Young People's Information-seeking in School - A Breeding Ground for Digital Inequality?

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English abstract

This article describes and discusses the digital and information skills of Swedish youth in relation to educational goals and e-society participation, following pioneering research done by van Dijk, Buckingham, and Enochsson on this subject. By the findings from a questionnaire and interviews, a diversified picture of information skills and attitudes toward being a part of the e-society emerge — a picture that supports the idea that the school could contribute to the establishment of digital inequalities among the students.

Keywords: Digital skills, information-seeking, digital inequality.

Introduction

The so-called digital generation is surrounded by myths, conceptions and assumptions (e.g., Bennett, Maton & Kervin, 2008; Buckingham, 2006; Jones, Ramanau, Cross & Healing, 2010; Kennedy, Judd, Churchward, Gray & Krause, 2008). Regardless of the characteristics that are attributed to the digital generation, the young people of today have grown up under different conditions and frames of interpretation than previous generations. Early ideas about computers as teaching machines have been superseded by the idea of digital technology as a source of information and communication (Hernwall, 1998), and the use of the Internet for information-seeking is one of the most common ICT activities in Swedish schools (Swedish National Agency for Education, 2010). However, Zimic (2010) describes a large variation in Internet use among Swedish youth and fears that some youngsters will be left behind if the educational system does not meet their interests in acquiring digital skills.

At the same time, a critique of the narrow focus on skills and the lack of focus on broader critical digital literacy is expressed by Nordic researchers. They ask for an ICT education that puts greater importance on the development of a critical consciousness among pupils as well as teachers, and they call for an understanding of the connection between technology development and society development (e.g., Beck & Jamissen, 2011; Beck & Øgrim, 2009). This is an important remark, but even Beck and Øgrim note that one goal of incorporating ICT education into schools is to make sure that the pupils become confident users of the technology. It has also been a governmental ambition in Sweden since the 1990s to create an information society for everyone, focusing on "trust in information technology … [and] skills to use information technology" (Prop. 1999/2000:86, p. 1).

Erstad (2010) emphasises that it is a challenge for researchers to comprehend what counts as important skills and what role schools may play in an information society. This paper makes a contribution to this debate by studying information-seeking skills as both an example and a result of digital stratification among Swedish youth.

Digital skills

The majority of ICT use in Swedish compulsory and upper secondary schools is about information-seeking and writing (Swedish National Agency for Education, 2010). This study focuses specifically on digital information-seeking and the basic skills needed for this. There is research that implies that information-seeking in schools mostly focuses on basic "procedural matters" (Limberg & Folkesson, 2006, p. 9), and basic digital skills constitute the foundation for higher abilities such as critical awareness. Beck and Jamissen (2011) argue that "in many countries there has been an interesting and promising shift of focus for educating teachers in ICT, from a skills-based approach to an approach with a broader understanding of competence as resembling *capability*" (p. 32), but at the same time, they conclude that there are few approaches to developing ICT usage in schools that address aspects such as this. In the Swedish context, most of the governmental efforts regarding teachers and ICT education still focus on operational skills.

Basic *operational skills* could be defined as the ability to start a computer, use a web browser and sort out information (cf. Erstad, 2010). These skills are prerequisites for the development of further digital skills. Irrespective of learning environment and context, frequent Internet use, as well as actual practice in information-seeking, builds a solid ground for digital self-confidence and higher

abilities (Enochsson, 2005, 2007; van Dijk, 2005). Based on van Dijk's (2005) classification, I define these higher abilities as *information skills* and *strategic skills*.

The crucial points in *information skills* are the ability to understand, select, edit, evaluate, combine, derive and generalise information (van Dijk, 2005). According to Enochsson (2007), frequent use with thoughtful support in the background facilitates critical use of the Internet. Nevertheless, something as simple as time could be significant for the opportunity to develop information skills. A lack of basic skills and self-confidence could imply that the information-seeking itself takes all the accessible time and that critical scrutiny has to stand back. Although the youth in Enochsson's study understood the importance of a sceptical attitude, it was not obvious they spent time on critical scrutiny. Enochsson also found that "pupils that spent *very* little time on the Internet, i.e., just the time the teacher made sure they sat there, but who otherwise were seen as reflecting and questioning by the teacher, did not show any reflection about the reliability of the Internet at all" (2007, p. 4). There are teachers who believe that evaluation skills are closely connected to personal maturity and characteristics; consequently, these teachers found it meaningless to teach critical evaluation (Limberg & Folkesson, 2006).

