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School subject paradigms and teaching practice in the screen culture –

Art, Music and Mother tongue (Swedish) under pressure

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Abstract

There are great expectations that new digital technology will become a powerful tool for developing education activities. Like many countries in Europe and worldwide, Sweden has invested large resources in new technology and new media, hereafter called digital media, becoming a natural and important part of school teaching. The developed use of digital media is assumed to lead to educational change and hence better teaching (SOU 1994:118; Prop. 1995/96:125). That such expectations have not been fulfilled, however, is shown in a number Swedish, European and international studies (Skolverket [“the National Agency of Education”], 2005a; 2005b; Hennesy et al., 2005; Jedeskog, 2005; Alexandersson & Limberg, 2003; Alexandersson & Limberg, 2005; Alexandersson & Runesson, 2006; Alexandersson et al., 2006; Limberg et al., 2008a; Limberg et al., 2008b; Balanskat, Blamire, European Schoolnet 2007). One explanation of this situation may be that the incorporation of digital media differs among different school subjects (Hennesy, 2005). School subjects have their characteristic structures which are of great importance for how digital media can be integrated (McEachron, 2003). Digital media influence the way in which school subjects can be described from a knowledge theory perspective, i.e. what constitutes the subject’s paradigm (Baggot et al., 2004) and its teaching practice. The point of departure of this article is the school subjects of Art, Music and Mother tongue (Swedish), which like other school subjects are feeling the pressure of a digital media and screen culture to an ever increasing degree, and it queries whether and how teachers and pupils in the three school subjects conceive of and relate to the shifts that take place in the respective school subject when digital media are being more and more integrated into the teaching. The study is based on interviews with pupils and teachers in the three school subjects and the result is presented in terms of four themes that appear in the investigation, namely: (1) Educational environments (2) what teachers and pupils regard as the sacred and the profane; (3) motives for using digital media in the teaching; and (4) whether and how working methods are changing with digital technology, i.e. questions concerning collective and individual aspects. In all three subjects there are clear indications that digital media have already started to influence both the subject content and the working methods while, at the same time, the proportion of digital media is limited and the impact is weak.

Background

This article deals with how digital media influence the way in which school subjects can be described from a knowledge theory perspective, i.e. what constitutes the subject’s paradigm

and its teaching practice. More concrete, it queries whether and how teachers and pupils in three school subjects conceive of and relate to the shifts that take place in the respective school subject when digital media are being more and more integrated into the teaching.

Until now little attention has been paid to comparisons between school subjects within the area of research on digital technology, which for a decade has centered on learning rather than teaching. Our study is in this sense theoretically connected to the theory development that has long been conducted in Swedish educational research, namely the so-called frame factor theory introduced by Urban Dahllöf and then developed by a number of Swedish researchers (Broady & Lindblad, 1999). With this study we also want to take one step further and emphasise the importance of technologies as a frame factor in the teaching context. The theory formation of educational science has until now paid little or no attention to the fact that technology have great and extensive implications for what Bernstein (1996) calls content and framing in an educational discourse (Erixon 2010).

In 2006 the European Parliament made a decision about a recommendation for eight key competencies considered necessary for lifelong learning. One of these key competencies was digital competence, which comprises knowledge, skills and attitudes to digital technology:

Digital competence involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet. (*Europa – Gateway to the European Union*).

Although large resources have been invested in new digital technology becoming a natural and important part of the teaching of schools, related developments have been rather slow. There are marked differences among different countries and regions in Europe as regards national ICT policies, ICT infrastructure and “e-readiness” (Delrio & Dondi, 2008). Another study (Balanskat, Blamire, European Schoolnet 2007) shows that the use of ICT is developing successively but slowly. Broadband connections are used by many schools. In Europe nine pupils use a computer on average. Researchers have found that ICT positively influences teaching in primary schools, especially in the mother tongue. The classroom use increases with the integration of different kinds of equipment: laptops, interactive whiteboards etc. On the other hand, social media and networks are used to a limited extent. Questions of acquiring equipment have become questions of how to use the equipment. Teachers are often interested in using digital resources, but more will have to be done in order to use the equipment in the best possible way. It has not been possible to show whether the national ICT policy has influenced the practice in the classroom.

In Sweden, older technologies are still dominant in the school subjects of Art, Music and Mother tongue (Swedish), but new digital technology is making inroads in various ways (Erixon, 2010; Scheid 2009, Strandberg, 2007). It seems as if schools’ ideational basis rests on

the practical handicraft and older technologies (Erixon, 2010). For this reason, schools function in some respects as an arena for the polarisation of technologies. The market-oriented Organisation for Economic Co-operation and Development (OECD) believes that the use of digital media has not developed in an educational culture but outside schools (OECD, 2001). It contends that for this reason there is an inherent tension between teaching based on digital media on one hand, and traditional ways of judging and examining works in schools, on the other. According to Demetriadis et al. (2003), teachers are being asked to adapt their teaching to what are called the needs of an “invading” culture, i.e. digital media and ICT culture (p. 33). Therefore, the introduction of digital and traditional media in an educational context may be seen as a negotiation between different cultures, where the “invading” school culture must redefine its boundaries (Demetriadis et al., 2003). The way in which new technologies are used in education too often reflects an epistemology that takes its point of departure in what they call a linear “single context”. In contrast, in many knowledge-intensive human learning activities outside schools, the users of new technology experience a different type of knowledge formation by participating in “multiple contexts of understanding”, which requires a higher form of thinking, analysis and synthesis. According to Demetriadis et al., schools must therefore develop a pedagogy that is also based on experiences of learning activities in multiple contexts outside school, i.e. a kind of widened learning.

Dede (2008) thinks that a “seismic shift in epistemology” has occurred when people start using Web 2.0-related tools such as blogs, wikis, pods etc. in the teaching context. He thinks that Web 2.0 challenges the traditional view of knowledge.

