What happens when multimodality comes into the classroom? A study of Swedish children’s use of multiple modes while creating narrative text

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Abstract
The aim of this study is to analyse and describe the impact of digital devices with a multimodal character on children’s creations of narrative texts. The focus will be on the process of creating texts, the conditions for creating texts and the results, the texts. Text is seen as multimodal and the theoretical approach is social semiotics. The method will involve a multimodal didactic design approach. Data sources will include observations, interviews and text analysis. The analyses will comprise content analysis, writing discourse analysis and multimodal text analysis. The study is still in progress so some expected outcomes are presented in the text.

Keywords: Digital devices, multimodality, narrative texts, semiotic resources, writing

Introduction
Our terms of communication have changed with the digitization of society. With the availability of multiple ways to communicate, the ways in which we express ourselves have increased. These different means of communication also mean that we use more sign systems and semiotic resources for communication than we have ever done before. With digital tools, we have smooth access to different semiotic resources in the same unit, via tablets, computers and smartphones. When using different semiotic resources, e.g. letters, in a systematic way, it becomes a mode. A mode is a socially and culturally shaped resource used to create meaning. Pictures, writing, layout, speech, movement and images are examples of different modes (Björkvall, 2009; Kress, 2010). Many children learn to read and write at an early age with the help of digital tools, which have a multimodal character. Children switch easily between different modes based on their interests and what is available in their situation. How these abilities are utilized still varies considerably in Swedish schools. The impact of digital tools in schools, considering the process of creating narrative texts and how children

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use different modes to make and represent meaning, is an area that is yet to be explored in depth. The focus in this study is on children's writing process, the conditions for writing and narrative texts. The overall research question concerns what impact digital tools with a multimodal character have on students' creation of narrative text. This will be studied at various levels in two studies. The first focuses on seeing differences in handwriting and writing with digital tools and the other on text creation with digital tools, which include multiple modes such as verbal text, sound, video and images. The second study is based on and developed from some of the experiments in the first study. An example of this is that, in the first study, teachers chose to decide that children should be using only writing and sound (speech synthesizer) while creating narrative texts. As my interest lies in analysing how children use different modes and what work the different modes do in texts, I, together with the teachers, developed a design for writing that includes images, sound, writing and video. This became the condition for the second study. It will also be the same children creating narrative texts in the two studies. In the proposed study, I will examine how the writing process is shaped by children's use of various resources and how they present their narratives on the basis of given resources in particular situations. A design-oriented multimodal approach will be used, based on theoretical perspectives: social semiotics (Kress & Hodge, 1998; Kress, 2010), and a multilayered view of language (Ivanič, 2004, 2012). The methodological tools focus on a broader concept of text and give the opportunity to understand learning and representation by going beyond written and spoken verbal language. Other modes, such as images, sound or video, are seen as part of children's' ability to create meaning and express themselves and thus included in the analysis. The method will use a multimodal didactic design approach. Several data collection methods will be used: text analysis, qualitative interviews, observations and a survey. The study is still in progress so rather than results I will present some expected outcomes.

**Theoretical framework**

The social semiotic perspective will be used as a theoretical overall framework. In addition to that, other more local theories will be used in order to analyse the empirical data. The multidimensional theory of language, developed by Ivanic (2004, 2012) has some basic assumptions in common with the social semiotic theory. That is, texts are multimodal and their form and content have equal importance, forming a whole together. The creation of texts happens through interaction with others and should be seen in a social context. Together, these theories give me the tools and ability to analyze and describe the impact of digital tools with a multimodal character on children's' creation of narrative text. Ivanič’s theory complements social semiotic theory, offering an opportunity to analyze empirical material comprising students' writing and their text production.
in terms of both form and content. To understand the whole complex process of something, West (2007) explains that it may be necessary to have a multi-dimensional theoretical framework in which each part is first analysed, and then the whole is considered.

**Social semiotics**

The basic assumption of a social semiotic perspective is that everything created is made through social creation with others and/or for others. Explanations for why our communication is as it is can be retrieved from the social context we find ourselves in (Björkvall, 2009; Kress, 2010). Another assumption is that meaning is created using character-building in several different sign systems. Representation and communication are social practices whereby representation focuses its interest on and involvement in how we understand and form meanings of things and events in the world. It has to do with how we materialize our view of the world as we perceive it. Communication is more the desire we have to share this representation with others (Kress, 2010). This perspective also provides tools to analyse how we, with our different ways of communicating, participate in the creation of the social world; it can simultaneously be described as a communication theory, a theory of representation and meaning and a social theory (Hodge & Kress, 1988). Texts are regarded as multimodal, created with multiple modes such as there is no news; however, texts are multimodal, they have been written with accompanying illustrations for a long time. But the concept of multimodal text is new and was first used when it became easier to produce composite texts consisting of writing, pictures, sound and video. Multimodal texts are texts that are composed using several different semiotic resources. A semiotic resource is material which can be used for communication (Danielsson & Selander, 2015). There is also a meaningful relationship between the text parts. When semiotic resources are used in a systematic manner they can be called semiotic modes. Two of the most well-developed modes when it comes to communicating are writing and speech. They are important for children if they are to learn and develop, but considering the media-based environment that children are a natural part of, they are not sufficient. Images, sound, animations and other modes that play important roles in children’s everyday meaning-making should also be common modes in the education environment. It is also important to take into consideration that each mode has its limitations and opportunities, meaning that images do what they do and writing do what it does, and in combination they can do a different thing (Björkvall, 2009; Kress et al, 2008).

