Information literacies in school and everyday life
Swedish young people’s information literacies in different contexts

HANNA LINDBOM
The aim of this thesis is to investigate how Swedish young people’s information literacies are learned and enacted in different contexts. This study contributes to the information literacies research area by comparing information literacies across contexts rather than focusing on either the school context or everyday life, which most previous research has done. The study has a societal relevance linked to the library and education professions. Semi-structured interviews were conducted with seven Swedish students in their last year of secondary school. The study’s understanding of information literacies is based on sociocultural theory and practice theories. The empirical data was analysed from a sociocultural perspective. Concepts such as cultural tools, mastery and appropriation, cognitive value, cognitive authority, imposed questions, and infrastructural meaning-making were used in the analysis. The results illustrate that information literacies in school are affected by the students being judged and graded. Outside of school more information is passively encountered rather than actively searched for. Finding ways to minimise time and effort is part of the participants’ information literacies. Across contexts, information literacies are socially shaped and negotiated. How information literacies are conceptualised and learned in school affects what is considered searching for information and assessing credibility outside of that context. In school, credibility assessments are learned explicitly, while outside of school they are learned implicitly. The study also indicates the importance of educating students about search engines and algorithms.
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTENTS</td>
<td>1</td>
</tr>
<tr>
<td>1  INTRODUCTION</td>
<td>3</td>
</tr>
<tr>
<td>1.1  AIM AND RESEARCH QUESTIONS</td>
<td>5</td>
</tr>
<tr>
<td>2  PREVIOUS RESEARCH AND LITERATURE REVIEW</td>
<td>6</td>
</tr>
<tr>
<td>2.1  INFORMATION LITERACY LITERATURE</td>
<td>6</td>
</tr>
<tr>
<td>2.2  SCHOOL</td>
<td>7</td>
</tr>
<tr>
<td>2.2.1  The school context</td>
<td>7</td>
</tr>
<tr>
<td>2.2.2  Credibility assessments in school</td>
<td>8</td>
</tr>
<tr>
<td>2.2.3  Teachers’ and librarians’ perspectives</td>
<td>9</td>
</tr>
<tr>
<td>2.3  SCHOOL AND EVERYDAY LIFE</td>
<td>9</td>
</tr>
<tr>
<td>2.3.1  School and everyday life contexts</td>
<td>9</td>
</tr>
<tr>
<td>2.3.2  Information seeking</td>
<td>10</td>
</tr>
<tr>
<td>2.3.3  Online search and Google</td>
<td>11</td>
</tr>
<tr>
<td>2.3.4  Credibility assessments</td>
<td>11</td>
</tr>
<tr>
<td>2.4  EVERYDAY LIFE</td>
<td>12</td>
</tr>
<tr>
<td>2.4.1  Online search</td>
<td>12</td>
</tr>
<tr>
<td>2.4.2  News media</td>
<td>13</td>
</tr>
<tr>
<td>2.4.3  Credibility, algorithms, and social media</td>
<td>13</td>
</tr>
<tr>
<td>2.4.4  Interpersonal information seeking</td>
<td>14</td>
</tr>
<tr>
<td>2.5  SUMMARY</td>
<td>14</td>
</tr>
<tr>
<td>3  THEORY</td>
<td>16</td>
</tr>
<tr>
<td>3.1  INFORMATION</td>
<td>16</td>
</tr>
<tr>
<td>3.2  SOCIOCULTURAL THEORY</td>
<td>17</td>
</tr>
<tr>
<td>3.2.1  Cultural tools</td>
<td>18</td>
</tr>
<tr>
<td>3.3  PRACTICES</td>
<td>20</td>
</tr>
<tr>
<td>3.4  INFORMATION LITERACIES</td>
<td>21</td>
</tr>
<tr>
<td>3.4.1  Infrastructural meaning-making</td>
<td>22</td>
</tr>
<tr>
<td>3.5  CREDIBILITY AND COGNITIVE AUTHORITY</td>
<td>22</td>
</tr>
<tr>
<td>3.6  IMPOSED AND SELF-GENERATED QUESTIONS</td>
<td>24</td>
</tr>
<tr>
<td>3.7  SUMMARY</td>
<td>24</td>
</tr>
<tr>
<td>4  METHOD</td>
<td>26</td>
</tr>
<tr>
<td>4.1  CHOICE OF METHOD</td>
<td>26</td>
</tr>
<tr>
<td>4.2  SELECTION AND RECRUITMENT OF PARTICIPANTS</td>
<td>26</td>
</tr>
<tr>
<td>4.3  DATA PRODUCTION</td>
<td>27</td>
</tr>
<tr>
<td>4.3.1  Interview guide</td>
<td>28</td>
</tr>
<tr>
<td>4.3.2  Conducting the interviews</td>
<td>28</td>
</tr>
<tr>
<td>4.4  DATA ANALYSIS</td>
<td>29</td>
</tr>
<tr>
<td>4.5  ETHICS</td>
<td>30</td>
</tr>
<tr>
<td>4.6  TRUSTWORTHINESS</td>
<td>31</td>
</tr>
<tr>
<td>5  RESULTS</td>
<td>33</td>
</tr>
<tr>
<td>5.1  INFORMATION SEEKING</td>
<td>33</td>
</tr>
<tr>
<td>5.1.1  Ways of finding information</td>
<td>34</td>
</tr>
<tr>
<td>5.1.2  Obligatory search</td>
<td>37</td>
</tr>
<tr>
<td>5.2  SOURCE SELECTION</td>
<td>39</td>
</tr>
<tr>
<td>5.2.1  Source selection in school</td>
<td>39</td>
</tr>
<tr>
<td>5.2.2  Wikipedia</td>
<td>40</td>
</tr>
<tr>
<td>5.2.3  Google</td>
<td>41</td>
</tr>
<tr>
<td>5.3  CREDIBILITY</td>
<td>43</td>
</tr>
<tr>
<td>5.3.1  Credibility and grades</td>
<td>43</td>
</tr>
<tr>
<td>5.3.2  Credibility assessments</td>
<td>45</td>
</tr>
<tr>
<td>5.3.3  Cognitive authorities</td>
<td>46</td>
</tr>
</tbody>
</table>
1 Introduction

In today’s society we are met with massive amounts of information every day. Information and communication technology development has made increasing quantities of information easily available. It has repeatedly been stated that to successfully navigate this information-rich society it is vital to be information literate. Emphasis is often placed on how information literacy is important in all aspects of life in contemporary society to be able to access and critically evaluate information. These claims have been expressed by researchers, organisations such as UNESCO, and in public debate (Haider & Sundin, 2019).

Information literacy is a concept with several definitions which has led to what Julien (2016) describes as terminological confusion. There are different perspectives from which information literacy can be conceptualised (Agosto, 2022; Lundh et al., 2013; Pilerot, 2016b). The most common one is as individual measurable competences, a fixed generic skill set to be learned. This approach to information literacy is sometimes referred to as a checklist approach since it may be understood as “a series of competences to be mastered” (Bawden & Robinson, 2012, p. 290). Another perspective, the one that will be used in this study, considers information literacies as ongoing and contextual processes, that are embedded in social practices. Information literacies, in the plural, is used instead of information literacy as a theoretical statement of this study’s perspective on information literacies as situational. The plural form has been employed in the same manner in previous studies (e.g. Francke et al., 2011). In this study, information literacies are understood as related to seeking or searching for information, critically assessing information, as well as using and communicating information. This study’s understanding of information literacies will be addressed in greater detail in the theory chapter.

When discussing what they call contemporary society’s ongoing crisis of information, Haider and Sundin (2022b) state that our digital information systems are embedded in our everyday lives to the point where they become invisible. Information is destabilised, they claim, and commercial platformised information infrastructures such as online search engines and social media, are contributing to the volatility of information. Terms such as ‘alternative facts’ have become part of public debate and relate to a strategic blurring of the line between facts and opinions. When facts are transformed into opinions, truth becomes less relevant, Haider and Sundin (2022b) note, since opinions, unlike facts, cannot be true or false.

Traditional credibility assessment strategies such as regarding information that is widely spread and reported by several sources as more trustworthy no longer work as well as they used to, according to Haider and Sundin (2022b), since what sources are made visible is controlled by algorithms which, simplified, favour popularity over trustworthiness. Algorithms regulate search results and while seemingly invisible, they have a huge impact on what information we come across when searching online. Further, Haider and Sundin (2022b) describe what they call the trust paradox. We are taught to always question information and evaluate its credibility, but this can be exaggerated and turn into cynically not trusting anything at all which then undermines our societal collective knowledge and spreads doubt.
Taken together, these components illustrate the complexity of navigating our information society. Not only are we surrounded by all this information and misinformation, we are also being made individually responsible for judging whether that information is true or not. Today’s youth grew up surrounded by information and technology in a way previous generations did not. Knowledge about young people’s information literacies today is needed to further support their information literacies development. Information literacies are crucial in handling our information society and what Haider and Sundin (2022b) refer to as the crisis of information.

Young people’s information literacies have mainly been researched from a school environment perspective, according to Agosto (2022), who states that an everyday life perspective is largely lacking from research regarding young people’s information literacies. There are several studies about information literacies representing a Swedish school perspective (e.g. Alexandersson & Limberg, 2012; Carlsson & Sundin, 2020; Francke et al., 2011; Lundh et al., 2015; Sundin & Francke, 2009). However, there is less research on information literacies in (other) everyday life situations of Swedish young people. While school is a part of young people’s everyday lives, the present study makes a distinction between the school context and other everyday life contexts that are part of young people’s lives outside of school. This study considers the information literacies of its Swedish participants in school and in their spare time. Thus contributing to the ongoing discussion of information literacies in a school context while also representing an everyday life perspective that includes the lesser researched out of school contexts. In their literature review, Martzoukou and Sayyad Abdi (2017) argue that there is a need for a more holistic perspective in information literacy research, stating that other contexts besides education and work are largely lacking in existing research. The present study contributes to the information literacies research area by providing a holistic perspective of young Swedes’ information literacies across contexts.

The Swedish school system is often mentioned as important for information literacies development, but school is not the only context in young people’s everyday lives where information literacies are relevant. Therefore, learning more about similarities and differences between information literacies in the school and home setting would be valuable. From the perspective of the ongoing crisis of information and especially Haider and Sundin’s (2022b) trust paradox, it would be gainful to learn more about what impact the source criticism Swedish students are taught in school has on their information activities in other contexts.

The way in which information literacies are conceptualised in the school context often leads to young people’s everyday life information experiences being excluded in the school context, according to Comstock (2012), who advocates for a more everyday life-based information literacies approach in school libraries. The present study can contribute to the establishment or development of such an approach through an understanding of young people’s school and everyday life information literacies. It would be useful for both teachers and school librarians to gain a more profound understanding of how their students interact with information outside of school as compared to in school to help them develop their information literacies in a way that will
benefit the students both in and out of the school setting. A more detailed understanding of how young people develop and enact their information literacies in school and out of school would be useful for the same purposes. Knowledge about this might also be useful for the students themselves.

In summary, the present study contributes to the information literacies research area and this contribution also has a societal relevance linked to the library and education professions. This study investigates young people’s information literacies across different contexts rather than focusing on either the school context or contexts outside of school, which most previous research has done.

1.1 Aim and research questions

The aim of this study is to contribute to the understanding of how the participants’ information literacies are learned and enacted in different contexts. The focus is on whether there are differences between the school context and other contexts regarding how the participants search for, evaluate, and communicate information in school and outside of school. This study’s sociocultural theoretical framework has influenced the research questions. Information literacies are in this study understood as socially and culturally developed through interactions with people and objects in different contexts. Since information literacies are situated in different contexts, they can also differ between contexts. The following research questions are formulated to guide the investigation and the aim is fulfilled through answering these questions:

- What contributes to shape the ways in which the participants seek, find, and make use of information in different contexts?
- How do the participants’ reasonings regarding source selection relate to in and out of school contexts?
- If at all, how do the participants’ credibility assessments vary depending on context?

Since the empirical data comes from interviews, the findings are grounded in the perspective of the participants’ own experiences and perceptions of their information literacies. The participants are seven Swedish 18- and 19-year-olds in their final year of upper secondary school.
2 Previous research and literature review

This chapter presents an overview of previous research and literature related to the present study’s subject area. The first section introduces the information literacy research area in general. The following sections provide an overview of information literacies literature relevant for this study. Since this study aims to compare information literacies across contexts, the sections are organised according to the three contextual themes school, school and everyday life, and everyday life. Included aspects are related to the research questions, for example, credibility assessments, information seeking, and online search.