/.../ the content and skills that experts feel every person should know are presented as factual ‘truth’ compiled in curriculum standards and assessed with high-stakes tests. (80)

Against this, he refers to the “Web 2.0 definition of knowledge”, which he thinks is:

/.../ collective agreement about a description that may combine facts with other dimensions of human experience, such as opinions, values, and spiritual beliefs. (80)

In international research concerning the three school subjects that are in focus in this article and their relation to digital media, there are e.g. some English studies showing that teachers of art generally have a positive attitude to integrating digital media in their teaching (Wood, 2004). In a similar manner, several studies show that the use of computers in the teaching of art is considered very important by the students (Busby et al., 2000; Callow, 2001). As regards the area of music, it is not only a matter of the increasing focus on one’s own creation of music but also of the interactive and communicative dimensions of creating music. Dyndahl (2004) draws the conclusion that creating and playing music and the knowledge structures and forms of communication of the subject of Music are affected when digital media are brought into the teaching. Jewitt (2002) shows that when in the teaching of literature (English) they change from reading Steinbeck’s story *Of Mice and Men*

as a written text in a book to experiencing this story in a transformed CD-ROM format, this is of great importance for how they experience and interpret the entity of the “literary character”, which is central when working with fiction. In order to understand what happens, Jewitt regards the realisation of the different characters in the story as “transformations” (p. 175) of the written novel:

The CD-ROM is the product of the designers’ modal re-shaping of the character from the mode of writing to the multiple modes of the screen. (s 175)

In this transformation a transition takes place from the idea of a mental conception of the characters to a more visual conception. Jewitt thinks that this widens the conception of what reading is. In her view, the structure of a CD-ROM provides a reflexive tool for studying the character as an entity, and the result is that the entity of “character” is not the product of an individual reading, but the result of a collective social reading.

Sutherland et al. (2004) base their study on asking how “embedded” digital media are in different school subjects. In some school subjects digital media are regarded as a “Trojan horse” (Olson, 2000), standing in conflict with a traditionally deep-seated “subject grammar”. Like Sutherland et al. (2004), with environments taken from Great Britain, Selwyn (1999) shows with examples from the USA, and Goodson & Mangan (1995) with examples from Canada that the conception of subject cultures is important with regard to teachers’ and pupils’ attitudes to and hence use of digital media.

At the same time, young people are bringing popular and media cultural knowledge and experiences into the classroom and the specific school subjects. Their competencies in this respect are well developed as regards making web pages, handling files, downloading music and pictures, using email and word processors and producing different kinds of multimodal presentations. Outside school they live to an even greater extent in a multimodal culture, where they use a large number of different media technologies for various purposes and in various communicative situations where pictures, music and texts interact (Facer et al., 2003; Kress & van Leeuwen 2001; Elmfeldt & Erixon 2007).

The school subjects of Art, Music and Mother tongue (Swedish)

The developed use of digital media is assumed to lead to educational change and hence better teaching (SOU 1994:118; Prop. 1995/96:125). That such expectations have not been fulfilled, however, is shown in a number Swedish and international studies (Skolverket [“the National Agency of Education”], 2005a; 2005b; Hennesy et al., 2005; Jedeskog, 2005; Alexandersson & Limberg, 2003; Alexandersson & Limberg, 2005; Limberg et al., 2008a; Limberg et al., 2008b). One explanation of this situation may be that the incorporation of digital media differs among different school subjects (Hennesy, 2005). School subjects have their characteristic structures which are of great importance for how digital media can be integrated (McEachron, 2003).

A characteristic feature of the school subjects of Art, Music and Mother tongue (Swedish) is that they are communicative. As early as 1972, Filmutredningen [“the Film Commission”] (SOU, 1972:9) proposed introducing a new block of interrelated subjects in the timetable: “communication”, which would replace Swedish, Music and at that time Drawing. Several consultation bodies were critical and pointed out, among other things, that “our most important means of expression”, i.e. words, is thereby threatened (Stigbrand, 1989, p. 12). What people only seemed to suspect in the early 1970s is now clearly discernible 40 years later. Through the rapid development of new digital media the written culture has come to be increasingly challenged in the last few decades.

The subject of Art in schools is connected to a high degree to the tools and materials used in the subject, such as pencils, brushes, paper and paint, and hence to the traditional ways of constructing a picture. The tools are accompanied by a powerful tradition and history, linked to a traditional concept of art and to places where fine arts are shown, e.g. museums and art galleries. In addition, in the subject of Art there is a communicative part that since the late 1960s has been included and comprises modern media, such as photography and mobile pictures, i.e. a number of pictorial genres besides pictorial art. In Lgr 80 [“the Curriculum for primary and lower secondary education of 1980”] art is seen as a language and an “important means of communication by the side of speaking, reading and writing” (Skolöverstyrelsen [“the National Agency for Education”] 1980:69) which, among other things, is made clear in the change of names from Drawing to Art. Since then, later curricula have focused ever more on a broad concept of art and not on only one concept of art. In the curriculum for the school subject of Music, one of the objectives is that pupils should develop their ability to use IT as a tool in their creative work (Kp 2000).

There are no further specifications of suggested instruments, except where IT is mentioned as support for learning and playing music. The creation of music is exemplified by pupils without instrumental skills being independently able to make a composition with the aid of a computer. The school subject of Swedish is well summarised in the first sentence of the curriculum where, under the heading “The subject’s aim and role in the education”, it says

/.../the education in the subject of Swedish is aimed at giving the pupils opportunities to use and develop their ability to speak, listen, see, read and write and experience and learn from works of fiction, film and theatre.

Reading, speaking and writing are in the focus of teaching in the subject of Swedish and hence also of the technologies of paper, the pencil and the book (codex). Activities and competencies take their point of departure in old technology. For this reason, how important it is to learn to write by hand is emphasised, not to learn word processing by means of a keyboard. The development of digital media is said to “create opportunities for development”, but the concrete meaning of this is not mentioned. Language and works of fiction are concentrated on.

A glimpse at the rhetoric of the curricula of the three subjects thus shows that digital technology has different relations to the three school subjects of Art, Music and Mother tongue (Swedish). In both Art and Mother tongue the old technology in the form of paper, brushes, pencils and books is still expected to dominate in the conducted activities, while the school subject of Music has a closer relationship to digital technology and hence also to youth culture.

Based on Nationella utvärderingar [“National evaluations”], NU-03, something can also be said about the three subjects’ practice as it appears at the beginning of the new century. In the subject of Art the more traditional teaching of painting and drawing still has a strong grip on the way of thinking about the subject. It is image production by hand that dominates the subject of Art and the scope for working with digital media is limited (Marner, Örtégren & Segerholm 2005). The subject of Music is described as an experience-based activity, where musical activities are most often collective and based on singing and playing instruments in small groups. According to the teachers, the activities are aimed at providing musical experiences and social companionship. These are forms of teaching that the pupils appreciate. The pupils think that performing music should be “for real” and resemble musical life outside school (NU-03, p. 151). The repertoire is often influenced by the teacher’s sensitivity to the pupils’ conceptions of musical content and motivation for the activities (ibid.) and by the teacher’s own knowledge of music, experiences and interests. In the subject of Mother tongue, the pupils often practice presenting their views orally, and they read works of fiction in most or all lessons. The least prioritised objective in Mother tongue is work on the norms of the written language.

