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Texts, Information and Multimodality in the Digital Age

Anna-Lena Godhe

<https://orcid.org/0000-0002-3564-9390>

anna-lena.godhe@mau.se

Sylvana Sofkova Hashemi

<https://orcid.org/0000-0001-5248-771X>

sylvana_sofkova.hashemi@hh.se; sylvana.sofkova.hashemi@gu.se

Linnea Stenliden

<https://orcid.org/0000-0002-3115-9060>

linnea.stenliden@liu.se

In the last three decades, the development of digital technology, and not least the Internet, has affected how we communicate, make meaning, and learn, both on an individual and on societal levels. Changes in communication patterns also coincide with increased globalization, changes in production and economic conditions. What drives what is difficult to ascertain, but all factors impact the educational system and contribute to the changing conditions for teaching and learning. Teaching nowadays involves the use and incorporation of digital technologies where learning increasingly becomes a matter of student-active participation, collaboration and sharing. Moreover, students need to be able to interpret information from a diversity of sources and media, formulate questions for this content and solve problems (Binkley et al., 2012; EU, 2017; Godhe et al., 2020). This special issue aims to showcase digital approaches to communication with the help of case studies that illuminate how text, information and multimodality in the digital age shape and influence education.

Keywords: digital technology, digital texts, multimodal communication, school education

Today, knowledge development in schools usually takes place multimodally (cf. Kress, 2010). Access to digital devices and Internet in school entails a broadening of resources for learning. Animations, movies, images, symbols and sounds are present to an increasing extent. Students interact with digital technology, in which multimodal, digital meaning-making challenges what is usually meant by “texts”, “reading” and “writing”. Contemporary texts can be linear in structure as we are used to when we read with a clear beginning and an end. However, more often than not, the reader needs to relate to ways of interacting with a digital, multimodal text, for example, by clicking on links or contributing with information. Therefore, digital texts are more dynamic and open to the reader’s decisions and participation. Moreover, the reader needs to master the technology and develop strategies for critically understanding and navigating texts and making meaning from a multimodal flow of signs (c.f. Sofkova Hashemi et al., 2020). The process of reading and writing texts becomes a matter of constructing and re-constructing different resources and adapting to communication in the digital environment (e.g. Jewitt, 2006; Kress, 2010; New London Group, 2000). Changes in technology, design and use of texts, therefore, require the concept of text to be expanded to include several modalities and materialities (c.f. Merchant, 2008). All in all, these changes and developments challenge views of knowledge, working methods and assessment practices in the educational systems (Baldwin, 2016; Bearne, 2009; Cope & Kalantzis, 2010; Stenliden & Nissen, 2021). Hence, this special issue of *Educare* explores the impact that an increasingly digital and multimodal communication has on teaching and learning practices in school.

The first three articles explore changes in instructional approaches relating to the digitalization of education and contemporary societal issues, while the final two articles take on the challenge of measurement and assessment. Sylvana Sofkova Hashemi and Maria Hipkiss explore the relations between space, actors and resources in a newly built school, which was designed to cater for flexible learning environments by offering diverse rooms, furniture and digital resources. The authors regard the building of such new schools as a way to address changes in contemporary societies where cultural and linguistic diversity and rapid development of technology challenges schools’ need to be future-oriented. Based on the data gathered from a digital platform used in the school,

and classroom observations and interviews with teachers and students, the authors describe the characteristics of some emerging teaching and learning practices in this flexible learning environment. They conclude that the flexible school design enables multimodal and digital encounters relevant to contemporary societies. Moreover, by looking at the combination of space, actors and resources Sofkova Hashemi and Hipkiss claim that studying the complexity of teaching and learning in this context is possible.

Lisa Molin addresses how critical literacy education in secondary school may be approached through the analysis of different modalities in a film clip from a popular TV-series for youths. Based on an intervention where lessons were observed and recorded, Molin analyzed the lesson design focusing on the decoding of modes and whether this design enabled students' understanding of a film clip. Molin approached her analysis from a sociocultural perspective and focused on the social practices of literacy rather than on conventional language skills development. The lesson design represented an example of how to work with multimodality by focusing on one modality at a time. However, the students also paid attention to how the different modes (e.g. images and sounds) convey meaning together and how the modes were constructed deliberately to enhance a certain message. In peer discussions, the students tended to raise critical questions. Allowing for such discussions in a lesson design is, therefore, essential to develop students' critical literacy and to foster social justice and democratic participation.