A crucial point with *strategic skills* is the ability to use the Internet to reach particular goals, which is not something that could be developed through education in formal settings (van Dijk, 2005). The goals are based on one's own desire and "they are incorporated into the daily practice of education, work and leisure time" (van Dijk, 2005, p. 89). Social and cultural capital (cf. Bourdieu, 1984) plays an important role in one's ability to set relevant goals that lead to higher positions. The ability to set relevant goals could also facilitate the seeking process and prevent aimless, time-consuming surfing (Enochsson, 2005). Social and cultural capital, combined with formal and informal experiences, are important parts of a person's capacity to develop information skills and strategic skills (e.g., Buckingham, 2007; van Dijk, 2005; Warschauer, 2003). van Dijk emphasises that the level of inequality seems to increase from operational to information and finally to strategic skills, which is a crucial point of *digital stratification*.

Digital stratification

Digital stratification is related to theories on social stratification, and stratification in a society is not only dependent on people's action scope but also on the fact that "different people [do] not *see* the same choices" (Edling & Liljeros, 2010, p. 23). In Sweden, there is high access to ICT among the vast majority of the population, but there is digital stratification related to socio-economic factors and it appears as variations in the way that ICT is used (Statistics Sweden, 2011). It is well known that social background affects the use of ICT among young people (e.g., Buckingham, 2007; Tsatsou, Pruulmann-Vengerfeldt & Murru, 2009), and Buckingham stresses that it is probably "the 'usual suspects', who are already privileged in other areas of their lives" (p. 93) that constitute the minority of young people using ICT "for social, educational and creative purposes" (p. 93).

According to Warschauer, school practices could serve to increase rather than decrease digital stratification if they do not support a more reflective and advanced use of ICT to widen the action scope that pupils see. The school could "...prepare scholars [... or] prepare people for the workforce" (Warschauer, 2003, p. 132) with ICT in ways that challenge thinking on a higher level or just using it as a tool for reproduction. Young people often experience ICT education in school as "over-descriptive" and far from "authentic practice" (Facer, Furlong, Furlong & Sutherland, 2003, p. 205), and school use tends to be extremely restricted and surrounded by regulations (Buckingham, 2007).

However, according to van Dijk (2005), young people learn most of their digital skills by a do-it-yourself approach and from people who are close to them. This reinforces the impact of the learners' social and cultural capital, already well known success factors in education (e.g., Desforges & Abouchaar, 2003; Nygren, 2007).

Aim

This paper makes a contribution to the debate about important digital skills and the role of the school in the information society. The aim of this article is to describe and analyse information-seeking skills in relation to digital stratification among a group of young Swedes born in 1994 through a mixed method longitudinal study. The contributions of the present article to prior research are empirical descriptions of (1) young people's experience of ICT education in school, specifically in information-seeking, (2) differences in information-seeking skills and (3) the interaction between skills, attitudes and education in relation to digital stratification.

Method

This study draws on data from a quantitative survey study and qualitative interviews. The data has been collected in two steps, first by a questionnaire in 2007 and then by interviews in 2010. In the first study, the research population consisted of young people born in 1994, living in the same medium-sized Swedish municipality and attending their seventh year in the municipality's two compulsory schools.

In December 2007, when the informants were 13 years old, I visited the compulsory schools to carry out the first data collection. 259 pupils answered the questionnaire—129 boys and 130 girls—and they represented 93.8 per cent of the entire research population. The questionnaire was rather comprehensive and consisted of 125 items divided into six different areas. Five of the areas, ICT access, ICT knowledge, ICT attitudes, school, learning, and social attitudes, were described and analysed in a previous article (Samuelsson, 2010). In this article, the focus is on information-seeking, the sixth area. The questionnaire consisted mainly of highly structured questions with fixed response alternatives, and as a result, primarily provided information on operational skills and information skills. The participants in the questionnaire study were assured of confidentiality in both written and verbal information. Confidentiality in this case meant that their questionnaires would be coded, but that no one besides the author would be able to connect their code with their name. The coding of the questionnaires made it possible to identify informants for the forthcoming interviews.