Theories

The point of departure of this article is a media ecological perspective. “Media ecology” studies and takes an interest in how different forms of communication media affect human beings’ perceptions, understandings, feelings and values (Postman, 1970). From the point of view media ecology a media environment is a complex message system which enjoins human beings’ specific ways of thinking, feeling and behaving. It structures what we can see and say and therefore also what we can do, assigns roles to us, exhorts us to play these roles and states what we are allowed and not allowed to do (Meyrowitz, 1985/1986; Goffman, 1959).

Media ecology claims that the media of communication are not neutral, transparent or value-free channels for transporting information from one place to another. The idea is instead that media’s inherent physical structures and symbolic form play a decisive role as regards the design of what and how information is encoded and transmitted and hence also how it is decoded. It is the structure of the medium that decides the content and character of the information. Media ecology therefore assumes that each medium’s unique set of physical and symbolic characteristics carries with it a set of systematic and ideological emphases (“biases”). The different inherent physical and symbolic forms of different media

presuppose correspondingly different emphases (“biases”). Different media are therefore considered to promote different physical or perceptual, social, economic, political and cultural effects that may be related to media’s inherent emphases (biases). It is a matter of how media influence culture, i.e in this study school culture (Strate, 2011).

An important aspect is the assumption that all human activity is mediated by means of tools (Wertsch, 1991). The first element, *mediating*, stands for an indirect joint action with the surrounding world and for our contact surface with a social surrounding world or, in more modern terms, the interface between the individual and society. Mediating tools are resources that are used for participating in social practices and communities of practice. Different learning practices can in this way be seen as tools developed in the practice of schools. Texts and genres also function as mediating tools, i.e. we must learn to use specific genres to be able to participate in a certain social practice. Besides a cognitive aspect, the tools also have a social aspect, formed in a certain period within a certain group. They are therefore dynamic and specific to different groups, periods and contexts. By tradition the mediating tools in the form of physical aids or technologies state the preconditions for and set limits on the “texts” the pupils can produce and consume within the subject’s social practice. In the subject of Art it is paper and different colours, in music different musical instruments, and in Mother tongue the paper, pencil and book.

From a media ecological perspective, mediating tools also provide preconditions for the social companionship in a social practice, e.g. with regard to power relations and hierarchies. In their different activities people not only do something by means of technology, but technology always also does something with those who use technology (Meyrowitz, 1985/1986). In this way mediating tools limit and control our actions and thoughts. Tools thus create both opportunities and obstacles (Wertsch, 1998, p. 38).

In order to analyse the ways in which different school subjects relate to digital media and to what extent new digital technology has influenced the activities in different school subjects, one can use Bernstein’s concept “the sacred and the profane”, which he took from Durkheim. The “sacred” concerns what is specific in a subject and distinguishes it from all other subjects as well as the socially discursive demands this places on the subject. The “profane” is discourses that challenge and change the “sacred”. Bernstein’s theoretical concepts of “framing” and “classification” can also be used for analysing division and integration respectively of subject content and of teachers’ and pupils’ changed attitudes to one another and power to influence teaching methods and teaching content.

Based on Kuhn’s (1962) concept of “paradigm” we think of a school subject in a relatively stable state where certain content, methods and technologies are encouraged. Via the digital media that children and young people grow up with, and that which politicians have for a long time wanted to bring into schools’ activities, the subjects are exposed to pressure. An overload of subject matter, content shifts and conflicts is emerging, what Kuhn calls

“anomalies”, which may lead to “paradigmatic” changes. In substance, such aspects have so far been neglected in the research on digital media in an educational discourse.

Schools are an institution, but may also be regarded as a medium or a tool among others for transferring cultural values and knowledge as well as what society regards as necessary knowledge and abilities (Salomon, 2000). In that sense, schools are also a recontextualisation field (Bernstein, 1996/2000), which implies that the activities conducted within the framework of schools have been moved from a context outside school to a school context, with other aims and other content than outside school.

Learning at school is further seen as situated in a context of overlapping cultures, related to influences from above in the form of politicians and policymakers from the outside, i.e. from society and from below from the pupils (Dale et al., 2004). Influences from above are, by nature, normative and include anything from school cultures, subject cultures and national curricula to various different global factors. Influences emanating from below include young people’s cultures outside school and young people’s experiences of learning in informal contexts (Facer et al., 2003; Elmfeldt & Erixon, 2007; Ziehe 1994). For this reason, tensions easily develop between formal and informal teaching (Olsson, 2007).

New and old media will interact with one another in different forms, the so-called “convergence paradigm” (Jenkins, 2008). It functions as a uniting force but is always in a dynamic relationship to change. Since a medium is both a technology and a social practice, a media shift can never ignore the cultural dimension. Media convergence changes the relationship among existing technologies, lines of business, markets, genres and consumers, but also between schools and society as it is governed both from above and from below, by consumers. According to Jenkins (2008), convergence encourages participation and collective intelligence. He claims that instead of talking about personal media we ought to talk about shared media.

The point of departure of this article is the school subjects of Art, Music and Mother tongue, which like other school subjects are feeling the influence of a digital media and screen culture to an ever increasing degree, and it queries whether and how teachers and pupils in the three school subjects conceive of and relate to the shifts that take place in the respective school subject when digital media are being more and more integrated into the teaching.

Method

This article is based on interviews with subject teachers and pupils in the 9th form of primary and lower secondary schools in the subjects of Art, Music and Mother tongue and constitutes an introductory study for a large research project called “School subject paradigms and teaching practice in the screen culture” [“Skolämnesparadigm och undervisningspraktik i skärmkulturen”]¹. For our study we selected a group of school and

¹ The project is funded by the Swedish Research Council 2010-2012.

teaching groups with similar preconditions for studying whether and if so how the different environments displayed subject-based similarities and differences in the view and implementation of digital media.