The familiarisation with the literature began by reading literature reviews of different areas of information literacy research. Most of the literature was found through searching in University of Borås’ library catalogue Primo and in the Library and Information Science Abstracts database (LISA). The searches were conducted keeping in mind the focus on comparing contexts and therefore searches were conducted targeting the school context or the everyday life contexts specifically as well as searches focusing on studies that compared information literacies across contexts.

This study understands information literacies as an ongoing process that is contextual and embedded in social practices, therefore information literacies studies that conceptualise information literacy as an individual and measurable set of skills to be learned are not prioritised in the literature review.

2.1 Information literacy literature

Whitworth (2014) reports that over 50% of the information literacy literature can be found within the Library and Information Science field. The second most common discipline for information literacy is computer science, which holds around 20% of the information literacy literature, Whitworth (2014) notes, adding that this number seems to be declining. However, there is a growing presence of information literacy literature within the health discipline and the educational science discipline. Pilerot (2016a) mentions that the information literacy literature spans various areas, including best practices written by professional librarians, policies, and guidelines, as well as both empirical and theoretical research studies. The dominating focus of the literature within the information literacy field is on higher education, Whitworth (2014) states, adding that other sectors include primary to secondary education, community, workplace, and public health. While the literature in the community sector and the primary to secondary education sector has been growing, the literature within the higher education sector constitutes 60% of the information literacy literature, as reported by Whitworth in 2014.

In their literature review, Martzoukou and Sayyad Abdi (2017) conclude that the existing information literacy research with a focus on everyday life settings is limited. Contextual areas of interest identified by the authors in the existing empirical research on information literacy in everyday life settings include leisure and community activities, citizenship and fulfilment of social roles,
public health, and critical life situations. They state that much of the existing information literacy research has investigated professional groups. Various foci include demographic or geographic differences and situations linked to learning and health, among others.

Information literacy related literature regarding university or college students have foci such as information seeking practices (e.g. Head & Eisenberg, 2010; Head & Eisenberg, 2011), Wikipedia (e.g. Menchen-Trevino & Hargittai, 2011), critical evaluation of online information (e.g. Hilligoss & Rieh, 2008), and Google (e.g. Pan et al., 2007). McGrew et al. (2018) explored middle school, high school, and college students’ evaluation of information online. Information literacies and practices have been studied with a focus on specific occupations or workplaces (e.g. Bonner & Lloyd, 2011; Eckerdal, 2011). Young people’s information literacies and activities have been studied with various foci, such as Google (Kodama et al., 2017), how information is experienced (Smith & Hepworth, 2012), learning in a digital age (Livingstone & Sefton-Green, 2016; Sefton-Green & Livingstone, 2019), and disadvantaged youths (Buchanan & Tuckerman, 2016; Subramaniam et al., 2015).

2.2 School

In this section, information literacies literature related to educational contexts is presented. The literature is sorted into three themes: the school context, credibility assessments in school, and information literacies from the perspectives of teachers and librarians.

2.2.1 The school context

In her case study on information literacies in municipal adult education Gärdén (2016) highlights a tension between the school practice and the students’ self-guided learning. The idea behind research-based school assignments is that the schoolwork should be driven by a research question, however, Gärdén (2016) noted that this was not always the case since students sometimes searched for information first and then decided on specific questions based on what information they found. The study indicated that students use the assignment instructions as a tool and that information seeking in school is generally only perceived as online search.

One aspect that is characteristic for the school context is how the school practice and the teachers influence the students’ information seeking and use. Alexandersson and Limberg (2012) state that the ways in which students assume responsibility as well as their knowledge construction have been altered through the use of new technologies when seeking for information. They furthermore note that the conditions for dividing responsibility and meaning making has gradually changed during the first decade of the 21st century.
In an ethnographic study of young people’s information search activities, Andersson (2017a) discusses how pupils’ information activities are carried out and legitimised in the school context. Pupils adapt their information activities according to their understanding of what is legitimate in the school context, she concludes, adding that the pupils also use non-legitimate ways of searching for information while still trying to provide the teacher with a legitimate information source. Andersson (2017a) differentiates between front and backstage information activities when describing uncertainties and negotiations within the school context. Legitimate and non-legitimate information activities within a school context are part of an ongoing negotiation that relates to how teachers’ expectations and the school context affect the students’ information literacies.

When analysing blog posts about credibility assessments derived from a study of Swedish upper secondary school students, Lundh et al. (2015) identified two tensions in the participants’ narratives of themselves as information seekers. One of them is the tension between being an independent information seeker and at the same time seeking information in ways that are sanctioned in the school context. They also discuss the impact of the fact that information activities within a school context are usually assessed and graded. The authors furthermore note that social norms related to credibility assessments in a school context are communicated and negotiated in discursive interaction.

2.2.2 Credibility assessments in school

Meola’s (2004) critique of the checklist approach to credibility assessments emphasises that it does not encourage the development of critical thinking and that it does not correspond well to the nature of online information. As an alternative, he suggests a more contextual approach centred around the comparison of information sources, corroboration of information, and promotion of peer- and editorially reviewed resources. While Meola (2004) discusses this with a focus on undergraduates, it is still relevant for this study since the evaluation of online information is based on the same principles.

In their ethnographic study on how upper secondary school students assess the credibility of information sources in a school context Francke et al. (2011) identified four approaches to credibility assessments. These relate to balance, control, multiplicity, and commitment. The study also has a particular focus on participatory sources such as Wikipedia. The balance approach relates to comparing different sources and perspectives. The control approach revolves around using rules or criteria as evaluation tools. Social commitment indicates sources that are deemed credible because they have good intentions. Multiplicity relates to sources with several authors or sources that have been read by many people which is seen as ensuring credibility.

Another ethnographic study with a focus on Wikipedia is Sundin and Francke’s (2009) investigation of upper secondary school students’ negotiation of credibility and authority of information in a school context. The authors conclude that students tend to base their credibility assessments on methods developed for traditional media which emphasises origin and authorship.
McGrew (2021) came to a similar conclusion, stating that US high school students still rely on evaluation tactics that are intended to best suit printed information rather than information on the open web. According to Sundin and Francke (2009), students use genre as a tool for assessing credibility within the school context. Wikipedia’s status is described by Francke and Sundin (2009) as complex, since it presents a genre conflict between the encyclopaedia genre, which favours facts, and the self-generated genre, which lacks quality control. Part of the students’ hesitancy towards Wikipedia is also due to it not being endorsed by teachers.

2.2.3 Teachers’ and librarians’ perspectives

Information literacies in a school context have also been studied from a teacher or school librarian perspective. In their study on elementary and secondary school teachers’ perceptions of how students search for and critically assess information, Sundin and Carlsson (2016) conclude from the focus group discussions that the teachers found it difficult to conceptualise search as teachable. A critical perspective on search was found to be lacking and the neglected responsibility of teaching search contributed to the students relying on Google’s relevance ranking in their information assessments. This was problematised by the authors, who state that there is a need to recognise that Google plays a dominant role in our information infrastructure and as a co-constructor of what knowledge is available. This ties in with what Lindh et al. (2016) state about how Swedish pupils are “trained into becoming Google users” (para. 8), adding that this should not be treated as unproblematic.

2.3 School and everyday life

The information literacies literature presented in this section relates to both educational and (other) everyday life contexts to different degrees. All give a perspective that can be related to contextual similarities and differences. The literature is organised into four themes: school and everyday life contexts, information seeking, online search and Google, and credibility assessments.

2.3.1 School and everyday life contexts

In a case study, Comstock (2012) observes that there is a gap between how high school students and school librarians view information literacies. The way information literacies are conceptualised within a school context often leads to young people’s information experiences in other contexts being neglected within the school context. This means that, in school, young people’s information activities are dictated by an information literacies discourse defined by the school and school librarians. Within this discourse there are explicit limitations as to what is considered legitimate ways of searching for and using information. Comstock (2012) argues that the school’s information literacies discourse “relates little to the empowered decision-making of teens in
their everyday information behaviors at home, work, and in schoolwork tasks outside of the school library” (p. ii).

Related to Comstock’s (2012) conclusions is Aillerie’s (2019) ethnographic study which revolves around French teenagers’ information practices. Here it is pointed out that school practices take place outside the classroom as well and that online and offline practices are intertwined. A focus point for the study is the implicit part of pupils’ schoolwork, activities that take place behind the scenes of which there are aspects that the pupils do not show their teachers. Aillerie (2019) states that there is a “gap between what is required at school and the production of work in these ‘intermediate spaces’ between school and personal life” (p. 743). This can be related to Andersson’s (2017a) study. There is a tension between the goal of becoming proficient and the tactics used in everyday life, Aillerie (2019) notes, referring to the students’ and teachers’ practices.

2.3.2 Information seeking

Based on existing models and previous research, Shenton and Hay-Gibson (2011) suggest a new model for illustrating children’s and young people’s information seeking. They state that information seeking is an iterative process, where the seeker often revisits earlier stages in the search process in attempts to overcome difficulties. Shenton and Hay-Gibson (2011) emphasise that the information seeking process may be stopped at any time, sometimes without having satisfied the information need. However, they also note that this might not be true within educational contexts: “When information seeking is investigated in the context of curriculum projects that must be completed, aborting the process is scarcely an option” (Shenton and Hay-Gibson, 2011, p. 65).

Foss et al. (2013) observed and interviewed US adolescents (ages 14-17) regarding their online information searching at home. The study investigated, among other things, why the participants search, what frustrates them during the search process, and what their reasonings are behind what search result they choose from the search results list. The authors suggest that adolescents are social searchers and that social influence and search motivation tend to be intertwined. The study focuses on online search at home, however, school assignments related searches performed at home are also included.

Using data from a national British survey, Eynon and Malmberg (2012) investigated young people’s online information seeking from the perspective of supporting networks, which include parents, schools, and friends. These networks of support have a significant impact on young people’s information seeking online, the authors state, while still acknowledging young people’s individual characteristics, skills, and confidence.
2.3.3 Online search and Google

Andersson (2017b) views the school context as a part of everyday life and her ethnographic study on Google’s role in Swedish teenagers’ everyday online searching activities across different contexts identifies three different framings in relation to how Google is used by the participants. Google as fact-finding is related to the school context where googling is seen as finding facts. Google as a neutral infrastructure illustrates how the use of Google is more invisible outside the school context. Google as an authority indicates how the participants trust Google and its ranking, and their view of Google as a critical evaluator of content that can be trusted to provide relevant information. It is concluded that Google is primarily associated with schoolwork.

In a study, Sundin (2020) compares 17–19-year-old study participants’ accounts of their first use of Google and their first use of social media, connecting it to their first memory of using a computer and a smartphone. Social media clearly relates to leisure while Google more often relates to the school context. Since the first use of social media is related to the first use of a smartphone and the first use of Google is related to computers, it follows that computers are also more related to a school context while smartphones are more related to everyday life outside school. It is concluded that Google is clearly inscribed into school practices.

2.3.4 Credibility assessments

Internet users in general do not wish to spend too much time and effort on credibility assessments, according to Metzger (2007), who summarises existing literature on the topic of credibility assessments. It is suggested in the summary that credibility assessments online are the individual’s responsibility. Credibility assessments are situational and the level of motivation in each situation affects the extent to which a person evaluates the credibility of information. Metzger (2007) states that each person may use different processes of credibility assessments at different times depending on the task and the situation, thus a person’s credibility assessment process is not always the same. Motivation is a factor in this and when motivation is low, people tend to use more superficial evaluation criteria such as attractiveness.

In their interview study, Haider and Sundin (2022a) discuss information literacies challenges related to the conflicting engagements of trust and doubt with a focus on adolescents’ credibility assessments of information and information sources. In the analysis, the two dimensions trust and agency are used to visualise four evaluator stereotypes: naïve evaluators, non-evaluators, sceptical evaluators, and confident evaluators. The study includes a discussion on the differences between the school context and other contexts when it comes to critical assessments of information.

Carlsson and Sundin (2020) found that Swedish pupils apply the methods for credibility assessments they are taught in school in their spare time. School’s teaching of information literacies is influential outside the school context, especially since not all pupils have information literacies support at home. An
understanding of the conditions of information access and the whole system of online search is, according to the study, largely lacking from schools’ media and information literacies education.

2.4 Everyday life

This study views the school context as part of everyday life, however, here everyday life is understood as related to non-educational contexts. This differentiation is necessary since this study aims to compare the school context to other everyday life contexts. The information literacies literature presented in this section is organised into four themes: online search, news media, credibility, algorithms and social media, and interpersonal information seeking.