In 2010 and 2011, five boys and seven girls were interviewed. Initially, the sample was based on different user groups from the questionnaire study (cf. Samuelsson, 2010), but this idea had to be abandoned due to a lack of interest to participate. In the final group, seven informants came from the original population and the others came from compulsory schools in other municipalities. The interviews were semi-structured and conducted in the informants' homes or at upper secondary school. At the time of the interviews, students had just finished compulsory school or were in their first year of upper secondary school. An unplanned but positive circumstance occurred during the last nine interviews. The informants had started their first year at the municipal upper secondary school and became the first graders to receive a personal laptop. During the interview, the informants from the original population were presented with their answers from the original questionnaire, and the other informants were asked to describe their past use of ICT.

Table 1. Informants in the interview study and their educational programme at upper secondary school

	Preparatory Programme	**Vocational Programme**	**Combined Programme***
Male	Peter	Adrian Hans John**	Mikael**
Female	Lisa Helene**	Julia Moa	Agnes Jenny** Nelly**

*Prepare for a job directly on graduation but by studying extra courses it could work as a preparatory programme.
**Informants that did not participate in the questionnaire study.

Analysis

To analyse the survey study, PASW Statistics 18 has been used to obtain descriptive statistics. The responses about ICT knowledge and attitudes were based on a semantic differential scale from 1 to 9. Inference statistics have not been calculated because the data consist of population data, not a randomised sample.

The interviews are part of a larger study, and the questions, as well as the analysis, are based on issues raised from the survey and previous research. The interviews are used to obtain a deeper picture of the young people's information-seeking skills, their actual use of ICT, and the progress made regarding the use of ICT since the first data collection. As a start, the material has been coded into two categories relevant for this analysis: information-seeking and background factors. A deductive thematic qualitative analysis (Langemar, 2008) was first made. The "themes come from the characteristics of the phenomenon being studied; from already agreed on professional definitions found in literature reviews" (Ryan & Bernard, 2003, p. 88), and in this case *operational* and *information skills* serve as predefined themes. *Operational skills* were measured by self-assessments in the questionnaire and were followed up in the interviews by questions about how computers have been used since the first data collection. To enable analysis of the crucial points in *information skills*, the informants were asked in the interviews to describe how they search for information using the Internet and how they scrutinise their search results. The last part of the analysis had a more inductive procedure and was based on differences and similarities in the youth's attitude and approach towards ICT and education. This analysis should be seen as a first step in the analysis of *strategic skills*.

In the results, interview data will refer to *informants* when the entire group of interviewees are represented or to the *pseudonym* given when the data are about an individual interviewee.

Results

Operational skills

The questionnaire gives a picture of skilled Internet users. According to the self-assessment, the entire population describes themselves as better at information-seeking than at word processing or the use of spreadsheets (Figure 1). They also describe themselves as more skilled at information-seeking than at computer-based game playing. There is almost no difference between boys and girls in the assessment of information-seeking skills in contrast to the assessment of word processing and game playing.

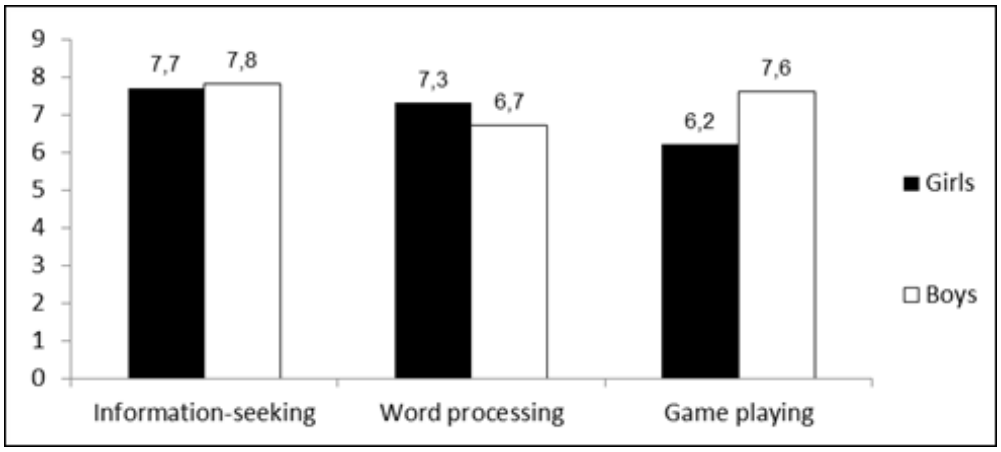

Figure 1. Mean value in self-assessment (1-9) of different operational ICT skills. N=259.