The research approach is ethnographic (Hammersly & Atkinson, 1995). The data collection was undertaken in its natural context and the research process was as open as possible. Interviews were conducted both individually and in so-called focus groups, which is a well-tried qualitative investigation method for studying, among other things, conceptions of, attitudes to and valuations of e.g. different aspects of teaching (Wibeck, 2000). It is a method that in a limited time can yield a great deal of information in an area of current interest (Morgan, 1997). In the group talks the teachers are influenced by the social interaction (Bloor, Frankland, Thomas & Robson, 2001). In an individual interview situation the researcher has greater control of the situation. In focus talks this control decreases as at the same time the informants are forced "to explain themselves to the interviewer so that the elaboration of initial statements often occurs with relatively little input from the interviewer" (Morgan, 1998, p. 11). Wibeck (2000) points out a risk that may exist in focus talks, namely a kind of group thinking, i.e. that there are norms for what is permitted to be said or not in a certain group. In this investigation it is precisely the group thinking in a subject that is the object of interest.

The talks focused on a number of themes concerning the school subject's relationship to digital media and how the interviewed teachers and pupils thought that these media affected the content and teaching practice in the respective subject. The interviews started with the teachers and pupils being asked to draw a circle that was supposed to represent the school subject in question. They were then given the task of dividing the circle into the parts that, based on their own experiences, they thought constituted the chief parts of the respective subject. This picture then served as the point of departure of the interview.

The interviews with Art teachers and pupils in Art were implemented on two occasions in a school we chose to call the A-school. It is a lower secondary school with five parallel classes. The school where the interviews with Music teachers and pupils in Music were conducted, the M-school, has a profile specialising in music. Two Music teachers in a focus group and six pupils, three girls and three boys, participated in two gender-mixed focus groups. In the subject of Mother tongue (Swedish) at the S-school, one teacher and one male pupil in 9th form were interviewed.

Each interview lasted about 30-50 minutes. We regard the processing of the interviews as transformations of the documentation in several steps (Wolcott, 1994). From having initially been speech registered as sound on a voice recorder, the speech has become text in a literal sense, a text event in a research project. Already at this moment a transformation has taken place since all significant paralinguistic and extra linguistic signs of importance for the face-to-face meeting have been reduced. The first transformation is thus from speech to writing. During this work it became necessary to bring order to the material by means of the word

processing programme's function for line division (Ely, 1991). The second transformation was based on the most fundamental function of the word processing programme: to be able to rapidly copy, cut and glue. This transformation was based on analytic themes resulting from the processing of the first transformation. The aim was thus to generate themes in relation to the questions asked in the interview guide. The text material resulting from the second transformation consisted of a number of quotations from different interviews grouped under the respective theme with reference to the page and line number. In the third transformation transcripts were read with pen in hand in an attempt to create specifying analytic categories. In this connection, the word processing programme's table function was used to be able to create a graphically precise arrangement of the respective teacher's statements within the themes generated in the second transformation. In this way individual statements about intentions of the teaching could be placed in a direct graphic relation to the different events or examples the teachers referred to in the interviews.

The study

In this article we have chosen to account for four different analytical categories that were crystallised in the various stages of the transformation process, namely: (1) attitudes to digital media in educational environment (2) what teachers and pupils regard as the sacred and the profane; (3) motives for using digital media in the teaching; and (4) whether and how working methods are changing with digital technology, i.e. questions concerning collective and individual aspects.

(1) Attitudes to digital media in educational environments

Teachers' and pupils' attitudes to the digital media are accounted for here for each subject together with their descriptions of the learning environments, i.e. the organisation of the teaching, methods, activities and competencies. This is related to the occurrence and educational use of the traditional and new technologies.

In the A-school Art teacher Birgit expresses great interest in and knowledge of digital image processing. At a previous school she urged on digital work in the medium of art and is now using these experiences in order to develop the teaching of Art with more elements of digital media in her new place of work. As part of this work she has applied for and been given resources for new computers, a printer, a projector, a couple of digital drawing tablet boards and two digital cameras for the Art room. The equipment is, however, chiefly used in optional subjects connected to Art, which are taught in a small group, i.e. formally outside the school subject of Art, where a course in Photoshop was also given to interested pupils a couple of times in the spring of 2010:

All pictures taken with cameras must be post-treated. Therefore we have Photoshop, among other things, which is also good because it provides a transition to upper secondary school. The scanner is also used for putting in pictures. I think that right now I have enough computers.

Birgit thinks that in this way she is also setting her mark on the teaching of the subject of Art at her new school. She wants to gradually increase the presence of digital media. The computers in the subject of Art are at present chiefly used as search engines for texts and pictures in the teaching, but in the long run she hopes they will also be used for practical image production.

In her opinion, an Art teacher must also be familiar with and able to follow a pupil's digitally produced work, e.g. by being competent in connection with an assessment to trace the different steps in the form of the saved layers preceding the finished picture. The pupils do not always perceive that digital images require the same skills as a picture traditionally produced with paper, paint and pencil, according to Birgit.

The pupils in Art describe the digital photography course they take part in once a week and that partially takes place in the school's computer room. The activities are conducted within the pupil's optional choice and are voluntary. On these occasions, they can also choose to do further work with a theme from the ordinary teaching of Art. At the school a recently completed local art project provided opportunities to work digitally, which was optional, however. The pupils thought that it was chiefly outside the ordinary subject of art that digital media were used in the teaching and then as part of a pupil's optional choice and without marks.

In the M-school's music room there was a computer, but no video projector. There was yet another computer in the teachers' office. In the music room the computer is connected to the Internet and is employed to search for tunes, lyrics and chords that are used in the teaching. The computer in the office is chiefly used for administrating the Music teaching, that is, for reporting attendance, copying lyrics and information sheets, putting information up on the school's web page etc. The lack of computers is a constantly recurring theme according to the two Music teachers, Mats and Marvin:

We use the computers very little, practically not at all. We download lyrics and listen to music (Mats).

Copy and learn a little, tabs too, such as information sheets and now we have obtained them and we must become better in some way (Marvin).

Despite the lack of digital technology the teachers have visions and plans for how to be able to use digital media in their teaching, if they are given opportunities for this. In their opinion, the great advantage is that the teaching could then be individualised to a higher degree.

The by far most used digital medium the pupils use in connection with music is the mobile phone. The pupils download music from the Internet, often at home, and then spread the music via social media to their friends. This is so common that neither pupils nor teachers think about it.