2.4.1 Online search

Sundin et al. (2017) investigated the relationship between searching and everyday life. Focus groups of teenagers, teachers, academic researchers, and adults with environmental concerns were carried out. The authors state that the participants’ mentions of online search are dominated by Google. Furthermore, the study indicates that the participants’ trust in Google is high. It is suggested that the absence of credibility assessments is related to a high attribution of authority and trust in Google. Sundin and Carlsson (2016) describe it similarly as outsourcing the evaluation of information to Google. This trust in Google and Google’s algorithms is illustrated by, for example, how people tend to prefer the top ranked links on Google’s result page. However, the trust placed in Google varies depending on how important the information searched for is to the searcher. Informal information has an important role in everyday life, Sundin et al. (2017) conclude, and social media provides an alternative venue for finding this kind of information. “When you do not search for an epistemological content, the idea of assessing the credibility or factuality of what you find becomes more or less irrelevant” (Sundin et al., 2017, p. 238). Searching to find facts or arguments to settle disagreements is also discussed. In relation to this, Sundin et al. (2017) mention searching to ‘back up’ something one already knows or confirm something one already believes, Google then becomes “a tool for conscious confirmation bias” (p. 233).

In an ethnographic study, Andersson (2022) investigated the role of smartphones in young people’s everyday lives in Sweden with a focus on online search activities. Three framings of the smartphone were identified. They are related to entertainments, easy-access, and challenging co-presence, respectively. It is stated that the smartphone is primarily perceived as related to entertainment, but findings indicate that the smartphone is used for a range of other activities as well.
2.4.2 News media

In an interview study on young adults’ (aged 18-27) everyday life information strategies regarding news media Edgerly (2017) concludes that these strategies include ways of both seeking out and of avoiding information about current events. The study mentions the participants’ scepticism towards news media, their complex relationship with Wikipedia, and several different information strategies, including the use of news media sites, verification processes, relying on Google, the use of social networking sites, and preferring interpersonal sources such as family members.

Sjöberg’s (2018) study about Swedish children’s (ages 10-11 and 15-16) information seeking tactics before and during crisis discusses the participants’ relation to news media, which ties in with Edgerly (2017). The participants view traditional news media as more reliable than other digital media news outlets. Difficult vocabulary and too long texts are identified as barriers and the importance of easy access and visual aspects is emphasised. Top ranked links on Google are, according to Sjöberg (2018), generally perceived to be more reliable than links lower down, apart from sponsored links.

2.4.3 Credibility, algorithms, and social media

Metzger et al. (2010) studied US citizens’ credibility assessments online in a study with participants of various ages from 18 and upwards. A main emphasis throughout the study is that credibility evaluations are social in nature. Five cognitive heuristics used for credibility assessments are also identified. These are reputation, endorsement, consistency, expectancy violation and persuasive intent.

In their interview study, Mansour and Francke (2017) investigated how the members of a Facebook group for mothers use the group as an information source and how they assess the credibility of information provided by other group members. Factors that impact the participants’ credibility assessments are identified, including language use and writing style, educational background, level of expertise, life experience, and similar values and worldviews.

Algorithms are in the present study considered to be related to information literacies since they are part of our information infrastructure and play a big role in how information is accessed and what information is made visible through search engines, digital media, and social media platforms, among other things. Gran’s et al. (2021) study on Norwegians’ awareness of and attitudes towards algorithms indicated that younger people consider themselves to be more aware of algorithms compared to the older participants. Younger people also tend to have a more positive attitude towards algorithms in the forms of recommendations, advertisements, and personalised content.

Fletcher and Nielsen’s (2019) study focuses on how people navigate news on social media. The study’s focus group participants are from four countries (Germany, Spain, the UK, the US). The news content on social media depends
upon content producers such as editors and journalists, and on algorithms that
decide what content is displayed on each users’ social media feed. The
majority of the study’s participants do not exactly know how these algorithms
work when filtering information, however, they are sceptical of the selection
made by both algorithms and editors. The authors mention that young people
are more prone to give their approval for algorithmic selection, but also state
that age is not the only factor. Another factor is what sort of news topics they
are interested in.

Exploring how young people conceptualise, make sense of and challenge
algorithms and their intermediaries, Haider and Sundin (2022c) identified ways
in which young people’s anticipation of certain outcomes forms strategies for
their everyday life interactions with algorithmic information intermediaries.
The results of the study are discussed through the themes of anticipating
personalisation, divergences, and interventions. It is noted that the participants’
own theories about how they believe algorithms work shape the ways in which
they use online search engines and social media platforms.

2.4.4 Interpersonal information seeking

A focus group and interview study by Meyers et al. (2009) that revolves around
preteens’ (age 9-13) everyday life information seeking and use found that
access to other people have the biggest impact on preteens’ information
searching, emphasising that social factors play a critical role for preteens’
information-seeking to be successful. Social factors here refer to adults as well
as peers. It is also concluded that the complexity of informal social settings
plays an important part in preteens’ development of socially mediated
information practices.

Agosto and Hughes-Hassell (2005) explored urban young adults’ (ages 14-17)
everyday life information seeking. Their ethnographic study indicates that the
participants tended to prefer to use family and friends as sources, and an
overall preference for using interpersonal information sources. This ties in with
the results from Head and Eisenberg’s (2011) survey study about US college
students’ information seeking, where family and friends were indicated to be
on par with online resources.

2.5 Summary

This review covered aspects of information literacies research and literature
primarily related to credibility assessments, information seeking, and online
search in both school and everyday life contexts. Previous research has
identified tensions within the school context, as well as between school and
everyday life contexts. Credibility assessments have in previous research been
discussed in relation to different approaches and strategies, motivation, social
factors, time, genre, social media, and effort. The literature mentioned Google
in relation to, among other things, trust, ranking, algorithms, and fact-finding.
Research related to information seeking and online search included easy access, motivation, social factors, and contextual differences.
3 Theory

The following sections start with this study’s understanding of information, followed by a presentation of sociocultural theory, and then practice theory. After the theoretical framework has been established, this study’s understanding of information literacies will be discussed in relation to the theoretical framework. Additional theoretical concepts that will be used are then presented.

Limberg et al. (2012) state that how information literacies are understood varies depending on the theoretical perspective from which the concept is approached. In their study they discuss three such perspectives, one of which is sociocultural theory. This theoretical perspective is used as this study’s theoretical framework and represent the overarching standpoint from which the aim and research questions will be approached. Sociocultural theory was chosen because it correlates well with this study’s aim of investigating how information literacies are learned and enacted across different contexts. The understanding of information literacies in this study is influenced by sociocultural theory and practice theory, however, this study’s theoretical framework mainly consists of sociocultural theory.

3.1 Information

Information is, within an information literacy context, often understood as referring to primarily text-based information sources (Limberg et al., 2012). In this study, information is understood as more than just text. Bateson’s (1972) statement that “information is any difference which makes a difference” (p. 386) is central to this study’s understanding of the concept of information. From Lloyd’s (2010) perspective, information is formed through experiences and becomes meaningful when it is situated within a context. According to Limberg et al. (2012), Buckland’s (1991) conceptualisation of information works well within the information literacy context. He distinguishes between information as process, information as knowledge, and information as thing. As a process information relates to the activities of informing or receiving information. Information as knowledge refers to the content of information which might be compared to Bateson’s difference-making difference. Information as thing relates to the materiality of information. This study understands information as a combination of the above-mentioned conceptualisations. Information is in this study understood as related to activities such as informing, being informed, or searching for information, interactions between people where information is formed and negotiated, and meaning-making through for example interpretation and synthesisation. Furthermore, information is content of any kind that makes a difference. It can be material as in physical and digital or immaterial as in thoughts and spoken words. This rather broad definition of information was chosen to encompass a larger variety of information activities, especially outside the school context, which enables for the inclusion of everyday life activities that might not be part of information literacies in school.
3.2 Sociocultural theory

A sociocultural perspective takes into consideration how social and cultural factors impact and are impacted by the studied phenomenon, which in this case is young people’s enactments of information literacies. Wertsch (1998) highlights the importance that sociocultural theory places on understanding the situated context in which the studied phenomenon occurs. Sociocultural theory focuses on understanding the relationship between human activities and interactions, and their cultural, historical, social, and institutional contexts. This focus on context is one of the reasons why sociocultural theory was chosen as a theoretical framework for this study since its aim and research questions are centred around contextual differences in information literacies. A sociocultural perspective allows for taking social interactions, cultural norms and values, among other things, into consideration when investigating how information literacies are learned and enacted.

Lev Vygotsky is generally perceived to be the father of sociocultural theories (Wang et al., 2011). He emphasised the important role social and cultural contexts play in people’s cognitive development and describes human cognition as being developed when engaging in social activities. Wang et al. (2011) state that from the perspective of Vygotsky, learning and development take place on two planes. First on the social plane during interactions with other people, and secondly on the psychological plane inside the individual learner. From this they conclude that Vygotsky described the process of human cognitive development as “situated in, but not limited to, social interaction” (Wang et al., 2011, p. 298). This indicates that situatedness and the importance of context has been an essential part of sociocultural theory from the start.

Wang et al. (2011) state that sociocultural theory is based on social constructivism, which has impacted how learning and development are perceived within the theory. Since social constructivism understands knowledge as being “constructed socially through interaction and shared by individuals” (Wang et al., 2011, p. 297) sociocultural theory understands learning and development as occurring when the learner interacts with other people and objects, and participates in activities across social settings. Situated learning emphasises that learning is social rather than internalised and individualistic (Lloyd, 2010).

Learning and the ways in which people learn are linked to sociocultural contexts. Limberg et al. (2012) state that “sociocultural theories are explicitly grounded in theories of learning” (p. 95) and especially situated learning, which views learning as connected to specific situations and practices. The use of cultural tools (see 3.2.1 below) plays a part in learning, and both tools and environment have a part in shaping and reshaping the conditions for learning within each context. Limberg et al. (2012) state that from a sociocultural perspective, all learning is embedded in sociocultural practices that are imbued with norms and values. This implies that learning is understood as the development of abilities required to understand and act in ways increasingly more appropriate within a certain practice. The sociocultural norms and values related to learning can, according to Limberg et al. (2012), be either explicit or implicit. Examples of explicit norms are goals for learning assignments or school curricula. Implicit norms are based on expectations about how one
should act in relation to people and cultural tools within different practices. Shared norms and ideals shape a society’s educational institutions. School is full of both explicit and implicit norms and values related to learning and these may vary compared to other practices that the students take part in outside of school.

### 3.2.1 Cultural tools

Nearly all human action is mediated action, Wertsch (1998) states, and from a sociocultural perspective the focus is on the relationships between human action and the different contexts in which this action occurs. Mediated action is thus the inherent link between action and context. It consists of an agent employing cultural tools when acting. A focus on mediated action and the cultural tools employed enables the researcher to encompass both the individual and the societal perspective instead of having to choose between focusing on one of the two. This allows for a more complete representation of the studied phenomenon. The concept of cultural tools is in this study used to relate the individual actions to the sociocultural contexts they are a part of.

Within sociocultural theory, interaction is, according to Mansour and Francke (2017), seen as mediated by cultural tools that people rely on or appropriate. Cultural tools are part of our sociocultural contexts. According to Wertsch (1998), cultural tools include both physical objects with a clear materiality in the sense that they can be touched and manipulated, and more immaterial tools such as spoken language, cultural customs, social norms, values, concepts, and beliefs. Examples of cultural tools related to information literacies are computers, mobile phones, guides for how to assess credibility and search strategies taught in school. Through identifying what cultural tools the present study’s participants use when enacting their information literacies in different contexts, contextual similarities and differences are illustrated and explained.

Since cultural tools are socioculturally situated, the skills developed through acting with and reacting to them are also socioculturally situated, Wertsch (1998) argues. This indicates that skills are context-dependent. Thus, one form of development can be described as the mastering of specific cultural tools provided to the agent by a particular sociocultural setting. Mediated action is historically situated, and this entails that agents and cultural tools have a past and are constantly in the process of further change. A change in cultural tools, for example through technological development, is often a more influential force of development than the enhancement of individuals’ skills, Wertsch (1998) states. When cultural tools change, it becomes clear that this plays a role in shaping human action. The technological development of computers and smartphones has, for example, changed how people go about finding information.

Cultural tools, while empowering and enabling human action, also constrain and limit the actions available. The affordances they provide are often more obvious in the present, Wertsch (1998) notes, adding that the constraints they impose usually become more evident in retrospect, when a new or improved cultural tool has been introduced. Many cultural tools were not designed for the
purposes they are being used for and quite often they have been borrowed from a different sociocultural context than the one they are now used within, Wertsch (1998) states. Consequently, people’s actions are shaped in ways that are not always helpful and even stand in opposition to the intentions of the agent using them. An example related to information literacies and this study is if a teacher were to teach online source criticism using credibility assessment criteria that were developed for offline sources, without adapting them to how the online environment affects the parameters one needs to take into consideration when assessing credibility. The affordances and constraints of cultural tools are in this study for example used in relation to search engines to illustrate differences regarding information seeking methods. Affordances and constraints may also highlight differences in what cultural tools are mastered and appropriated in different contexts.