It becomes clear in the interviews that skills were assessed based on subjective views of the skills that the youth thought they needed, not on formal requirements or educational demands. ICT education at the compulsory schools was organised as computer classes. After the classes, they were supposed to have acquired skills in writing, presentation and information-seeking, but these skills were not necessarily used or followed up on. Most of the ICT use outside of the computer classes was out of the students' own volition: "*it was optional if you wanted to use the computer or if you wanted to write by hand*" (Helene).

Some of the informants express astonishment over their questionnaire answers; they do not think they were as skilled as they said in their rankings, especially not in word processing. Moa, who was interviewed when she had started upper secondary school, says, for example *"… but now, when you have that kind of real computer class [Computing A], you notice that you have missed very, very much. There are a lot of things you have to go through […] with Words and so on that you didn't know you could do before"*. This is a commonly held view of the compulsory course Computing A; it leads to the development of skills on a level that few of the informants would have managed to reach on their own.

The informants describe ICT use in compulsory school that had to be planned in advance because most of the computers were placed in computer labs. It makes a big difference to have a laptop of your own, as in upper secondary school:

Jenny:	If you compare with compulsory school, then it was so difficult when you… should write essays and so on for the lessons, and there were only like 15 computers. Then you didn't really know what to do when none was unoccupied. So it's much easier to start to work and so on, when you actually can start at once.

The two compulsory schools in the research municipality had restrictions and limitations that prohibited private use of the computers. However, as a previous part of this study has shown (Samuelsson, 2010), those who were interested in private use during school managed to play games and use social media anyway. Martina notes that the "*game crazy*" boys were always first in line to the computers during compulsory school. Supervision by a teacher was not a problem at all: "*… when they [schoolmates] sit in class and the teacher is not looking they check Facebook or Bilddagboken*[1]*"*, and

according to Lisa, there were teachers who did not care, even if they saw it. This is something that has continued in upper secondary school, and the laptops seem to motivate non-school related use during both lessons and breaks.

Since the informants received laptops in upper secondary school, use of the Internet for information-seeking purposes has increased. For some of the informants, such as Hans, it has also meant that most school-related research is done during lessons, and less is done at home.

It could be concluded that all informants have basic operational skills; they know how to use a computer and a web-browser and how to find things on the Internet. However, it may also be noted that there was a high degree of latitude in the use of ICT during compulsory school. As a result, the skills developed in compulsory school could be more dependent on personal interest than on educational goals.

Information skills

67 per cent of the population used the Internet for information-seeking purposes every week in seventh grade. Regardless of actual use, a majority (>70%) of the population thought that the Internet was a very appropriate source for information in three out of four tasks in the questionnaire, including: (a) factual information, (b) what is shown at the local cinema and (c) their idol's newest song. The fourth task was to find how to spell a word, and the most likely way to find out was to ask a teacher (71%). In this question, almost a third answered that they were unlikely to use the Internet (34%) or a word processor (30%). Three years later, both Julia and Hans explain that they use Google to find how a word is spelled. Julia says "… *I look it up on Google to be able to make a correct spelling. But I'm sure there are some kinds of spelling sites you could use, but I haven't found any"*. In contrast, Helene has found an online dictionary to use, Nordstedts ordbok, and she is the only one that refers to an online dictionary.

Google is the most common way to search for information. There are only three informants, Lisa, Helene and Mikael who begin their searches in another way, namely, in the digital version of The National Encyclopaedia (NE). This is worth noting because NE is a source that teachers often recommend. A common belief in the classroom seems to be that the NE is better than Wikipedia; this view is taken because of the simple process required to change information on Wikipedia.

Another way to handle sources from a teacher's perspective is to recommend specific websites. Adrian exemplifies an information search during Environmental Studies as they *"…are like free [to search by themselves] and then we got some suggestions now and then"*, and Peter says that some teachers use Fronter[2] to give recommendations on useful links. There are also teachers who do not seem to have the skills themselves to talk about Internet-based information-seeking. Moa says that *"… all our teacher aren't like familiar with the computer, so it's up to us to decide [how to search]"*. However, the informants' education in information-seeking skills seems to be focused mostly on what kind of sources they are allowed to use, both in compulsory and upper secondary school. *"We've been told such as, not to use Wikipedia, that we should use NE instead … but it hasn't been any actual education."(*Moa). Mikael, who comes from a compulsory school outside the municipality, remembers that:

Mikael:	… in the last year of compulsory school somebody came and gave a lecture, or maybe we watched a video. They talked only about Wikipedia, some thoughts remain from that. And then the Swedish teacher [in upper secondary school] has mentioned that you're not supposed to start with that [Wikipedia].