Examples of activities conducted in the school subject of Mother tongue include, among other things, what the teacher Siv calls the reading of “short stories”, “classics” and “novelettes”. In the teaching of writing they write “short stories” and in this connection read blogs for the classics, which are often accounted for orally. The teaching of both writing and reading is therefore most often organised by means of paper, pencils and the blackboard, according to the teacher, who admits that she lacks competence as regards new digital technology. Together with her colleagues in the subject of Mother tongue, Siv is however prepared to develop her teaching with the aid of new technology to a greater extent than is now the case. She complains that she has no access to new technology but acknowledges that the school management is attempting in various ways to make new technology more available, e.g. by providing all teachers with a laptop of their own. In connection with the forthcoming rebuilding of the school, the school management has also promised that the classrooms will be equipped with new digital technology.

The pupil Sven expresses a generally positive attitude to using digital technologies in the teaching of Mother tongue. But it is an attitude that includes the conviction that the older technology, i.e. the paper, pencil and book, also has a place in the teaching of Mother tongue. He is in no way impatient with regard to the limited use of new digital technology and does not demand that it should be used to a greater extent. He describes an oral project they carried out about a year ago in which the preparations, for example, included taking down lecture notes by hand, but otherwise he thinks that writing on a computer has great advantages:

You write short sentences, main points, and you train, like. It's sort of equally easy to write on paper. So there isn't such a big difference.

Sven seems to accept this condition and does not really expect that it should be any different.

A more comprehensive picture shows that the teachers in the different subjects are interested in using digital technology in their teaching to a greater extent than is the case today. However, the problem is the lack of both technology and competence. The Art teacher has increased her use of digital technology in her teaching, but chiefly in small groups within the framework of a pupil's optional choice. The pupils in Art also experience that digital media are used primarily in work outside ordinary Art lessons and in their leisure time. In the subject of Art developments take place outside the framework of the traditional subject of Art, while digital technology in the form of musical instruments and musical equipment has had a given place in the subject of Music for a long time. The computer is chiefly used for finding material and models for one's own. The pupils use a form of digital technology that is seldom paid attention to in an educational context, namely the mobile phone. In the subject of Mother tongue it is above all in writing activities that digital technology is used, while reading is intimately associated with the old technology in the form of a book, i.e. codex. It is commonly assumed that it is the pupils who urge on and

demand more digital technology in teaching. Sven's somewhat indolent attitude to the issue sets such a notion rocking (Facer et al., 2003; Kress & van Leeuwen, 2001; Elmfeldt & Erixon, 2007).

(2) The sacred and the profane

Although the Art teacher Birgit has worked for many years with developing new technology in the subject of Art, she thinks that different forms of traditional image creation still take up half the teaching time in the subject. She argues that the subject has little time and that it is important to utilise pupils' chances of developing their artwork through image creation of their own, which in its context she regards as the sacred in the subject of Art. Birgit describes her subject as primarily communicative and thinks that this also implies it is important that the subject pays attention to what is happening in society at large. The other half is spent on analysis, theory and reflection. Work with different tools for creating pictures is placed in a special sector, comprising about one-fifth of the time for the subject of Art. This includes digital technology, but also other possible aids and knowledge of handling different tools for artwork.

For some pupils the most important content in the teaching of Art is in the subject conception where Art is seen as an aesthetic-practical subject. The pupils tend to divide the subject into techniques, where "Watercolour" and "Still life and drawing" are each considered to make up 30 percent of the time in the subject. "Charcoal drawing" is considered to comprise 20 percent and the rest of the time, namely 20 percent, is shared by "Expressionism", "Surrealism" and "Ceramics". Another group of pupils regard the subject more as a creative process comprising a number of phases, i.e. not primarily as an aesthetic-practical subject consisting of handling techniques and materials.

For the two Music teachers the sacred in the subject of music consists of playing music together. They think that in this way both co-operation and personal expression develop. The physical playing together, which chiefly takes place in rock and pop ensembles, is regarded as important and gives the pupils opportunities for musical experiences. One of the music teachers describes this in the following way:

Emotional experiences of what we had put together, the groove, made me challenge myself a little bit more and so on. And that's really what we try to achieve through ensemble playing, through individual tasks and all that. Providing tools for achieving an experience that makes them go on wanting to develop themselves.

Besides developing the playing individually and in groups the teachers regard it as important task to widen the pupils' horizons. This implies that the pupils both broaden their repertoire and develop an understanding of music from other genres than those they are used to. In this context, the teachers emphasise that is not a question of taking away any pupil's personal favourite style but of opening up to other and new styles. The basic idea is that the more styles and techniques the pupils know and master, the better they will be at expressing

themselves musically, which is the overall goal of the teaching of Music. The teachers can see advantages of increasing the use of digital media, but also that it may challenge the sacred, the playing together in ensembles.

The pupils also believe that a great deal of the teaching of Music is based on playing in pop and rock ensembles. They can suggest tunes themselves that serve as material for the ordinary teaching. The pupils emphasise the importance of developing their personality, their identity and of being authentic. One of the pupils thinks that when recording by means of digital media it is easy to correct something without having to replay the whole tune. In his opinion, this is not entirely positive but also involves a risk.

It's up to you because you can record as you did before, you know. You don't have to edit and use these digital media. So for the most part I think it's better. But sometimes it's like it isn't equally authentic in some way /.../ and the sound becomes flat.

The issue of authenticity is important and arises when there are great possibilities to manipulate music in digital media. It seems as if the experience and the interpretation, authenticity, are a hub that music circles round. The pupils think that if digital media are used incautiously, the "feeling" in the music may disappear.

When the teacher of Mother tongue Siv reflects on what the sacred in the subject is from her point of view, she says at first:

Well, being able to master different forms of reading, skimming and so on, being able to narrate in writing, knowing how to make oneself in different ways, if one wants to write a letter or a short story or some information, these skills.

Then, she says, it is not a matter of "losing everything" but of having a "sound attitude" to these new things. Initially at least, she seems to think that most of the content that exists today will remain when digital media are used, but in new packaging.

However, her reasoning ends by stating that everything might not have to remain, e.g. the items of language history. The pupils can learn these items e.g. in upper secondary school. It is the skills that are the most important parts of the subject of Mother tongue, in her view.

Well, I feel that if you are sure you can make an account, you can manage to stand in front of a group and make an account, have a good clear text, feel secure in your work both in writing and orally and have a good voice, then you'll manage and want to narrate, to feel joy, to be curious about the language. If I were to manage all of that, I'd think it was fantastic.