Ulrika Bodén, Linnea Stenliden and Jörgen Nissen explore how secondary-school students' insights from analyzing interactive data visualizations are translated into multimodal knowledge visualizations. The authors aimed at illuminating conceptual practices of representation that might transfer across media when moving from one kind of text to another, or even mutating into hybridized genres. Basing the study in Actor Network Theory, the authors use concepts from a socio-material semiotic approach to study interactions in the classrooms between both social and material actors. The students were shown to have translated their insights from the data visualizations by re-arranging the multimodal information several times. The final version of the students' knowledge visualizations contained combinations of both visuals and texts that enabled their insights to be communicated to others. The authors conclude that students need support in

communicating such insights when reading multimodal screens and when writing or producing multimodal presentations, based on which teachers assess student knowledge.

Therefore, Bodén, Stenliden and Nissen claim that the multimodal modes of presenting and sharing knowledge challenge teachers' assessment practices of students' achievements.

Pierre Fastrez, Julia Bihl, Eric Delamotte, Christophe Ronveaux, Nathalie Lacelle, Eve Gladu, Catherine Delarue-Breton and Denise Sutter Widemer represent an interdisciplinary global collaboration focused on media literacy and the development of assessment tools for teenagers' media literacy competence. The authors uncover the lack of integration of digital literacy in school subjects and argue for a revision of the theoretical and empirical knowledge about the competences involved for this integration to take place. Being part of a larger project situated in several French-speaking regions, the authors also employ the same questionnaire, which in the present study was answered by lower secondary school students in Belgium. The questionnaire focused on information search and web production and combined task-based measurements with self-reported competence and practice. Surprisingly, students report high levels of competency in information search but are less confident in web production. However, the difference is reduced when the ability to perform specific search-related or production-related actions are assessed. The authors conclude that a better understanding of media literacy competence would promote the transferability between learning and literacy in and outside of school.

Patrik Hernwall, Eva Insulander, Anna Åkerfledt and Elisabeth Öhman study secondary school teachers' assessment of multimodal texts and discuss opportunities and challenges perceived by the teachers. Theory of social semiotics informs the analysis of the data. On the one hand, the data demonstrated that the teachers were given access to their students' learning process through digital tools and perceived opportunities for sharing texts with colleagues when assessing students' multimodal texts. On the other hand, arguably, the opportunities perceived by the teachers were simultaneously challenged by the wordings in the steering documents, which focus on the assessment of products rather than processes, verbal language rather than multimodal compositions, and subject specific assignments rather than multi-disciplinary ones. Based on the findings, the authors argue that it is important to not just assess student performance based on the predefined goals and knowledge requirements.

Altogether, the five articles in this special issue address the changes in how we communicate and learn in a school context in the digital era from theoretical perspectives that have a common interest in investigating practices to understand how teaching and learning takes place. Three of the articles report findings from interventions and observations in the classrooms where digital tools were part of everyday teaching practices. Sofkova Hashemi and Hipkiss focus on the flexible learning environment of a recently built school and point to the need to balance structure and free exploration. Bodén et al. and Molin investigate particular teaching practices, where multimodal information and texts are central. How the deconstruction of multimodal text enhances the students' understanding of these texts is in focus in Molin's article, while Bodén et al. investigate how students reconstruct multimodal information to communicate their understanding of an assignment. The final two articles address issues concerning assessment. While Hernwall et al. focus on the assessment of text from a teacher's point of view, Fastrez et al. have a broader interest in students' competences and how to develop and assess them. However, both these studies advocate for teachers foregrounding certain aspects of assessment to develop more general competences – for example, paying closer attention to how digital and multimodal texts are created and how the combination of different modes and media contribute to meaning-making.

To sum up, the articles in this special issue contribute to our understanding of learning and teaching with and through contemporary, multimodal communication practices. They show how changes in the media landscape, where verbal language is a medium among others, challenge education and teaching practices. How to teach and learn multimodally or how to evaluate and assess multimodal texts and meaning-making is not yet self-evident. The complexity of teaching and learning and supporting students' development of the relevant skills and knowledge are accentuated in the included studies. Moreover, the studies illuminate the need to combine several analytical tools to address these complexities. By studying classroom practices and the challenges experienced by teachers and students, the contributing articles underscore the importance of understanding and recognizing multimodal communication in school (c.f. Bezemer & Kress, 2016) and discuss how previous perceptions and conditions for reading and writing are transformed. The critical questions raised and the new knowledge amassed in this special issue support and create opportunities to improve education that addresses texts, information and multimodality in the digital age.

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