3.2.1.2 Mastery and appropriation

According to Wertsch (1998), the relationship between agent and cultural tool is characterised by mastery and appropriation. Mastering a cultural tool implies knowing how to use the tool with ease. Appropriating a cultural tool refers to the process of making the tool one’s own. It is not unusual that the mastering and appropriation of cultural tools are intertwined, however, there are cases when they are not. A person can master a tool without appropriating it, for example when they are required to use a certain tool even though they feel resistant to do so. An example that relates to information literacies and this study might be a student learning and mastering a certain source criticism strategy which requires them to use at least two different sources to corroborate information for school assignments, but outside of school the student feels that this is too time consuming and unnecessary, therefore not appropriating the strategy and only using it when it is compulsory. In this study, the mastery and appropriation of cultural tools are used to highlight differences between how information literacies are learned and enacted in the school context compared to other contexts, as well as what impact information literacies learned in school might or might not have on information literacies in other contexts. For example, contextual differences in search strategies might be related to someone having mastered what they learned in school without having appropriated it. The reason for mastering something without appropriating it and using it outside of that context might be related to perceived affordances and constraints or to contextual differences in cognitive value.

3.2.1.3 Cognitive value

Cultural tools are imbued with authority and power. They can be differentiated in terms of their level of cognitive value. A person’s choice to accept or reject a statement is, according to Wertsch (1998), often shaped by the cognitive values ascribed to the cultural tools used within that sociocultural setting. Cognitive values contribute to shaping what knowledge is available and taught in a certain sociocultural context, and what knowledge is not. The same goes for what sort of problem solving is seen as appropriate. Socialisation of knowledge takes place in contexts that are structured by values. Wertsch (1998) illustrates
that the source of authority is the cognitive value of a mediated action, in other words an agent acting with the use of a cultural tool that has a certain cognitive value, and concludes that “by invoking the appropriate cultural tools it is possible for one’s actions to take on a kind of power and authority” (p. 72). The concept of cognitive value is in this study used to highlight contextual differences. For example, the use of multiple sources might hold a higher cognitive value in a certain context which may explain why someone only uses multiple sources in certain situations. Cognitive value is also used to illustrate how information literacies are negotiated through people agreeing or disagreeing with a cultural tool’s cognitive value within a certain context. The high cognitive value of a source selection strategy in the school context might explain why students have mastered it. The perceived constraints of that same strategy or the perceived affordances of another strategy with a lower cognitive value in school, might explain why students have not appropriated it and do not use it outside of school.

3.3 Practices

Drawing on practice theories, the concept of practices is used as a complement to this study’s sociocultural framework. The notion of practices is primarily used to conceptualise information literacies. It is also used to distinguish the school context as a practice to illustrate contextual differences between in and outside of school. However, the concept of practices is not intended to be as prominent in the analysis as the sociocultural concepts since the theoretical focus is on sociocultural theory.

Practice theories are focused around “ways of engaging with the world” (Lloyd, 2010, p. 15). Limberg et al. (2012) describe practices as being “shaped through interaction between tools and people” (p. 107). Practices are social and contextual and therefore ties in well with sociocultural theory. According to Savolainen (2007), practices consist of recurrent and situated activities, interactions between people that are part of a group or community. Gherardi (2009) describes practices as “knowledgeable collective action” (p. 117) and knowledgeable here refers to the ability to competently participate in the interwoven relationships that exist between people, activities, and material artefacts. Practices are in this study understood as more or less routinised doings of particular groups of people across time and space, where both place, social context and material objects are factors. Theories of practice work well as a complement to sociocultural theory since practices can be understood as habitual human activities, actions and interactions within a social, cultural, and historical context that gives them meaning (Lloyd, 2010). Practices each have their own system of beliefs, values, tools, sanctioned activities, and legitimised ways of learning, Lloyd (2010) states. This relates to how, within sociocultural theory, the cognitive values of various cultural tools differ between contexts.
3.4 Information literacies

Information literacies are in this study understood as information-related activities, actions, interactions, and competences. These include seeking or searching for information, evaluating information and information sources with regards to for example credibility and relevance, using information in different ways, interpreting, synthesising and communicating information, selecting or filtering information, as well as encounters with information one has not actively sought out. Information literacies are situated in social and material practices, and they differ between contexts and practices. Sundin (2020) mentions that information literacy research with a sociocultural practice-based perspective often choose to use the plural information literacies since it emphasises the situatedness of information literacies.

Pilerot (2016b) identifies three strands of the information literacy narrative. This study’s understanding of information literacies is related to the research strand where information literacy is seen as situated, contextual, related to various sources, social and collective competences that vary between activities and situations, and that are ongoing processes embedded in practices. The understanding of information literacies that is presented here is from a theoretical perspective and therefore it is necessary to acknowledge that there might be variations in the understanding of the concept as it appears in the empirical data.

Information literacies, as understood from a sociocultural perspective, underline that the tools that are used when people interact with information are an essential part of social practices, according to Limberg et al. (2012). Using Wertsch’s (1998) understanding of cultural tools, this study views the actions and interactions that are part of information literacies as being mediated by cultural tools.

Sociocultural theory’s perspective on learning as socially constructed has implications for the understanding of information literacies within this study. It means that information literacies are viewed as being socially and contextually constructed and learned through interactions with people and objects. Limberg et al. (2012) state that “information literacy implies learning to communicate appropriately within a specific practice” (p. 104). Communicating via the use of cultural tools is a way of participating in social practices, according to Limberg et al. (2012), who describe practices as having specific language usages in connection to concepts, theories and beliefs that are central to that specific practice. This can be related to Wertsch’s (1998) discussion about cognitive values, mastery, and appropriation. Cultural tools related to communication that are approved within a practice hold a higher cognitive value within that practice compared to non-approved communicative tools. By mastering those tools one can assert or gain authority within that practice. Literacies within different practices may, according to Tuominen et al. (2005), have differing views regarding which ways of knowing are legitimate. From a practice perspective, information literacies are “characterised by negotiations of social norms and values” Lundh et al. note (2013, Approaches to norms and values section). Preferable ways of seeking information are then those that are socially and collectively established as legitimate within that practice.
Learning takes place in interactions between people, but also in interactions between people and objects. Therefore, an individual can learn information literacies through interactions with tools such as devices and technologies. Tuominen et al. (2005) state that technological artifacts are intertwined in people’s activities and in people’s connections to each other. Technologies, when viewed as one of Wertsch’s (1998) cultural tools, influence the ways in which social practices are enacted through their affordances and constraints. An online search engine can thus be regarded as a cultural tool that is a part of sociocultural practices which it contributes to shape and reshape through its affordances and constraints.

3.4.1 Infrastructural meaning-making

Search engines are used daily and search engine activities are embedded in various social practices, Sundin (2020) states, adding that search engines are also part of our information infrastructure. Information infrastructure is sociomaterial, according to Sundin (2020), who describes infrastructure as “tangible in various sociomaterial relations … which enable the carrying out of certain functions in society” (p. 374).

Further, Tuominen et al. (2005) state that while the evaluation of information is part of information literacies, so is also the evaluation of technological infrastructures. Information literacies entail understanding the impacts of technological infrastructures as well as their sociocultural and economical contexts. In this study, information literacies are therefore understood as not only relating to information activities but as also encompassing the technological information infrastructure that surrounds and enables these activities. Haider and Sundin (2019; 2022a) discuss the importance of infrastructural meaning-making in relation to information literacies. Infrastructural meaning-making refers to an understanding of the conditions on which information is accessed through information infrastructures such as online search engines and their algorithms. The concept also includes a critical evaluation of the search process. As stated by Tuominen et al. (2005), information technologies are not neutral tools. Search engines are not neutral for several reasons, Sundin (2020) states, mentioning that online search engines contribute to establishing “what knowledge there is to know” (p. 376).

Infrastructural meaning-making is in this study understood as a part of information literacies. In the present study, infrastructural meaning-making is used in relation to online search to highlight certain aspects of how the participants search for information, assess credibility, and motivate their choice of information sources. It is for example used when comparing actively searching for information and encountering information on social media.

3.5 Credibility and cognitive authority

Mansour and Francke (2017) approach credibility assessments from a sociocultural perspective and their understanding of credibility is therefore
suitable for the present study as well. Thus, credibility is here understood as being constructed and negotiated between people and in relation to specific sociocultural contexts. Assessments of credibility are mediated through cultural tools. The concept of cognitive authority was proposed by Patrick Wilson in 1983. The basis for this concept is, according to Mansour and Francke (2017), that everything people know without having experienced it by themselves is mediated to them through others. This means that everyone is, in part, dependent on the accuracy and truthfulness of second-hand knowledge. Mansour and Francke (2017) describe cognitive authority as a cultural tool used to assess credibility. Cognitive authorities are information sources that people deem credible and that they tend to turn to when they want to learn or know something. However, cognitive authority is also limited, they state, exemplifying it with someone being attributed full authority within one sphere and no authority within another. This means that a person might be seen as a cognitive authority only within a specific subject area, or only within a specific context, or only by a certain group of people. An example linked to the present study might be a history teacher that is considered a cognitive authority by their students within the subject area of history. The concept of cognitive authority is linked to the previously mentioned concept of cognitive value. Similar to how cultural tools can have different cognitive values in different contexts, the cognitive authority of a certain information source may also differ between contexts. Cognitive authorities are in this study used to highlight the reasoning behind what information sources are deemed credible and why that might differ depending on context and situation.

Savolainen (2022) states that power is intrinsic to cognitive authority. Based on a conceptualisation of social power as social influence, Savolainen (2022) discusses Wilson’s idea that if an information source is able to influence people’s thoughts by being perceived as trustworthy and credible, then that information source is to be considered a cognitive authority. A cognitive authority does not necessarily need to be an individual person, it can for example also be an institution, such as a certain newspaper, an encyclopaedia, a government agency, or a university library. A credible source is always credible to someone, rather than credible in itself, therefore cognitive authority is an attributed property, Mansour and Francke (2017) state.

An aspect of Wilson’s cognitive authority concept emphasised by Savolainen (2022) is that it manifests as influence. This influence is determined by a person’s competence and trustworthiness. Referring to Wilson, Mansour and Francke (2017) state that “people’s prior held beliefs often set limits to what they can accept as new beliefs” (Theoretical framing section) and this in turn then also limit what they can trust as a cognitive authority. However, people’s beliefs do not only set limits as to who or what can be regarded as a cognitive authority. They can also motivate people to rely on someone or something as a cognitive authority if that source provides information that align with the beliefs a person already holds. The concept of cognitive authority is in this study used to discuss social aspects of information literacies and particularly how credibility is shaped and negotiated across contexts.

Pereira et al. (2013) differentiate between technical, formal, and informal cognitive authority. Formal cognitive authority is related to social and organisational norms within specific contexts, for example professionals,
people with certain credentials, institutions, and hierarchical social positions. Examples of formal cognitive authority related to this study are schools and teachers. Informal cognitive authority is more subjective and related to situations in which people seek opinions, advice, or support.

3.6 Imposed and self-generated questions

Self-generated questions are, according to Gross (1999), characterised by the fact that the person searching for the answer is also the person originally asking the question. This means that the person searching for the answer has full insight into the context from which the question originated. An imposed question is originally asked by a different person than the one searching for the answer. Imposed questions are dependent on the transaction between the imposer, which is the one generating the question, and the agent, which is the person tasked with finding a response. The agent’s success in finding a response relies on the imposer’s ability to transfer the question along with the necessary contextual information and on the agent’s ability to receive and accurately interpret the question.

Many school assignments classify as open-ended imposed questions which require the agent to contribute creative or intellectual energy to successfully answer the question. The student’s ability to act as an agent is affected by, among other things, how comfortable the student feels with taking ownership of the question. As imposed questions, school assignments are probabilistic. This means that the student must return to the teacher with the answer to know for sure whether the answer is satisfactory. (Gross, 1999)

The distinction between imposed and self-generated questions is in this study used when analysing differences between how the participants search for information and how they reason around source selection in the school context compared to other contexts. The concept of imposed questions is used to describe what characterises the school practice.