All informants seem to be aware of the importance of critical scrutiny, but it could be seen as time-consuming and unnecessary. According to Jenny, she refrains from critical scrutiny because "*you couldn't cope, or I don't know, maybe you 'buy it' at once without thinking"*. When teachers do not explicitly ask for critical scrutiny, Jenny often sees it as unnecessary. The informants also assign different meanings to critical scrutiny, and there does not seem to be a vivid dialogue in school about this. Agnes talks about an approach in compulsory school where the teachers were satisfied *"as long as you wrote the source so the teacher could see it"*.

The informants' way to scrutinise information could be divided into three different approaches: (1) content oriented, (2) comparison oriented and (3) source oriented.

1. Content oriented
This approach means that the information is scrutinised in terms of the content itself. Adrian and John are two informants using this approach:

Adrian:	I used to take what [results] first comes up, and then, if they aren't good I continue to scroll down and look further.
Interviewer:	What could it be that doesn't maks them good?
Adrian:	Not enough facts in them. Because isn't it good with some facts if you are supposed to learn something about it?
John:	… I kind of take what I think sounds good.
Interviewer:	What makes it sound good, what could that be?
John	It should be interesting and have to do with what you're doing.

Adrian describes a process that focuses on the quantity and not the quality of the search result. He describes the process as time-consuming, as it sometimes requires going through a lot of search results, "*but finally it usually comes up"*. Worth noting is that later in the interview, Adrian notes that he did not hesitate to use books when he seeks information and that he is aware that information may be incorrect both in books and on the Internet. One problem that he calmly notes as *"you never know"*.

2. Comparison oriented
This approach means that two or more sources are compared; if they have the same content or facts, they are seen as reliable. Hans, Nelly, Jenny and Agnes must give voice to this approach:

Nelly:	If you see the same [facts] in a number of pages, you like, know that they are kind of true
Agnes:	I use to check 2-3 sources and if they have more or less the same information it's okay to use it
Hans:	I look at different things and compare
Jenny:	it's good if you double check

Jenny refers to an assignment in upper secondary school in Swedish, where they had to write "one of those source critical essays. And then you had to compare with… *several different sources*. So if you use Wikipedia you can compare with NE which is a safe source, or look in a book.".

3. Source oriented

This approach focuses on the source by itself, and the informants are aware that all sources are not reliable and that you have to scrutinise each source. This also means that they often start with sources they know they can trust. Lisa, Mikael and Helene give voice to this approach.

Lisa:	We should be like critical to the sources…
Mikael:	NE is quite relevant, to have a kind of small general picture or so. Then, you have to look around, search on certain keywords and see what you find. Then, you have to be critical also. It could be things that aren't true or so, and there are usually some [that aren't true]!

Lisa does not describe what she actually means by being critical of the sources, but Mikael says "… at first you could check if it's like a single person who has just written down from his own perspective so to say. 'Cause you have to see it from the right perspective that you…you could see it from different ways quite often".

At a first glance, Helene's search strategies could be seen as content oriented, especially when she is asked how she evaluates search results. She used to look at summaries on the search result list in Google and decide if *"it sounds good"*. When she is asked how she decides what is "*good*" and whether she is afraid of being scammed she is silent at first, and then she starts to giggle and says *"I don't think I have thought about that! […] Nah, but it could be that you feel that it sounds reliable"*. However, this is only a small part of a more thoughtful approach; Helene chooses her sources very carefully from the beginning and has a critical approach to the open Internet. Just like Mikael, she often starts with NE, and it is only if she *"doesn't obtain anything from NE"* that she uses the open Internet. However, if the information search is for school assignments, she prefers to use books from the school library. The open Internet is used when it is about *"those quick, like the three biggest airports in Europe"*.

Moa, Julia and Peter fall outside this categorisation. Moa does not describe any particular way to scrutinise information. Julia is also taciturn about scrutiny and focuses mostly on operational skills in terms of tips she got from her parents, such as *"adding a +"* after the word to get at a *"closer answer"* on Google. Peter seems to think little about scrutiny and says it is *"a little harder when you're not allowed to use Wikipedia"*; he is glad when he can find any other websites with a lot of information. Because these three said so little about critical scrutiny, I choose to leave them outside of the further analysis.

