using digital technologies. In the lack of it, students are not able to utilize the affordances offered by technology.

It is emphasized that an affordance does exist only when perceived, i.e., it also constitutes a mental representation connected to the user's goals and abilities (Faraj & Azad, 2012; Norman, 1988; Orlikowski, 2007). That is, to be able to take on an action opportunity, the human actor needs to know and be aware that an affordance exists in a specific context. This supports

the idea that in classroom context affordances need to become visible in the teaching for the students to be able to utilize them. Thus, this study investigates what questions are raised, *in situ*, in relation to the accessible technical features and affordances in digital writing and, further, how these questions are managed in the student-teacher discussions.

Material and methods

Methodologically, the research draws on video-ethnographic data from a L1 classroom and a History/Social Science classroom in a Finnish-Swedish school, including 23 video-recorded lessons in total (L1 n=11; History/Social Science n=12). The data was generated in three waves during 2019-2021, with a three-camera solution. Additionally, 1-2 focus students (n=6) were followed closer each lesson, with a special focus on screen activities when students were using digital technology. The video-recordings are synchronized into a mixed three-camera configuration and computed with the NVivo –software built for qualitative data analysis. Further, the video-data is coded, and sequences will be cross-selected based on two fixed points: (1) focus student's use of digital technologies and (2) focus student-teacher discussions. Regarding RQ1, the aim is to identify moments where students address questions that concern affordances in digital writing, technology's properties and functions, and possible challenges. The following step addresses RQ2, aiming to dig deeper into the discursive practices; examine and describe how the questions raised are managed by the different participants. For instance, how do teachers respond to the questions raised? To what direction is the student guided? What significance is given to technology and how do its properties come into play? Finally, the findings will be discussed in connection with RQ3.

Preliminary findings and significance

Preliminary findings show that students address questions mainly related to text editing when writing digitally. Software-based spellchecking, an affordance of write-ability and edit-ability, is an often-used function when students are performing textual changes in digital writing. Discursively, spellcheck software is framed as a trouble source and linguistic authority. Further, technology is often toned down, hence its potential use might not always become fully utilized. Overall, the findings imply a need to recognize and identify different affordances, to find ways to cooperate with technology, and in that way give students access to the resources offered by technology. The research contributes valuable knowledge about the relation between affordances, agency and teaching quality.

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