The book or codex as technology represents something "sacred" to Siv, even if she keeps the door open for the reading tablet as a new technology. When Siv especially emphasises the importance of books, it is not reading in general she has in mind. Reading books is to her intimately associated with what she calls "classics" and "short stories" as well as novels, even if she does not mention this. Reading in this context is about quality literature (canon), which only with great difficulties and great financial sacrifices can be replaced with reading tablets.

The pupil Sven also emphasises the importance of books in this context. When asked how new technology can enter into the teaching of reading, he answers:

A very good question – it might not do that at all. I don't know. How would it come in?

He goes on to say that it might partly be a matter of habit and that one could probably learn to read on, for example, a reading tablet. The enthusiasm about such a type of reading is limited and full of reservations:

You get a headache after a while. It's nicer to read paper and books, like.

In Sven's opinion it is especially what he calls "talking" that ought to constitute a larger and more important part of the teaching of Mother tongue:

Perhaps a little more talk after all. I think that's the most important part of the subject of Swedish. There are many who become quite different human beings when they are going to talk in front of people. I think that's something we should train more on, in general. Maybe a little less reading.

In summary, the interviews reveal a conception that stresses the older analogue technologies' connection with what is authentic, perhaps most clearly in the school subject of Music, where the collective creation and digital technology have influenced the teaching of the subject in a more radical way. In the subject of Art, it is the artwork which the pupils concretise with techniques such as watercolour, still life and drawing and charcoal drawing, which seems to be the sacred. In the subject of Mother tongue it is books and works of fiction.

It might be claimed that the sacred in the three school subjects of Art, Music and Mother tongue is set rocking if a larger process is taken into consideration. Previously, the subjects embraced a canon of exemplary works and the pupils' proficiency training in attaining command of the medium (Wertsch, 1998:46ff). The teaching of drawing aimed at being able to draw objects in accordance with a pre-modernist canon, the teaching of Music aimed at knowledge of the great classical masters and a national treasure of songs, while the teaching of Mother tongue aimed at correct language use and knowledge of a national literary canon.

Shifts in the view of the sacred appear in the subject of Art where pupils' creativity is stressed as increasingly important; in the subject of Music it is playing music together that is the most important element, and in Mother tongue pupils' activities in connection with their use of digital media are emphasised. If the sacred used to be a powerful and well-defined core of knowledge and skills that schools aimed at reproducing in their pupils, and the profane was pupils' participation, the sacred in the subjects is being increasingly challenged by pupil-oriented working methods. Some of the traditional subject knowledge and skills have thereby become more profane and even something one might do without. For this reason, appropriation is also an important strategy. Pupils are expected to use the medium in order to make it their own (Wertsch 1998:53ff). In the subject of Music this process has

been fully implemented in the studied school. In the subject of Art the pupils' own creativity is the central activity, and in Mother tongue the process has been initiated, e.g. when it is considered that the history of language could be removed from the subject and when more media are bought into the subject.

(3) Motives for using digital media in the teaching

The Art teacher Birgit noticed early on that the marking levels in the subject of Art were low, in particular concerning the boys. In an attempt to find possible ways of improving the situation, she applied for money in order to bring about an investment in computers in the teaching of Art, especially for the purpose of improving the boys' opportunities to take an interest in the subject of Art. The argument is that this might also favour the teaching as a whole. A certain breadth is, however, required to gain a high mark in the subject of Art:

To attain a Pass with Distinction you can work only digitally, but for a Pass with Special Distinction more and varied techniques are required – and the pupils are fairly aware of that. On the other hand, you can attain a Pass with Special Distinction without using digital media because there are so many things that can be shown anyway.

The Art teacher thinks that it requires a high level of competence to judge digitally produced pictures correctly:

It's a little more difficult to give a Pass with Special Distinction on a computer because you must be a skilled teacher in Photoshop and these programmes /.../ and Art teachers generally don't have that knowledge.

The Art teacher thinks that at the moment there is enough equipment but a lack of time in small groups to be able to work digitally to the extent that would be desirable. One problem consists of the short 50-minute lessons, which make it difficult to manage. Half classes are therefore desired.

The pupils think that Art and digital media function very well together, except when sketching and doing three-dimensional works. The teacher has sometimes used digital presentations in whole-class instructions. In their opinion digital media are gradually becoming more clearly positioned as part of the regular teaching of Art, even if they are not used consistently. The young people also use digital media for both production and presentation in various social media. Yet, in their view, this knowledge is seldom utilised or put into practice within the framework of Art teaching.

The Music teachers see clear advantages of digital technology. Via the Internet there is a nearly inexhaustible supply of musical sounds, chord analyses, tablature and lyrics. In addition, there are many "music schools" and music videos showing how to play tunes and solos on different instruments. This enables pupils to learn at their own pace and offers different degrees of difficulty depending on the pupil's previous knowledge. This implies that the teaching of Music is being individualised to an ever-increasing extent. One of the Music teachers elaborates on this:

I have pupils wanting to learn a special tune. I was in a bit of a hurry and checked on YouTube. Then I found a guy who had an acoustic guitar. It was filmed very close and showed the exact fingering very slowly. The next day the pupil had learned the tune. So that's great. And nearly all tunes are there.

The challenge is that time is taken away from the teaching of Music, i.e. that the teachers must learn more about digital media and the equipment for using them; the technology "plays tricks" and it takes time to get help. It is time-consuming to film instruction videos and put them on the school's homepage. It is especially in the teaching of writing that the teacher of Mother tongue Siv sees possibilities for using the new technology and the new opportunities it provides. It is then a matter of blogging, writing, publishing and above all seeking information. Referring to one of the student teachers who blogs together with the pupils about what they read, she mentions blogging as a way of developing the subject. According to Siv, the aim is to enhance "the interest in reading".

Many probably read quite a lot during these middle primary years, but then when they are getting older they abandon books if they are not very interested. To be able to succeed in some way – so that books are not regarded as goofy.

Siv believes there are, however, different ways of narrating since both pictures and sounds can be used. She mentions a colleague who works with pictures and texts in combination. The method is to let the pupils write texts for pictures. She likes this very much and has herself tried to develop variants of it since her pupils have worked quite a lot with films. Siv mentions in particular pupils who are not so good at writing but have "a lot of narrating in them". By being allowed to use pictures at school and other methods and techniques, they may think that the education is more meaningful and manage to complete their assignments.