3.7 Summary

The sociocultural framework is an overarching perspective, which shapes this study’s understanding of information literacies. Practice theories are also drawn upon when conceptualising information literacies and especially when information literacies within the school context are related to the school practice. However, sociocultural theory is the main theory used. It was chosen because it correlates well with this study’s aim of investigating how information literacies are learned and enacted across different contexts. From a sociocultural perspective, social interactions as well as cultural norms and values are taken into consideration when investigating how information literacies are learned and enacted. The concept of cultural tools together with the related concepts of mastery/appropriation and cognitive value are in this study used throughout the analysis of the participants’ information literacies, while the additional concepts are used in relation to more specific themes in the
analysis. Cultural tools are used to relate individual actions to their sociocultural contexts. Mastery/appropriation and cognitive value are used to highlight contextual differences. Cognitive authority is mainly used in relation to the third research question, regarding credibility. Imposed and self-generated questions are used to illuminate contextual differences, primarily in relation to the first research questions regarding seeking, finding, and using information. Infrastructural meaning-making is used in relation to online search, as well as credibility assessments and source selection online.
4 Method

This chapter presents the chosen method for data production and analysis. First, the choice of method is discussed. Then follows a section where the participants and the recruitment process are described, a section on data production including construction of the interview guide and a description of how the interviews were conducted, and a data analysis section describing how the empirical material was transcribed and analysed. There is also a section discussing research ethics and a section discussing credibility and trustworthiness.

4.1 Choice of method

This is a qualitative interview study. Interviews are a widely used method in qualitative research (Bryman et al., 2022). A qualitative method is well suited for the aim, research questions and the sociocultural theoretical framework of this study since it is an interpretivist research approach which, according to Wildemuth (2017), indicates an understanding of reality as “socially constructed by the participants in a particular situation or setting” (p. 115). This relates to this study’s focus on comparing the school context with other contexts. Further, Bryman et al. (2022) state that qualitative methods put an emphasis on social processes and contexts, and the research participants’ interpretations and experiences of the studied phenomenon. The data production method used for this study is semi-structured interviews, which places the study participants’ perspective in the centre. This is also indicated in how the aim and research questions are formulated.

Bryman et al. (2022) describe qualitative research as prioritising depth over breadth. For this study, interviews were conducted with seven participants. Fewer participants allowed for more in-depth interviews as compared to a larger number of more superficial interviews. The results of this study are not intended to be generalisable, but rather to present a more profound understanding through particularisation and detailed descriptions as exemplified by a relatively small number of participants. This study will therefore contribute to a more profound understanding about how information literacies are learned and enacted across different contexts in direct relation to the study participants.

4.2 Selection and recruitment of participants

This study’s participants consist of seven Swedish 18 to 19-year-olds in their final year of upper secondary school. Students in their final year of upper secondary school were chosen because they are graduating this year and preparing to soon start working or studying at university. This means that they can be presumed to have had the opportunity to develop their information literacies according to what is expected within their education. They have most likely made some reflections about their information seeking and critical evaluation of information as part of their education. Research ethics also
influenced the decision to choose participants that are old enough to be legally adults. Bryman et al. (2022) mention that minors are generally not considered to be able to give informed consent and that legal guardians need to give informed consent in their stead while the minors then give their assent. Practically this would have taken more time and ethically minors can be considered more vulnerable as participants, hence it was decided to limit the selection of participants to those that have turned 18.

The participants were chosen based on their availability and accessibility. An e-mail was sent to an upper secondary school teacher the researcher had previously been in contact with for a small survey used for an earlier course in the master programme. Included in the e-mail was information about the study, its aim and purpose, and how the interviews would be conducted (see Appendix B). The e-mail was also sent to the principal of the school for approval of both the recruitment process and conducting the interviews at the school. The teacher then asked if the students were interested in participating, rather than the researcher contacting them directly before interest was indicated. The students were also informed that the interviewer would like to be able to do audio recordings of the interviews. When some students had agreed to be interviewed the teacher booked a study room for the interviews and scheduled the interviews with the students. All interviews were conducted at the school, some during class (with teacher permission) and some during the students’ free periods.

Three of the participants are female, and four are male. They all go to the same upper secondary school, and they are all in the Aesthetics programme, which is a university-preparatory programme with five different specialisations. The specialisations are art and creative design, dance, aesthetics and media, music, and theatre. This study’s participants belong to different specialisations. Focusing on aesthetics students imparts an interesting perspective since the Aesthetics programme includes both more traditional courses and courses unique to that programme. The unique courses are related to more creative subjects, and it might be assumed that the students choose this programme because they have a personal interest in those subjects. This makes for an interesting comparison between the school context and contexts outside school since it affects examples given in the interviews and might link some school assignments to personal interests that are a part of the participants’ activities outside of school.

4.3 Data production

Empirical data was produced through semi-structured interviews. This type of interview allows for more flexibility and open-ended questions than a structured interview, while at the same time providing some structure, which an unstructured interview would not. Since it was clear what the intended focus points would be during the interview, some structure was needed to ensure specific issues related to the research questions were brought up for discussion. Semi-structured interviews allow for a balance between necessary structure and the flexibility to explore the topics according to the participants’ perceptions, Wildemuth (2017) states. Open-ended questions and probing enable the
interviewer to focus on the participant’s perspective. It makes it possible to add follow-up questions or change the order of questions according to where the conversation leads, to ensure in-depth answers through probes or asking for clarifications. Open-ended questions are well suited for qualitative interview studies, according to Bryman et al. (2022), and they are adequate for this study since it focuses on the participants’ perspectives.

4.3.1 Interview guide

The themes and questions in the interview guide were based on the study’s aim and research questions. It was divided into themes and each theme include a set of questions. This is a common interview guide structure according to Bryman et al. (2022). The main themes are related to searching for information, credibility assessments of both information and information sources, and learning. How the participants perceive any differences in their information literacies between the school context and other contexts is emphasised throughout. The intention behind how the questions were formulated was to use as context neutral wording as possible, except when asking specifically about only the school context. Terms traditionally used in information literacies education, such as source criticism, information searching and search techniques, were therefore avoided to ensure the focus was equally on both the school context and other everyday life contexts. The interview guide was tested before being finalised and some small changes were made in adding a few optional follow-up questions. The full interview guide is included in Appendix A.

The first section of the interview guide has a few broad open-ended questions that ask the participant to tell the interviewer about certain situations using recent examples. If the participant gave an example from a school context the follow up question was then if they had an example from outside of school as well, and vice versa. Depending on how detailed the answer was, some questions in the next section could optionally be excluded. Less specific and less formal questions are preferable to start with since it helps the participant relax into the situation. Bryman et al. (2022) call these introducing questions.

4.3.2 Conducting the interviews

The interviews were conducted in Swedish since that is the participants’ first language. Ethical considerations related to conducting the interviews are discussed in the Ethics section. The interviews lasted 40-60 minutes. During the interviews the interview guide was used but the order of the questions changed between interviews. If the answer to one question touched upon the theme of another question, then that question was asked next since that made the interview flow more naturally. Questions that happened to be answered within the answer to another question were excluded when the interviewer deemed that the question had already been answered sufficiently. The wording of certain questions was changed when it became apparent that another way of phrasing it made it clearer for the participants. It was noted that generally, if
the interviewer neutrally commented on the answer, the participant elaborated further without any probing or follow-up questions. That said, follow-up questions and probes were used throughout. What Bryman et al. (2022) call interpreting questions were useful to check whether the interviewer’s interpretation was correct and usually lead to the participant adding more details.

Some questions were added along the way when one or more of the participants mentioned something the interviewer found interesting for the study but that was not included in the original questions. For the same reasons, some of the follow-up questions that had not been planned were also added along the way. One example of this is that when asked about what they had learned about searching for information and evaluating information outside of school several participants naturally started talking about when and how they discuss credibility assessments within the family or among friends. This was added to the interview guide as a question. In summary, semi-structured interviews worked well, providing a balance between pre-planned structure and the flexibility to adapt, change and add questions.

4.4 Data analysis

The audio recordings of the interviews were transcribed in full and then printed out for analysis. During an initial readthrough of the material, passages that either illuminated a research question or related to the theory were noted and possible themes were added to a preliminary list.

The first part of the analysis was empirically based, guided by the research questions, and the material was read for a second time with the study’s aim in mind and the participants’ statements were compared to each other. The material was categorised according to similarities and differences between the participants’ statements. Recurring themes were noted, including graded school assignments, credibility and trustworthiness described as a feeling, teachers as information sources, Wikipedia, credibility in relation to social media, book sources, search engines and algorithms, how to search efficiently, situations when you choose to not find out about something, and discussions about who is responsible for the credibility of information. Besides the list of potential themes, each theme got its own list with relevant text snippets from the participants. The themes were sorted according to the categories in the interview guide, namely searching for information, credibility assessments, and learning, along with an added fourth category called social situations/communication. Contextual similarities and differences were noted for each theme.

The third readthrough was guided by the study’s theory and the material was then sorted into categories that aligned with certain theoretical concepts. The themes were, among others, cognitive authority, infrastructural meaning-making, mastery/appropriation, cognitive value, imposed questions, credibility evaluation criteria as a cultural tool, social aspects of credibility, and source selection strategies as cultural tools. Again, each theme got a list of comments linked to different participants. This third readthrough was especially
worthwhile since reading from a theoretical perspective highlighted things in the material that otherwise might have gone unnoticed.

These two sets of themes were then compared and where there were overlaps some themes were combined into pairs or groups of themes. A main focus was similarities and differences between the school context and outside of school contexts. All themes were then sorted according to which research question it was related to. Sidenotes were made on where the material related to subjects from other studies. Once a final set of themes was decided upon, each theme got assigned a colour and the printed transcriptions were colour coded accordingly. The themes were sorted into three overarching categories, each relating to one of the research questions. The information seeking category included the themes: ways of finding information (including Google, interpersonal, books, ChatGPT, YouTube), active search/encountering information, obligatory search/imposed questions, and not searching/giving up. The source selection category included the themes: source selection in school, Wikipedia, source selection online (including search engines, algorithms, infrastructural meaning-making), and source selection outside of school. The credibility category included the themes: school/grades, credibility assessments, cognitive authorities, and social aspects.

The passages in the empirical material that were chosen to be used as quotes were translated into English. Translations are to a degree subjective in nature and for this to affect the analysis as little as possible, the original quotes were used during the analytical process and when writing the first draft. When the quotes were translated, accuracy was emphasised, however, the character of the participant’s natural spoken language was also kept as close to the original as possible. Some participants used English expressions even though they were speaking Swedish, and these were always kept exactly as they were. Consistency was also emphasised, and the original quotes and translations were compared to ensure that when the same Swedish word was used in the same sense, it was always translated into the same corresponding English word.

4.5 Ethics

Several measures were taken to ensure the ethical considerations of informed consent and voluntary participation were met. A researcher should never pressure someone into participating, Bryman et al. (2022) state, and therefore the teacher first informed students about the study and told them that if they were interested, they could let the teacher know. The students were informed that the interviewer would like to audio record the interviews. The interviewer did not communicate with anyone before they had decided to participate. Before starting the interview, the participants were given some introductory information which included a brief explanation of the study’s aim and purpose. The interviewer also encouraged the participants to ask for clarification if needed.

The participants signed written consent forms before the interviews. This was especially important since the interviews were audio recorded. They were given time to read through the consent form before signing and were also
verbally informed of the main points of the contents and the interviewer also explicitly asked to ensure that they did not mind being audio recorded. The consent form is included in Appendix C. This procedure correlates to Bryman et al. (2022) who mention that the notion of informed consent includes informing participants about the research purpose, assurance of confidentiality, possible risks and benefits involved, and their right to withdraw from the study at any time. Since all participants were eighteen or nineteen years old and thus legally adults there was no need for consent from any legal guardians.

The participants were guaranteed confidentiality and measures were taken to ensure their identities were protected. Instead of using names, the participants are referred to as P1 to P7 and the gender-neutral pronoun they/them is used for all participants. Bryman et al. (2022) discuss the risks of participants being identified even though pseudonyms are used, since qualitative research often offer detailed contextual information. The teacher is only referred to as ‘the teacher’ thus counteracting the risk of identifying the participants through their teacher. The name of the town they live in and the school they go to is not mentioned. Their teacher and classmates know which students were interviewed, however, they do not know which participant corresponds to which number, and personal details such as names of friends and teachers, as well as details about home situations are excluded. Since all quotes used are translated into English, the risk of identification through speech pattern or word choices is also minimised. When the risk of harm was analysed, the main factor considered was related to consequences if the participants were to be identified. This was taken into consideration when choosing what quotes and examples to include in the study.

In their discussion about determining harm, Bryman et al. (2022) mention short-term anxiety and embarrassment. Since participants might experience this if they admitted to doing something in a way they perceived not to be the way things ‘should’ be done, the interviewer emphasised that the participants would not be judged, before starting the interview. The introduction ensured them that whatever they answered would be fine and that this was not about whether they do things ‘the correct way’. This was considered especially important since the interviews were conducted at school, an environment in which the participants are used to being assessed and graded. Positionality, defined by Bryman et al. (2022) as the impacts social and structural contexts have on the balance of power and authority within interpersonal and institutional interactions, is therefore relevant for this study in relation to the school context. Another possible concern that the participants might have, which is also related to positionality, is regarding the teachers and whether the content of the interviews might affect the participants’ grades if a teacher were to read the material. They were therefore assured that the teachers would not have access to the empirical material and that by the time this thesis is published they have already graduated.