As a conclusion, the informants, as well as the youths in the original population, often use the Internet for information-seeking. The informants also give a picture of varying experiences with education in information-seeking. Three qualitatively different information-seeking approaches could be identified: content, comparison and source oriented. Among these nine informants, there are tendencies that suggest that different information-seeking approaches could correlate with educational orientation (Figure 2).

Content		Comparison				Source		
Adrian	John	Hans	Nelly	Jenny	Agnes	Mikael	Helene	Lisa
Vocational		Combined				Preparatory		

Figure 2. Different information-seeking approaches in relation to educational programme at upper secondary school.

This will be looked at closer in relation to differences and similarities among the informants according to attitudes and approaches towards ICT and education.

Attitudes and approaches towards ICT and education

Content focused and moderately impressed by ICT

Both Adrian and John are pupils at a vocational programme and seem to share a rather pragmatic view on their ICT use. They use computers for both education and entertainment, but in a very moderate way. Their computers work like any other artefact for them, and they are not fascinated by the laptop project at the upper secondary school. John, who has previous experience at an upper secondary school without laptops, cannot see any significant benefits from the use of laptops because "… *there are anyway computers to use at school. And then pen and paper is still used, there's not much of a difference...*". Adrian says, *"it's nothing special that they are needed for, not according to me anyway"*. Adrian and John have parents who use computers, but on a level that makes it impossible for the boys to ask them for help. According to John, this seems to be a minor problem. He is a confident user and appears to be quite clear about the ICT skills that are necessary for him, and he sees himself as entirely self-taught. Adrian is more cautious in the valuation of his skills and has learned most from teachers and older siblings.

Comparison focused and positive users of ICT

Nelly, Jenny and Agnes are all pupils on combined programmes at upper secondary school, and Hans is on a vocational programme. They all have positive attitudes towards having a laptop of their own. According to Hans, it feels *"modern"* and like a *"step forward"*. Agnes is excluded from this statement because she was interviewed before she started upper secondary school, but the only thing she was worried about was whether it might be too much to use the laptop in every lesson[3]. At upper secondary school, Nelly, Jenny and Hans take lesson notes on their laptops. At the same time, Hans concludes that it is not always necessary because some of the teachers put *"everything on Fronter"*, and he is annoyed with the teachers who still have not learned to use the technology. When Jenny is interviewed a couple of months after Hans, she describes the situation as such: *"some [teachers] had a hard time adapting in the beginning. It felt like they were used to paper and so. However, now everyone has learned how to use Fronter"*. Nelly, Jenny and Hans also describe their use of the laptops as a way to organise their education, and Jenny has a well thought-out strategy:

Jenny:	I have performed like this, a folder for each subject... then you can gather all notes and things... so … when you're going to study for a test, you can upload from … Fronter, you can add expositions and like that. So when you have everything in the same place, it becomes smooth.

Unlike Jenny, Nelly seldom uses the laptop for studying, but sometimes she writes notes on the laptop or checks Fronter for information from the teachers. She prefers to study in the traditional way by using paper and pen, and she uses books, as well as the Internet, for information. Common to Nelly, Jenny and Hans is that they use their laptops for entertainment and private communication, such as Facebook, even during lessons. However, they are careful that this use does not affect their schoolwork negatively. Hans says that he only plays games during lessons *"when the teacher is harping on something hard"*. All are confident users and express an understanding of their own knowledge. Notable is that Agnes is critical of ICT education in compulsory school. She mentions several times in the interview that she had not had the opportunity "*to learn the things you should have learned in school"*. While Hans and Jenny are the most skilled ICT users in their family, Nelly and Agnes comes from homes in which they can get help with ICT questions, often from their mothers.

Source focused and critical users of ICT

Helene and Lisa are studying on preparatory programmes, Mikael on a combined program. These young people provide a more reflective impression in general than the other informants during the interviews. An example of this is Helene and Mikael's conclusions about the laptops:

Helene:	… in the beginning it was so fun, but now I realise that there are many disadvantages to it. Because I can't concentrate when I have my computer and it's not so good for school work I've noticed. So now it's [the laptop] always almost in the little pouch and just lies there. So I don't use it much anymore, as I did at first.
Mikael:	… you can use it as intended in school, write and search for information as well. And also comes in handy at home, it's easy to bring around everywhere... Then, it's a fact that many, and perhaps I sometimes, might use it the wrong way during lessons (...) going into the more entertaining parts and so. Because you cannot cope with [the lessons], and it's easy to get stuck there [in the entertaining part].