I've now got a pupil whom I'm thinking especially of who has some difficulty expressing herself both orally and in writing, but is very good via pictures. That pupil got no mark at the end of the autumn semester. But when we worked a lot with pictures and films she handed in a work worth a Pass with Distinction.

There are thus different possibilities as regards completing a story within the frameworks of the teaching of Mother tongue. But it creates special problems as regards judging and marking the work. This is connected to the fact that it is becoming more difficult to determine who has done what if the pupils work with pictures and films. Siv talks about "the teacher's conscience", i.e. the teacher's ambition to be fair and allow the pupils to complement with a written reflecting text that can "support the totality" and shows who have been active. Without this reflecting text the judgements may be too subjective, according to Siv, who wants further education.

When using the older technology and the traditional way of teaching, the pupils expect a specific answer that the teacher wants, according to Siv. With a different way of working, for

example by means of new technology, there are, in her view, no correct answers in the same way:

Thinking is freer there – there might not be so much performance anxiety and you have your own way of interpreting. This matter of right and wrong – it provides new opportunities for language development that feels very attractive. I think we'll have to work a lot to make the pupils feel that freedom.

This is important for the pupils, according to Siv, who emphasises that young people think differently and that by using new technology one can elicit much more of the pupils' thinking and hence other values in modules such as, for example, writing. This leads to different content in the teaching as the pupils are not primarily exhorted to look for answers that the teacher wants. There are no correct answers, Thinking is freer and there is not so much performance anxiety. The pupil's own interpretation becomes important.

The pupil Sven emphasises how much easier it is to write with a keyboard and computer:

You don't get cramp in your fingers, it's easier, there might be some difficult word you want to check up, you can check the grammar etc.

He also thinks that access to the Internet makes it possible in different writing situations to be able to find facts easily, which makes the text qualitatively better. He mentions a writing task where he looked for and found names of some places in Nepal, which he then used in the text he was writing in order to create a greater feeling of authenticity and hence a better quality of the text, as he saw it. What is convenient feels even more convenient when you can also listen to music at the same time as you write texts on the computer, according to Sven.

In summary, both the Art teacher and the teacher of Mother tongue are of the opinion that the motive for using digital technology might be strongest as regards facilitating weak pupils' learning. It is then a matter of increasing the interest specifically in the subject of Art or the interest in reading, that is to say, of good works of fiction.

Both activities are deeply connected to analogue technology. Yet the new technology creates problems concerning the judgement and to solve this problem the pupils in Mother tongue are asked to write a reflecting text as a complement to the multimodal production. However, there are clear hierarchies in Art, Music and Mother tongue. In Art it is not possible to obtain the highest mark by working only with digital technology. This also applies to the subject of Mother tongue. While digital technology forms the basis of a more collective working method in the subject of Mother tongue, where it may sometimes be difficult to determine who did what, digital technology can be used precisely for individualisation in the more collectively oriented subject of Music. The teacher of Mother tongue in particular thinks that digital technology also provides preconditions for a different kind of learning that aims less at finding the right answers.

(4) The collective – the individual

The activities in the school are individual in the majority of subjects, which means that the pupils solve the tasks the teacher gives individually. According to the Art teacher, the work is chiefly done through the teacher presenting tasks that each pupil solves individually. The teacher emphasises that the central and indispensable element in the subject of Art is that the pupils themselves should produce pictures in an explorative way.

The pupils did not conceive of the work tasks or the implementation as a collective piece of work. They stressed that the tasks were given collectively but performed individually since the teacher gives them a theme to work on. The pupils could then work with their own solutions in a creative way, which provides scope for the pupils' own creativity being regarded as an important part of the subject's core.

In the subject of Music the conditions seem to be different. A characteristic feature of this school's teaching of Music is that the teaching is based on ensemble playing and that the pedagogy partially resembles a rock group's practice in rehearsal rooms, which is not unusual in Music teaching in Sweden (Erixon, 2002; Olsson, 1993; Sheid, 2009; Skolverket, 1998, 2005; Strandberg, 2007). This is clearly shown by the furniture, the number of group rooms, the instrumentation and the interviews with the teachers. As a dominant activity in the teaching of Music, the ensemble playing enables working methods that invite the pupils to co-operate. The content and the form of working are also taken from popular cultures outside the school, whose forms of expression are largely mediated via digital media. Both teachers and pupils emphasise co-operation as being an overall goal not only for the school but also for the ensemble activity in the classroom. In this respect, the music differs from the subject of Art in which tasks are solved more individually and the instructions are given collectively to a greater extent.

The pupils confirm that the basis of the teaching of Music is co-operation and ensemble playing. The members of the groups can vary and it is important to be able to play together with different pupils. The ensemble playing creates a spirit of community that makes them think they have fun in the teaching of Music.

In the subject of Mother tongue the old technology of paper, pencils and books provides the prerequisites for the markedly individual work in the school, work that is hence also easy to judge individually. The conditions are changing with the new technology. Siv mentions that new technology has been used in the teaching, in connection with the pupils working with commercial films. The pupils were in this way given opportunities to look for new forms of mediation and a larger scope for initiatives of their own was created. In this way the activities resemble those of the subject of Music also in that the inspiration for the work may be related to media environments outside the school's walls.

To some extent, digital media seem to transfer the initiative to the student or the pupil. As described above, (Jenkins (2008) thinks that convergence encourages participation and

collective intelligence. He argues that, instead of talking about personal media, we ought to talk about shared media. Digital technology seems to presuppose a more collective working method. But digital technology not only forms the basis of a more collective working method, but also creates difficulties when it comes to determining who did what, i.e. in the judgement. In the more collectively oriented subject of Music it can, on the other hand, be used precisely for individualisation.

But in this connection one must also consider the different school subjects' characters. In its capacity of being a school subject that to a relatively great extent has opened up to digital technology, the activities in the school subject of Music are traditionally based on pupils playing together. It is obvious here that the digital technology partially forms the basis of more individual work. When digital media are used a more collective way of working is made possible in the more traditionally individual subjects of Art and Mother tongue.