### 4.6 Trustworthiness

The four criteria proposed by Lincoln and Guba in 1985 are recommended by Wildemuth (2017) to evaluate the trustworthiness of qualitative research. The
criteria include credibility, dependability, confirmability, and transferability. Credibility relates to whether a study’s findings adequately represent reality. Dependability refers to whether other researchers are able to repeat the study. Confirmability is related to the extent to which a study’s findings can be confirmed by others reviewing the data. Transferability refers to the extent to which a study’s findings can be applied to other contexts and situations. (Wildemuth, 2017)

These four criteria are explained in more detail by Shenton (2004) who refers to Lincoln and Guba when listing activities that can enhance the credibility of qualitative research. The present study utilised some of these to improve credibility. Well established research methods were used. Tactics to ensure honesty relate to research ethics since they include ensuring voluntary participation, ensuring participants that there are no wrong answers, and emphasising the interviewer’s independent status to ensure participants that their grades would not be affected since the teachers would not have access to the material. An opportunity for peer scrutiny was given during the opposition seminar. Member checks were conducted during the interviews, where the interviewer continuously asked what Bryman et al. (2022) call interpreting questions to ensure that the participants’ statements were correctly interpreted.

Transferability inferences cannot be made by the researcher of a study since the researcher only knows the context of their own study, not all contexts the findings could potentially be transferred to. Therefore, Wildemuth (2017) emphasises that providing detailed descriptions of methods, participants, data, and the studied context is important to ensure that other researchers can determine transferability in relation to their studied contexts. Dependability should, according to Shenton (2004), be addressed by reporting the study’s processes in rich detail which also provides information that enables the reader to assess whether proper research practices were followed. Confirmability can be improved by providing detailed methodological descriptions, Shenton (2004) states, adding that these descriptions enable the readers to determine whether a study’s results can be accepted. Furthermore, Wildemuth (2017) mentions that confirmability may also be checked by comparing a study’s findings with those of similar studies. The present study addresses dependability, confirmability, and transferability by giving detailed descriptions of methods for data production and analysis, describing the participant selection process, how the interviews were conducted, and by providing the full interview guide in Appendix A.

---

1 The opposition seminar is a part of the Master’s thesis course where fellow Library and Information Science students act as opponents.
5 Results

In this chapter the results are presented. The three main sections relate to one research question each, however, there are slight overlaps to avoid repeating the same themes. The first section is related to information seeking, including ways of finding information and obligatory search. The second section is related to source selection, including source selection in school, Wikipedia as a source in different contexts, and Google’s search result list. The third section is related to credibility and includes the relation between credibility and grades, credibility assessments, cognitive authorities, and social aspects of credibility.

5.1 Information seeking

There are both similarities and differences in what contributes to shape the ways in which the participants seek, find, and make use of information in the school context compared to other contexts. In the school context information seeking mainly consists of active obligatory search related to imposed questions in the form of school assignments. Outside of school more information is passively encountered with social media being a central part of this. Since information seeking is usually not obligatory outside of school, the participants more often have the options to give up searching or to not search at all. Regardless of context the choice of how to go about finding out about something to a large extent depends on the anticipated time and effort required as well as how likely it is for the information to be easily understandable once found.

A prominent theme in the participants’ descriptions of their information seeking is that actively searching for information is something they do more in a school context, however, they also describe searching for information for a variety of reasons outside the school context. In general, they tend to place less importance on the information they search for outside of school while also mentioning that in situations when their non-school related information searching is important, they tend to search for it the same way they would in school. From the participants’ accounts it can be discerned that most information they encounter outside of school are things they did not actively search for and that it primarily comes from social media. P1 described the difference:

In a school context it’s more, like this, that I know what I’m searching for, then it’s more specific things I can look for, while outside [school] it’s more like this: ‘Oh, well, now I know this’ but that’s only because I was on Instagram.

Social media use is a significant difference between the school context and other contexts in the participants’ everyday lives since it is firmly related to
spare time activities. Search engines are linked to active search and social media is not. This implies that the sociomaterial difference between using a search engine as a cultural tool to actively search for information and using social media as a cultural tool where information is encountered is central to the contextual difference between how the participants find information in and out of school. The quote from P1 also points to another contextual difference, namely that information seeking tends to be more specific in school. This could be related to how school assignments require active search and usually have specific instructions on which the search for information can be based.

There is sometimes a social aspect to searching for information. P4 mentioned looking up more things at home because “it’s fun to have facts because that’s always a good conversation starter”. P6 mentioned looking up facts to prove that they are right or to “win arguments” they have with their friends. In both situations, searching for information becomes part of the social interaction. Searching is outside of school mainly described as curiosity based. Searching for information in school is mostly related to school assignments and fact-finding, while social aspects of information seeking are more prominent outside the school context.

5.1.1 Ways of finding information

Google and interpersonal sources such as teachers, family, and friends are central in the participants descriptions of how they go about finding information. For example, P4 stated that “if I want to know something quickly then it’s Google” while P3 mentioned that “the easiest [way] for me is probably to ask a friend, hope that person knows and can give me a quick explanation that I can understand”. This indicates how the ability to understand the information once found is not taken for granted and some participants believed that they had a better chance of comprehending the information if it came from a person rather than Google.

The participants reasoned around when to use Google and when not to. Google is generally described as preferred because it is a quick and easy way to get information. Online search engines’ affordances such as speed and availability are mentioned. However, being able to access huge amounts of information is not only seen as an affordance. The amount of information available through Google is also described as overwhelming, too much to go through. In the interviews it was common for texts found through Google to be described as too long and sometimes difficult to navigate or comprehend. P3 mentioned preferring interpersonal sources for this reason, stating that a person often gives a more direct answer than a search on Google does:

On Google you often get, you almost always get an answer, but it’s often very, what should I say, if you go on certain webpages then it’s always such an intellectual answer, so many words instead of what could have been a five word sentence, so therefore I think it’s usually just easier to talk to a parent, friend, who often gives a correct, direct answer.
The tension here lies between P3’s expectations of Google and the actuality of what Google does. Google, being an online search engine, provides information that matches the query, but the searcher then has to choose a source and read it for themselves. Google does not answer questions in the same way a person might and the information sources in the result list are not written specifically to answer the searcher’s question the same way a person directly answers the question asked in a conversation.

A rather new alternative to Google has become P2’s new favourite way of finding information for the same reason P3 prefers interpersonal sources. P2 states that “now when there is ChatGPT and stuff, AI and stuff, you can ask any questions you want, and you get a direct answer directly” and therefore P2 has started to use ChatGPT instead of Google. When asked why that is, P2 answered:

I don’t even know, it’s probably not even that much faster [to use ChatGPT] but it’s, you don’t have to read between the lines like you usually do on Google, often when you search on Google you get a huge amount of information all at once and then you have to read like a whole section to understand or to find that tiny sentence you want for your answer but with ChatGPT, this AI stuff, then you just ask your question exactly like what you are thinking of and the first, like, the first result you get is exactly what you want.

In general, the participants seem to think that one of Google’s greatest affordances is how quick it is and the reason P2 now favours ChatGPT is not about the speed. From the interviews it can be discerned that what P2 describes here is generally seen as one of Google’s constraints, similarly to P3’s example above. The one affordance that ChatGPT has and Google does not, in P2’s opinion, is that ChatGPT gives direct answers to questions rather than simply retrieving and ranking the information.

When comparing Google with interpersonal sources or newer AI solutions such as ChatGPT the reason for choosing against Google is that Google is considered to require more effort in going through and reading the retrieved information. However, when comparing Google with using books or other printed non-digital sources, participants commonly prefer Google precisely because it requires less time and effort to go through and read the information Google retrieves. It is clear from the interviews that books are mainly used for school if they are used at all. When it comes to books there is thus an evident contextual difference in the participants’ reasonings around different ways of finding information. There is also a difference between what the participants prefer and what they believe that their teachers prefer when it comes to using books. P1 for example mentioned that “you get a book [from your teacher] but you don’t look in the book, you google anyway”. Some participants, like P1, claimed that they avoided using books whenever they could, even if it went against the teacher’s recommendations. Other participants described that they sometimes used books in school, when prompted by a teacher.
Participants mentioned YouTube as an alternative to either Google or interpersonal sources in some situations. P2 stated that: “If I can’t be bothered to look for information then I usually just search for some YouTube-video and listen to that instead, there is information there too.” Listening is, according to P2, less of an effort than reading. Searching for a YouTube-video containing the information needed is not considered to be a way of looking for information. Perhaps this is because YouTube as a platform is more related to activities outside the school context and therefore not perceived as connected to schoolwork in the same way. P6, on the other hand, described using YouTube instead of Google explicitly for finding facts for a school assignment in documentary-style videos:

What is nice about YouTube videos sometimes is that if it’s a documentary they can have so much information, facts that no one is using, but it’s pure gold … I use documentaries that people have made by themselves, for science class, an assignment about the evolution of the whale, then I used a video [on YouTube] as a source.

Here searching on YouTube is viewed as information seeking and conceptualised as fact-finding. The motivation is not that P6 did not bother to search on Google, but rather that YouTube is preferred since that means P6 uses a source that their classmates are unlikely to use. In the interview, P6 explained that they see this as positive for the teacher’s judgement since it proves that P6 has worked independently on the assignment. The way P6 chose for finding information was thus directly influenced by the school context. Using YouTube to find information instead of Google led P6 to a different source than their classmates. This was used as a cultural tool to communicate to their teacher that they had worked independently. It does not appear to be uncommon for the participants to use platforms they mainly use for entertainment as sources for school assignments. P5, for example, used Spotify as a source:

We had a school assignment where we had to look up music from the 70s so then we looked at, we searched for it on Spotify, ‘best of 70s music’, a playlist like that, made by Spotify and then we looked through it and found good songs that apparently then were released during the 70s.

P5 does not mention the reason why Spotify was their first choice. One possible explanation might be that Spotify is firmly linked to their music consumption and in this situation the assignment was for their Music course. The overlap between the school context and music as a hobby outside of school might have been a contributing factor.
5.1.2 Obligatory search

School assignments are often open-ended imposed questions. P6 had trouble with a school assignment in a way that exemplifies the difficulties with imposed questions. In their history class they had to analyse the movie Titanic and P6 did not understand the questions and thus did not know what they were searching for:

It was a movie analysis but at the same time not a movie analysis and the questions were very difficult, as in weirdly formulated. … You are supposed to search for some kind of answer and like that I didn’t know what it was I was supposed to, usually you get some keywords that you can write and search for and read through an article or something like that but that was really, then I didn’t know what I was supposed to do, it’s probably the most frustrating assignment I’ve ever had … I did not understand what the teacher wanted.

In this situation the teacher imposing the question had not successfully transferred the question and its contextual information in a way that ensured that the participant was able to receive and interpret it. P6 describes their usual strategy and how, in this case, it did not work. Part of the problem is how the questions are formulated. P6 normally finds some keywords in the question that they then use as a query, which indicates that the assignment’s instructions are used as a cultural tool when searching for information for the task. In this case P6 does not know what keywords to use and thus has trouble formulating a query. P6 expresses that they do not know what they are looking for and therefore do not know whether an answer has been found.

Characteristic for school assignments is that the students do not have the option to simply give up when it is difficult to find information. The participants reflected upon the fact that in school searching for information is obligatory, concluding that this is one of the ways in which information seeking is different in the school context. When comparing searching for information in and outside school P5 stated that:

I look things up when it’s for school, because then I have to, you know, have the information, otherwise you sort of tend to think ‘yeah I’d like to find out about this’ and then maybe you never do it, or you look it up and don’t find anything immediately so then you’re like ‘whatever’ … so it’s a bit more, indifferent, in my spare time, because, the information isn’t that important then.

In their spare time P5 has the option to give up searching or to not search at all since the questions are often self-generated. In school, when the questions are imposed and part of mandatory assignments, those options are not available in the same way. The self-generated questions P5 describes are more often rooted in curiosity rather than a pressing need for certain information, and therefore deemed less important.
The participants also described various situations where it was difficult to find the information they needed for a school assignment. Unlike P6’s example where they did not know what they were searching for, the following example is from a situation where the participant knew exactly what information was needed for the assignment:

P5: It was an art exhibition we had to find out about for Culture and Society, this course we have, it was an art exhibition that I was going to do an oral presentation about … and I didn’t find any, absolutely no articles at all about it from 2013, the year of the original exhibition, only from, like, after 2017, and that was very frustrating …

I: Did you find enough information for your presentation then?