Here one can think of the possibilities and limitations of the various semiotic resources to create the meaning one wants to express. One can explain the choices made in a multimodal text, discuss why these choices have been made, how these choices relate to the social context and what information value the different semiotic
modalities have. An ethical aspect of this, according to Kress (2010) and Björkvall (2009), is that one can also say something about a text’s availability and the right of children to create meaning and express themselves using different sign systems according to their interests and abilities.

A multilayered view of language

Based on the theory and assumption that language and writing are done in layers that are interdependent and of equal importance, Ivanič (2004, 2012) has developed an analytical model for six different writing discourse attributes that can be helpful to understand the writing process, both by seeing how and what an individual writes, as well as having an opportunity to understand what children do when creating text. She explains writing on the basis of these writing discourses: discourse skill, creativity in discourse, the discourse process, genre discourse, the discourse of social practices and finally socio-political discourse. All these discourse elements are to be seen as building blocks in writing and should include the writer’s teaching, according to the author.

Methodology

In a multimodal approach, this study design is based on several different technologies from a multimodal perspective. The study is intended to capture children’s writing processes as well as representations in the form of narrative text created in different sign systems. The multimodal perspective will also be visible in parts of the analysis. This combination of methods will generate different types of data. A short presentation of the two studies and the methods which are to be used is given in the following.

Study 1

An intervention involving digital devices which means changed conditions for creating texts. I had access to a class where before they had only used paper and pen when creating narrative texts. The data collection was done in two steps, using the same methods, before and after the intervention of digital devices (tablets). The data-collection methods were: observations to see what is going on during writing activities; interviews with 17 children to study the writing process – listening to children’s thoughts about how they find it easiest to write and what impact digital devices have on their text creations; narrative texts, created with both pen and paper and tablets by the same children. The aim here was to see if the texts change with respect to content and form.

To analyse this material, different methods will be used: the discourse analysis of Ivanič (2004) and content text analyses. The teacher of this class decided that the children could only use writing and sound on the tablets. Given this proviso and considering my interest in creating multimodal texts relying on the children’s interests and abilities, there was a need to develop other conditions for creating
narrative texts. Study two was designed by me and the class teacher in order to be able to study how children create texts using different modes.

**Study 2**

Using multimodal analysis, the purpose of this study is to examine and understand children’s’ creation of multimodal stories with sound, images, video and text. Such texts are created by children in informal settings and such texts take on more of the character of design. According to Kress and Van Leeuven (2001), technology allows the integration of many different modes, such as text, images, video, voice, music and sound effects, causing text to look more like a design. Danielsson and Selander (2014) describe the tradition found in Swedish schools in lower grades where it is common for children to receive instruction in how to combine text and images, usually pictures carry the main message here. Verbal text acts as an accompaniment to the pictures. Later, as children get older, the focus shifts and pictures become more of a clarification of verbal text that children have produced. Access to digital media in schools provides children with the opportunity to do more, to be able to create their own multimodal books, when writing is replaced by composing texts.

The focus in this study will be to examine which semiotic modes children use, and what work the different modes do in their texts. There will also be a focus on the text-creating process, as in the first study. This study will be conducted on the same class as Study 1, although a year later. When study is carried out, the class will design stories using an app (application) that is designed to do ‘multimodal books.’ Children will become familiar with the opportunities available within the app by practising beforehand. It is important that the children are aware of the different opportunities within the app. The instructions from the teacher will be to create a narrative text using the modes they prefer. The children will then be free to write or ‘design’ their own stories. The data collected will comprise the students’ finished narrative texts along with observations.

It is to this study that I think that the multimodal analysis contributes most. I think that the analysis model that Danielsson and Selander (2014) developed can be considered in this study. The headers used in multimodal analysis then become:

- **Conditions for writing:** what can be explained is the teacher’s design of text-creation events, what resources are available in the text-creating situation.

- **Overall structure and staging:** an analysis of how children design their work. An analysis of structure can be performed and the semiotic resources used and themes covered.

- **Selection of semiotic modes:** how children use different modes can be analyzed, and what the different modes do in the narrative can be explained.

- **Interaction between text parts:** an
explanation of text parts can be given, what is foregrounded and what is backgrounded. Do the different modes complement each other or do children mostly use example images.

These parts will first be analyzed individually and then together in order to understand whole texts and the process of creating them.

**Some preliminary results and expected outcomes**

As this study is still in progress there are no actual results to present, but it is pertinent to write about preliminary results and expected outcomes. Some previous outcomes indicate that the impact of using digital devices differs greatly among children. To be able to add a speech-synthesiser as you write seems to be very helpful for children who need a lot of support from the teacher with their spelling and for children that have Swedish as a second language.

For students who find it easy to write there was apparently no significant difference if they wrote by hand or on tablet. Most of these students wrote shorter texts using digital devices. These students found it most disturbing with the speech synthesis.

The greatest differences were seen among pupils with Swedish as a second language as well as among students with Swedish as their first language that had difficulties with keeping the structure of the text. These differences were seen in the ability to spell and in the length of texts.

Regarding students who showed better results when they wrote digitally, it seems that it was the speech synthesis function that was crucial.

Taking into account the preliminary results concerning the length and the spelling in the texts, next step is to analyse if it is possible to see any differences in text structure and how the students uses the language when writing in different conditions.

Others seem to be annoyed by sound, and so they do not use it. The writing process will change when using digital devices with a multimodal character. Some preliminary results indicate that when students write by hand it becomes an individual process whereas when writing with digital devices, the process becomes more a process in interaction. Another result indicates that when students’ texts were influenced by others, they became similar. If children are allowed to use all the modes in the unit, they can design text in a different way from those created using pen and a paper; it will be more like a design process. This will also vary among the children according to their interests and abilities. Narrative texts do change when children use digital devices, in both form and content.

**References**