Discussion

Based on this and similar studies (Erixon, 2010; Scheid 2009, Strandberg, 2007), it is obvious that older technologies are still dominant in the school subjects of Art, Music and Mother tongue, but also that new digital technology is making inroads in various ways. It must be borne in mind that the use of digital media has developed outside schools and that in school teaching there is an inherent tension between digital and traditional media as well as between ways of judging and examining works at school (OECD, 2001). The introduction of digital and traditional media in an educational context may be seen as a negotiation between different cultures, where the "invading" school culture must redefine its boundaries (Demetriadis et al., 2003).

In this study a pattern appears showing both similarities and differences as regards the three school subjects' relationship to digital technology. Based on the four themes that were crystallised, we find: (1) that the teachers in all three subjects want to use digital media to a greater extent than is currently the case, and that they therefore can see a need for competence development; (2) that the older analogue technology is often regarded as more authentic and hence attributed a higher value; (3) that digital media are often considered to favour less motivated pupils; and finally (4) that digital media seem to favour collective work more than individual work in a teaching context.

At the same time, differences appear concerning the extent to which digital media are used in the teaching in the three school subjects. For this reason, the incorporation of new digital technology in a teaching context also varies and has reached different stages in different school subjects, which was an important point of departure for the whole of our study. Among the three school subjects discussed here, the breakthrough of new technology has evidently reached furthest in the subject of Music where the pupils in the main fetch their teaching material from the Internet and the music of the youth culture governs the content of the teaching. No canons or favourites exist. The teaching opens up to new music styles; to

express oneself musically is the superordinate ideal. In the subject of Art the teacher expresses great ambitions which are mainly materialised on the side of the ordinary activities in the subject of Art. The art teacher talks about investing more in new technology and opening up to society. As regards the subject of Swedish, the ambitions to develop the use of digital technology seem to be great, but the resources are extremely limited. The mother tongue teacher expresses clear ambitions, for example, to work with blogs in the teaching of writing when in a year or two all pupils have their own computers. She visualises how the pupils publish themselves on the Internet, write multimodal stories and search for information via the Internet.

From the development that has seemingly reached furthest in the school subject of Music and then to a varying extent in the other school subjects, we can also draw some general conclusions about what happens when new digital technology enters the teaching and facilitates information searches on the Internet, publishing in blogs, multimodal productions etc., i.e. typical Web 2.0 tools. By using new technology one can elicit much more of the pupils' thinking and hence other values in modules such as, for example, writing. This leads to different content in the teaching as the pupils are not primarily exhorted to look for answers that the teacher wants. There are no correct answers. The pupil's own interpretation becomes important. This means that the selection of knowledge is an issue that will be accentuated with new technologies or digital media and, negotiations between different cultures and a redefining of traditional boundaries are more evident than before.

Kraidy (2002) thinks that interactive media transfer the responsibility for taking initiatives in the educational discourse to the students or pupils, which is close to Jenkins's (2008) opinion that convergence encourages participation and collective intelligence. Jenkins (2008) argues that, instead of talking about personal media, we ought to talk about shared media. But conditions differ among the different subjects. A more collective subject such as Music seems to be moving to some extent in a more individual direction, while the traditionally individual subjects of Art and Mother tongue are moving towards more collective forms of work when digital technology is used in the teaching.

From a media ecological perspective, the use of digital media in the school teaching contributes to what are here called older technologies also gaining a new meaning. When e.g. reading a book or writing by hand meet new technology in the form of digital screens and keyboards, the writing and reading in the educational discourse will be separated from the rite of writing and reading at school, in analogy to Benjamin's (1968) analysis of the liberation of art from the rite in the age of mechanical reproduction. They become in a corresponding way activities detached from their natural context and something that, figuratively speaking, one frames or makes culture of. The Music pupils' reasoning about authenticity, which is associated with what is analogue and more original, may be regarded as an example of this. What Benjamin (1968) says here about art could well be a quotation from one of the Music pupils:

.../ the unique value of the “authentic” work of art has its basis in ritual, the location of its original use value (224).

This means that we must also take into consideration that the older technologies remaining in the educational discourse are changing their meaning in a new and digitally media ecological context. Whether the energy in the development towards the increasingly frequent use of digital media that we can foresee will come from the pupils or from other actors is a question we will have occasion to return to in our study.

Digital media give the teaching partially new values and knowledge based on a different epistemology or, as Hargreaves (1998) puts it, give the pupils increased awareness of the relative nature of truth. Digital media can thus be used to generate an “intrinsic model” (Savage, 2007, p. 145), i.e. something qualitatively new by adapting the teaching more to an “invading culture” and to pupils’ multiple contexts and learning outside school. Digital technology implies that forms of knowledge and communication have changed (Dyndahl, 2004). It also provides preconditions for a different kind of learning, which is less aimed at finding the right answers. In this way, the field of schools’ recontextualisation is broken down.

The recontextualised (Bernstein, 1996) activities of schools have traditionally had difficulty in reaching outside the schools’ walls. However, in many respects digital media provide possibilities for widening the educational discourse, according to Burnard (2007). This may be described as a widening of space or, in Hargreaves’ (1998) words, a compression of time and space, through the available opportunities e.g. to publish texts, pictures and sound files digitally. Digital technology in a teaching context not only makes it possible, but also seems to create preconditions to move outside schools’ recontextualisation field as well as time and space. This implies that the school’s internal activities expand and become directed towards the external society in the form of e.g. concerts, art exhibitions or texts that are sent to friends or adults outside school and school time. A widening of space implies that the boundaries of schools’ recontextualisation field are being challenged and crossed. Digital technology can also contribute to a widening of time in the sense that new technology can automate activities, which makes time available for some other content and leisure time.

But it is not primarily this opening of the school to society that the new technology enables to a greater extent than might have previously been the case, but the negotiations of the teaching content that thereby arise as a consequence. The opening up towards the information that is available on the Internet has epistemological implications. In schools governed by traditional analogue teaching materials, the knowledge is sanctioned and given, based on an idea that knowledge has a kind of objective external realisation. When different perspectives appear, the boundaries between what we regard as knowledge, values and opinions become more fluid. This is a view of knowledge as constructed and socially anchored in different social groups, i.e. a kind of relativisation and hence also a new

epistemology. The negotiation of content is the overarching issue, not the relationship to the external context as such.

In conclusion, we therefore think that, based on our limited study, there are clear signs that digital media have already started to influence both the teaching content and working methods in the three school subjects, even if the developments vary and have reached different stages, and that the subjects are hence facing a paradigm shift, but that the process is too slow to be clearly visible in this limited study.

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