P5: Yes, but I had to change the presentation so instead, like this, here are the exhibitions from after 2017, these sort of reproductions of it, so that was, sometimes you don’t find things.

Here the participant takes ownership of the imposed question and changes the focus of the assignment. After concluding that the needed information is nowhere to be found, P5 finds a way to work around the problem since giving up is not an option. Using creative and intellectual input P5 changes their interpretation of the imposed question slightly, adapting it to what they now know about what information is available.

When the participants mention not finding out about something it is usually for one of two reasons. Either they decided not to search for it at all or they could not find the information and gave up their searching. Deciding not to search is firmly related to outside of school contexts. The decision on whether to give up is often dependent on how important the information is in that situation. P5 describes how the device used to search on may also influence this:

P5: If I had used my phone instead of my computer when I search for information about my camera then I would have given up much sooner, but now I searched on my computer, the one I was trying to transfer the photos to, and then I actually really tried to find it, because it had to be there somewhere.

I: Did you find what you were looking for?

P5: No, I couldn’t solve the problem, I never found any information about how to do it.

In this situation, P5 spent a lot of time exhausting all options before giving up. Part of the reason for putting in that kind of effort is being attributed to using a computer instead of a smartphone. P5 mentions that they relate the computer to schoolwork and therefore automatically search more seriously when using the computer. This indicates how material aspects such as devices can affect the outcome of online search.
5.2 Source selection

The participants’ reasonings regarding source selection relate to in and out of school contexts in various ways. The most prominent contextual difference regarding source selection is how carefully the participants select their sources. Outside of school it is not always considered to be important to select a good source, in some situations “any source will do fine”. In school, norms and values within the school practice, teachers’ preferences, and wanting good grades are highly influential in how the participants reason around source selection. Usually, more importance is placed on source selection in school. However, when the information is considered especially important the reasoning around source selection outside of school becomes more similar to the school context. Source selection on Google’s result page is described in the same way across contexts. Text snippets guide selection along with Google’s ranking, however, the participants’ own judgement seem to be more influential than Google’s ranking. Regardless of context, infrastructural meaning-making is mostly absent from the participants reasonings around source selection, in the sense that they seem to be unaware of how search engines work and have not considered that relevant for their source selection.

5.2.1 Source selection in school

Source selection strategies used to optimise the chance to get a good grade is a central theme in the school context. These strategies tend to be based around perceived norms and values within the school practice and the teachers’ preferences. P4 described how they adjust their source selection within the school context:

P4: At school I must find other sources … the school’s favourite sources … and for big essays you have to use many more sources than you do when you are just quickly looking up something at home.

I: So what you are saying is that you adapt according to the teachers’ source preferences?

P4: Yes, exactly!

In general, the participants seem to favour sources that they know are considered legitimate within the school practice. P4 is clearly aware of what sources have the highest cognitive value within the school context, referring to them as the school’s favourites. At the same time, P4 distinguishes between the school’s favourite sources and P4’s own source preferences. P5 describes how “there are these standard webpages that you look for when you are searching for something”. These standard pages are by P5 considered to be cognitive authorities. While these standard sources are mainly used for school, a common theme when discussing source selection is that sources that are mainly
used in school are also used outside of school when the information searched for is considered especially important.

Using multiple sources seems to be one of the most common source selection strategies in school. In general, participants find that using multiple sources is preferred within the school practice. P1 emphasised this:

Obviously, you want to get school assignments done but you’ve also got to, like this: meticulous, well executed, and preferably have a lot of sources because then [the teacher] knows that you have worked instead of if you take everything from one source, then it might be like this: ‘Have you copied a lot? Have you looked for sources?’ so it’s important that you have a lot of sources in school because then it shows that you have tried and that you have worked and the teacher can see that OK this person is source critical, then they can judge you on that as well. At home no one sees whether I’m source critical or not.

In P1’s reasoning there is an awareness of the fact that the assignment will be judged by a teacher and the reason for using multiple sources is in part to demonstrate in which way the assignment has been completed. Using more sources is then a way for P1 to communicate to the teacher that they have been thorough and worked hard. P1’s reference list is here used as a cultural tool with a high cognitive value since P1 assumes that the teacher places a value on the number of sources used. When mentioning that no one sees their references at home, P1 illustrates how the reference list as a cultural tool holds very different cognitive values in the school context compared to at home. P1 is concerned with how the teacher might interpret their work and thus assumptions about the teacher’s opinion have an impact on their information literacies.

### 5.2.2 Wikipedia

A tension can be discerned between the participants and their teachers when it comes to using Wikipedia as a source. Whenever Wikipedia was mentioned, it was as if the participant felt the need to justify their use of Wikipedia as a source, regardless of whether they referred to using it in a school context. The participants tended to automatically motivate their use of Wikipedia in a way that they did not do for any other sources that they mentioned. P6 motivated their Wikipedia use with arguments that have a high cognitive value within the school practice:

Anyone can lie on the internet and people may believe it, that’s why I like Wikipedia, it, what they have … they show several different webpages and have footnotes and all that while most other webpages don’t have that.
The participants stated that they have learned in school to always use several different sources and to always reference their sources. Here P6 mentions that Wikipedia does the same. P2 mentioned only using Wikipedia outside of school:

In my spare time I might search more on Wikipedia than I would in school, so it’s, usually the teachers always say that you should avoid Wikipedia, so, well, it has become a habit I guess, to skip the top link, which is Wikipedia and go on the next one.

Here P2 mentions that avoiding Wikipedia has become a habit within the school practice. The school practice’s preferred source selection has been mastered but not appropriated since the participant only avoids Wikipedia when forced to. Within the school context a habit has formed that differs from other contexts, illustrating that P2’s information literacies differ across contexts.

Some participants still used Wikipedia in school, however, they adapted their use of Wikipedia to the school context. Since they preferred to use Wikipedia outside of school where Wikipedia was considered to be “credible enough”, they started their search for information in school on Wikipedia and then used Wikipedia as a cultural tool for credibility. A source was deemed credible if its information corroborated what was stated on Wikipedia. Interestingly, P5 stated that “it’s kind of ironic but if I check Wikipedia’s references then, the source I click on there, that one I usually don’t trust, but Wikipedia feels a lot safer, which is like hmm.” P5 still trusts the information on Wikipedia even if they do not find the sources Wikipedia is referencing to be credible. This, combined with Wikipedia being used as a tool to assess credibility, might suggest that some participants regarded Wikipedia as a cognitive authority, despite stating an awareness of Wikipedia not being entirely trustworthy. It is clear that Wikipedia’s status as a source is complex, and especially so in the school context.

5.2.3 Google

When discussing source selection online, Google is prominently referred to as a source through statements such as “at home I mainly use Google as my source”. However, the participants’ descriptions of their source selection processes commonly include choosing a source from the search result page, which then makes that website the actual source. On the other hand, there are also mentions of using the information on the result page as the source:

P7: I didn’t really click on any of the links or so, but rather I sort of used the search result feed for scrolling through and getting an overview of what all of them are saying.
This means that in a way the search result page on Google becomes P7’s source and that P7 might not know what the website the text snippet comes from looks like.

Infrastructural meaning-making involves taking into consideration the way in which the information was accessed and that includes critically evaluating the search result page and the ranking of the search results. A central theme whenever this was discussed are statements of never looking beyond the first result page. The main aspect guiding the source selection on the result page is generally the text snippets below each result. Reasonings around top and bottom links are also central, with statements about how a link being at the top of the list is not enough in itself for deciding to choose that source, the website also has to seem credible and relevant. P5 explained it this way:

I don’t think that the top link is the best one, well, usually I read the heading and a little of what it says in those little texts you get and then that’s what decides what I click on.

The participant’s own judgement is the deciding factor, the decision is not left entirely up to Google’s ranking. This, and similar examples, indicate an infrastructural awareness in the sense of being somewhat critical towards Google’s ranking system. Contradictory to this, the participants seem to be unaware of how search engines and their ranking systems work.

The participants are familiar with the algorithms that control their social media feeds. However, when asked about algorithms in relation to online search engines the general reaction was a surprise at the fact that search engines such as Google are run by algorithms, as exemplified by P2:

P2: I’ve actually never really noticed any kind of algorithm on Google.
I: Algorithms rank your search results, for example.
P2: Really? I never thought that algorithms would be relevant there, like, there aren’t any pop-up recommendations when you write or anything like that.

The notion of algorithms seems to be firmly tied to personalised recommendations and since the participants do not think of Google’s search result list as such, then algorithms tend to be considered irrelevant in that context. P1 described how they do not need the algorithms’ help when searching on Google:
I don’t really notice [algorithms] in an information seeking context, because it’s very specific things that I google if I’m trying to find some specific information and then I don’t really need the algorithms to help me, I don’t need them to show me more of the same because once I’ve found that information then I’m done with it.

Algorithms are understood as something that gives you more of what you have looked at and liked and therefore unrelated to actively searching for information on Google since that is usually information they only need to use that one time. Not connecting algorithms to online search engines as well as stating that they have not really considered how search engines retrieve and rank the search results indicate that infrastructural meaning-making in the form of an awareness and understanding of the way in which information is accessed through search engines is not a central part of the participants’ information literacies. Therefore, it might be assumed that infrastructural meaning-making is not a part of the participants’ source selection processes or their credibility assessments. A contributing reason for this could be that the participants have not been taught anything about how search engines or algorithms work in school and thus are more aware of what they can see for themselves outside of school which tend to be mainly related to algorithms on social media.

5.3 Credibility

The participants’ credibility assessments vary depending on context, however, there are also similarities. Credibility assessments are seen as important for different reasons in school compared to other contexts. Outside of school participants do not always bother to assess credibility. It is sometimes considered acceptable to use sources deemed uncredible outside of the school context. Credibility assessments in school tend to be more explicit and described as based on clear criteria while credibility assessments outside of school seem to be more implicit and often described as a feeling. There does not appear to be any cognitive authorities in contexts outside of school that correspond to the teacher’s status as such in the school context. There are clearly social aspects of credibility assessments regardless of context since credibility is shaped and negotiated collectively.

5.3.1 Credibility and grades

When comparing the school practice to the rest of the participants’ everyday lives it becomes clear that there are certain characteristics that differentiates the school practice from other practices. The school practice is imbued with explicit and implicit norms, rules, and values that the participants, as students, have to navigate. Much of this stems from the fact that the students are in school to learn, and the teachers’ role includes giving them assignments that are then judged and graded. The school practice thus impacts the participants’ information literacies in various ways, credibility being one of them. PI described the difference in two statements that somewhat contradict each other.
On the one hand they state that it is probably more important to assess the credibility of information outside of school since “in school it’s like this, if I’m wrong about something, then someone like my teacher can say that this is wrong, fix it, [outside school] no one does that”. This indicates that the teacher becomes a fail-safe, guarding against false information. However, while P1 states that assessing credibility outside of school is important, they also mentioned that:

Outside school you might not be as critical because you feel like ‘I can’t be bothered’ but I know, like I have the ability to be critical, but then I don’t, it’s like an active choice that well I’m not in school, can’t be bothered, but often you are a bit critical outside too, well, you try to be at least.

Outside of school, critically evaluating information is not considered to be worth the effort and while P1 finds credibility to be important outside school, being outside the school context is also the reason they give for actively choosing not to be as critical towards information. P1 knows that they have the ability to be critical, since that is something they practice in school. That ability is still there outside of school, however, there is usually not enough motivation to utilise it. One explanation for this might be that grades are a big motivation in school. Grades are a central theme in the interviews whenever the participants discuss the school context and specially in relation to credibility.

It is clear from the interviews that the participants are very aware of what might impact their grades and what their teachers’ preferences might be regarding source evaluation. Participants tend to link not having credible sources to the risk of failing a course, as exemplified by P1:

You have to have a good source otherwise you can just throw out your work because you will be wrong, you will get a big, like, bad grade, like F, if you reference an unreliable source, so you are kind of forced to find good sources.

This is not about credibility only for the purpose of ensuring that the information is accurate, it is more about credibility being used for its cognitive value and good sources that are sanctioned within the school practice are used as cultural tools to get a good grade. Further, the participant uses quite strong wording, when saying that they are forced to use good sources. This indicates that this is not done entirely out of free will, but rather because it is the only way to get the grades they want. Thus, P1 has mastered using what is considered good sources within the school practice without appropriating it.

It is expressed that in school the stakes are higher, since applying to university, future employment and successful careers as related to their grades which are linked to critical evaluation of sources in school. Participants describe a clear difference between the school context and their spare time. P1 strongly connects credibility assessments to school and state that outside school they
“miss all those steps [to evaluate credibility] that I go through in school because, I suppose I disconnect that part of myself when I’m at home.” Generally, participants mention being more thorough in their credibility assessments in school. Interestingly, even when the participants described situations outside of school when they claimed that they did not assess the credibility of information they generally still had some level of awareness of whether the source was credible or not. P1, for example, stated:

> When I’m home and I do something then I might think ‘OK, this source will do fine’ I can’t be bothered to check the source and that, and even if I end up on a website that’s, like this, this is probably not right at all, but you don’t really have the energy to be as source critical.