Helene is positive towards the laptop itself, but it does not work well for her to use it during lessons or as a substitute for paper and pen while studying. Michael alternates between using the computer and paper and pencil, but he sees great benefits in being able to edit texts that are written on the computer. Lisa was interviewed in the holiday between compulsory and upper secondary school, but already describes a well thought-out plan for ICT use. She has developed a strategy for studying that includes writing in Microsoft Word what she has to know and remember. Unlike Helene, this seems to work well for Lisa. Common for these informants is that they express a goal-oriented use of ICT and that they all strive for high grades. Mikael uses Facebook now and then during lessons, but he is well aware of the consequences: *"… I want high grades, and I like to have control, to understand. However, it happens that I'm on Facebook sometimes, if you're really tired, if you're exhausted, you think that - 'well I'll make up for it later'"*. They all have parents who try to help them with ICT issues. Helene states that she and her father are the family's *"technicians"*, and they seem to work out ICT issues together.

In summary, the three groups are not composed of uniform, homogeneous young people. They are all ICT users, but there are different tendencies in and between the groups that may mean that the way they search and scrutinise information could be related to a more comprehensive approach to ICT, as well as to educational goals.

Final reflections

The findings in the present research, as well as in previous research, lead to three concluding reflections. First, the informants' descriptions of their information-seeking education correspond well to previous findings by Limberg and Folkesson (2006); especially in compulsory school, education was primarily focused on procedural matters and seldom carried out in a way that leads to a deeper understanding or a reflective approach. As argued previously basic operational skills, such as the ability to use a web browser and a search engine, are prerequisites for more developed and confident ICT use (Enochsson, 2005, 2007; van Dijk, 2005). However, findings show that it is not obvious that these skills are much further developed among all pupils, not even when the pupils have access to a personal laptop during the school day. In compulsory school, as well as in upper secondary school, the use of ICT is very much dependent on each individual's own desires and goals. This leads to the second reflection.

Even if the informants have developed information-seeking skills that go beyond basic operational skills, it is on qualitatively different levels. The different orientations in search strategies and critical scrutiny correspond well with previous research (cf. Sundin & Francke, 2009) as the youth used more or less developed methods to meet the school's demands for a critical attitude. They all know that they almost never are allowed to refer to Wikipedia, but the way they handle the source and the prohibition differs qualitatively. One explanation could be that a general dialogue on higher abilities, such as desirable critical consciousness (Beck & Jamissen, 2011; Beck & Øgrim, 2009), seems to be more or less absent in these educational contexts. As a result great responsibility seems to be placed on the individual pupils to develop these higher abilities. When the pupils are left to be responsible for this by themselves, background factors and educational orientation are of great importance.

The third and final reflection concerns the digital stratification that can be distinguished in the findings. van Dijk (2005) emphasises that the level of digital inequality seems to increase from operational to information and finally to strategic skills. In the present study, this trend is illustrated by inequalities in information skills. The three different approaches to scrutinising information could be seen as representatives of digital stratification; from an unreflected focus on the content to the comparison of two or more sources and finally to the scrutiny of the source by itself. The pupils connected to these different approaches also differ in other ways. Buckingham (2007) talks about "the usual suspects"; in this study, Helene, Mikael and Lisa could be identified as privileged pupils who seem to have developed a well thought-out strategy for education in general, and information-seeking in particular, with or without ICT. They seem to take great responsibility for their education, they are well aware of the consequences of different strategies in information-seeking and they could be found in the third group, those who scrutinise the source by itself.

The results of this study are suggestive, but by no means conclusive in regard to digital stratification, but this raises important questions about - what this study seems to show - the schools' inability to even out the existing differences between different groups of children according to digital skills. Notable is that different skills may be connected to different educational programmes. There are

tendencies that pupils on vocational programmes have less developed information-seeking skills than pupils on preparatory programmes. At the same time, the family background is of great importance when it comes to the choice of education (SOU 2008:69). This in turn suggests that there may exist interaction between the development of skills, the choice of education and digital stratification. Further research is needed to explore such an interaction.

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1 Bilddagboken - a photo diary

2 Fronter - the Learning Management System used at the upper secondary school

3 Agnes will go to another upper secondary school that has a long tradition with laptops.