P1 states that they chose not to make the effort of assessing the credibility of their chosen source, however, they still state that they are aware that the chosen website is most likely not a credible source. Some level of credibility assessment must have been made to know that. It was common among the participants to conceptualise credibility assessments only according to how they are expected to assess credibility in school, and therefore other less thorough credibility assessments outside of school sometimes seem to have gone unnoticed.

Furthermore, credibility is sometimes even considered to be more important in the school context than other contexts. P3 stated that “it’s a little more important to be credible and true in school and questions for school [assignments] since then I’m going to be graded and judged on it.” Being judged and graded is one of the most prominent reasons mentioned as to why the participants do things differently in the school context.

### 5.3.2 Credibility assessments

When asked about what sources they find credible, participants tend to immediately think of examples related to the school context. It is clear that they have spent considerably more time actively reflecting on the credibility of information in school. When asked what they take into consideration in their credibility assessments the participants mentioned several factors that can be related to checklists of general source criticism criteria. This connection is confirmed when discussing what they have learned about how to assess credibility in school. These criteria include currency, author, plausibility, visual factors, authority/credentials, and bias/objectivity. Participants emphasised that the most important steps in their credibility assessments are using multiple sources and comparing these sources. This is also perceived as the credibility aspect with the highest cognitive value within the school context. When sources disagree and state conflicting information participants mention that they look for the majority and that the version stated by most sources is then deemed as the most credible. Even when sources agree it is still seen as beneficial from a credibility perspective to use multiple sources, as exemplified by P6:
The most important thing, I think, is to use many sources. Sure, one source might have all the facts that you need, but maybe you can use another website as well, and even if they have exactly the same facts then it’s still better that you have two because then you have more proof that they are legit.

More sources equalling higher credibility is central to the participants’ descriptions of what they have learned in school.

Another noteworthy aspect of the participants’ credibility assessments is that whenever they do not refer to evaluation criteria learned in school, they describe how their assessment is based on a general feeling or intuition. P4 describes that “it’s more of a feeling, if I can explain it like that, you just notice when something isn’t credible.” When probing further into this it became apparent that this so-called feeling is based on some kind of criteria, however, the evaluation is more implicit, and the participants have trouble describing it. This indicates that in certain situations the participants are more aware of their credibility assessments than in others, which might be due to a contextual difference between the school context and out of school contexts. Having grown up with access to huge amounts of information on the internet is a prevalent theme when the participants describe how they have learned to assess credibility outside of school. Learning to assess credibility online in their spare time is not described as an active process but rather something that happened automatically through experiences. P2 explained it like this:

You have kind of learned on your own somehow, through noticing that ‘God! This was completely wrong!’ and like the times when you actually notice that this sounded very weird what that person said and that’s not true, then you sort of become a bit more source critical each time and it’s happened quite a few times now, so I guess I’m pretty source critical by now.

Learning by repeatedly encountering both true and untrue information builds experience and thus credibility assessments are based on previous examples of information that was or was not credible. In school, students are taught explicit criteria to look for when they assess credibility. Outside of school previous experience provides a more implicit guide for how to assess credibility. Credibility assessments online and especially outside the school context are based on an overall assessment of the whole picture of the website. Visual cues such as layout and design are emphasised as important, but other aspects such as grammar, spelling, and reasonability also play a part.

5.3.3 Cognitive authorities

When discussing what the participants consider to be credible sources a common theme is their teachers, which illustrates that teachers have the status
of cognitive authorities, at least within their subject area. P4 explained why teachers can be considered trustworthy sources:

If it’s a teacher, like [name of teacher] then I should trust her because she is more of a professional than I am, it depends on whether I trust the person who tells me something, but I usually always believe the teachers because they have studied a good while to teach that subject.

This quote is a good example of what is essentially a description of cognitive authority. Teachers are perceived as credible and trustworthy since they are considered to be competent within their subject area. In the interviews, the formal cognitive authority attributed to teachers tend to be motivated with them having studied that subject for several years to become a teacher. They are attributed cognitive authority by the participants because of their educational background and their professional roles as teachers. Other credible sources that are mentioned include 1177.se, government and municipality websites, Swedish national news media, professors, licensed psychologists, and course literature. Motivations related to formal cognitive authority are a common theme when the participants discuss source credibility.

When someone is attributed cognitive authority in the participants’ personal lives, such as a parent, sibling or friend, the motivation is based on expertise that stems from educational or occupational competence. For example, one participant stated that:

If my dog has a weird cough then I ask my mom because she studied to become a veterinarian, so she knows that stuff, and if it’s about computers then I ask my dad because that’s what he does for a living.

Cognitive authority is thus attributed based on more formal criteria even in more informal contexts. This might be part of the reason as to why friends were rarely attributed cognitive authority, since they can be assumed to be on the same educational level. Informal cognitive authority is attributed based on people’s life experiences and it is clear that formal cognitive authorities have a higher social influence and tend to be preferred over informal ones. Informal cognitive authorities mentioned in the interviews include someone being considered a cognitive authority when it comes to the disease they are suffering from, and someone being attributed cognitive authority based on a personal relationship of trust that is unrelated to someone’s education, occupation, or similar formal criteria.

---

2 Swedish government agency website with health information.
5.3.4 Social aspects of credibility

There are several social aspects related to credibility. It is clear from the interviews that credibility, to a certain extent, is shaped and negotiated through interpersonal interactions in various contexts. Basing their credibility assessments on whether a source is popular or whether a lot of people use a certain source is a common statement in the interviews. P3, for example, stated that:

What I think most people, generally, like a newspaper or something that I know my parents buy, then if I see something there then I think it’s credible, so for me it’s sources that are big, popular, normal, that I find credible.

Social norms and values related to how certain sources are perceived and used are taken into consideration and following the norms and values within the practices the participants are a part of what guides their credibility assessments on certain sources. A source is perceived to have a high cognitive value if it is preferred and used by others who are attributed cognitive authority or because the source is sanctioned within that context. A common example in the interviews is books their teacher has recommended. These books are then almost automatically considered credible because of the teacher’s cognitive authority.

Credibility is not just based on other people’s judgements, it is also discussed with other people in order to establish whether something is true or not. P7 described how credibility is built together:

If I’m talking to other people about something I’ve read or heard then I also get, in a way I get their information about my information as well, because they can say ‘that’s not true’ or ‘that might be true’ and then it’s like I get another opinion about my source.

The cognitive value of P7’s source is negotiated in conversation with others and their opinions about the source’s credibility contributes to shaping that source’s perceived cognitive value in that context. P7’s own assessment of credibility might then be altered by discussing it with other people, which illustrates that the notion of what is credible is not formed by an individual but rather collectively in social context. Credibility assessments are also perceived to be easier together with other people since they bring different perspectives. P1 described how joining various perspectives in a discussion can determine credibility:

I think it can be difficult to argue for another perspective when you’re alone with your own view of what you think is right, if you have other people around you that think slightly differently then you get other perspectives on things, and they get another perspective from you and then you can discuss like ‘yes but that might be credible’.
Credibility is here described as being shaped collectively with other people. P1 not only mentions that it happens, they also state that other people’s perspectives are necessary to establish what is credible or not. Credibility is described as formed socially through people exchanging their perspectives.

An aspect of credibility which is related to school assignments is the social context that the students are part of as a class. The social context the students are part of in school is beneficial when it comes to collaborations in relation to group assignments. An apparent theme is that the participants perceive that they have learned more about credibility assessments from their friends in the school context than from their teachers, as exemplified by P5:

```
Most of what I have learned about [credibility assessments] in school has come from, well, it’s mainly social, like between friends that just: ‘oh, so you believe that source, really?’; and stuff like that, so that’s mostly how I’ve learned about it here, except some teachers that recommended certain credible sources.
```

P5 describes how the credibility of sources is debated among friends in relation to schoolwork. Through these discussions they shape a collective idea of what is to be considered a credible source. The cognitive value of various sources is established through social negotiation among peers. P6 described it as a collaboration:

```
It’s mostly when you are with friends and work on a school assignment together and then you search for information and find different websites and then you show them to each other and then you can assess them, because you collaborate.
```

Here P6 states that most of what they have learned about credibility assessments has come from collaborating with friends on school assignments. This illustrates how information literacies can be learned and developed through social interactions and activities.

When discussing credibility in relation to the home context and especially within the family, discussions around the dinner table is a prominent situation. In these situations, credibility is negotiated and the discussion either end in agreement or disagreement about the credibility of something. P6 described how they do not agree with their parents about what should be considered credible:

```
At home it’s usually about arguments with my parents, my mom, she usually believes what Facebook says and that’s annoying … and if I show her, say like, this is not correct, then you show a credible source but then [my parents]
```
don’t believe me because they have a lot more life experience than I do and think they are smarter.

There is a contextual difference between how credibility is perceived in P6’s family compared to within their friend group. P6 describes shaping credibility within the friend group and learning from each other. At home, P6 and their parents attempt to negotiate credibility, but do not reach a consensus. P6’s parents have other cognitive authorities than P6 and the cognitive value of P6’s evaluation criteria is not high according to their parents and vice versa. The source P6 presents is used as a cultural tool to prove that they are correct, however it is not accepted by the parents since there is a difference in how they perceive the cognitive value of that source. Further, the parents do not consider P6 to be a cognitive authority, however, they seem to think that P6 should consider them as such since they have more experience. P6 and their parents have preestablished notions of credibility that they have shaped separately from each other, in different contexts.
6 Concluding discussion

In the first section of this chapter the research questions are succinctly answered based on the results. The results are then discussed in relation to previous research, and this is divided into the themes: contextual differences, information seeking and source selection, credibility assessments, Wikipedia, and Google, algorithms and social media. The first theme was chosen because it relates to the overall aim of the study. The following two themes directly relate to the research questions. The last two themes are based on focus areas in previous studies that, while still relevant for this study, are narrower than those who relate directly to this study’s research questions. After this discussion the study’s conclusions are presented together with reflections of the study’s limitations, practical implications, and suggestions for further research.

6.1 Answering the research questions

Here the research questions are answered individually and in the same order as they appeared in the introduction.

- **What contributes to shape the ways in which the participants seek, find, and make use of information in different contexts?**

  School context characteristics such as grades, being assessed by teachers, as well as obligatory search and imposed questions in relation to school assignments contribute to shaping the ways in which the participants seek, find, and make use of information in the school context. Outside of school more information is passively encountered rather than actively searched for and this is in part related to social media use. Since information seeking is usually not obligatory outside of school, the participants more often have the options to give up searching or to not search at all. Regardless of context the choice of how to go about finding out about something to a large extent depends on the anticipated time and effort required as well as how likely it is for the information to be easily understandable once found.

- **How do the participants’ reasonings regarding source selection relate to in and out of school contexts?**

  The participants’ reasonings regarding source selection relate to in and out of school contexts in various ways. Norms and values within the school practice, teachers’ preferences, and wanting good grades affect the participants’ source selection strategies. In school using multiple sources is common, while outside of school this is often not the case. When the information is considered important enough the reasoning around source selection outside of school becomes more similar to the school context. Source selection on Google’s result page is described in
the same way across contexts. Regardless of context, infrastructural meaning-making is mostly absent from the participants reasonings around source selection, in the sense that they seem to be unaware of how search engines work and have not considered that relevant for their source selection.

- If at all, how do the participants’ credibility assessments vary depending on context?

The participants’ credibility assessments vary depending on context, however, there are also similarities. In school, the importance of credibility is mostly related to getting good grades. Outside of school participants do not always bother to assess credibility. Credibility assessments are situational and the motivation in each situation has a high influence on how thoroughly credibility is assessed. It is sometimes considered acceptable to use sources deemed uncredible outside of the school context. Credibility assessments in school tend to be more explicit and described as based on clear criteria while credibility assessments outside of school seem to be more implicit and often described as a feeling. There are clearly social aspects of credibility assessments regardless of context since credibility is shaped and negotiated collectively.

6.2 Contextual differences

The information literacies of the participants in the present study are clearly affected by the school practice. This is clear from how critical assessment of information is prominently described as important in relation to grades and the teacher’s assessment. The present study’s results confirm Gärdén’s (2016) statement that the school practice is normative and centred around the students’ actions, products and learning being assessed. It was found in the present study that this contributes to shape information literacies differently in the school context compared to other everyday life contexts, which also corroborates previous research (e.g. Gärdén, 2016; Haider & Sundin, 2022a).

Furthermore, choosing information sources that are legitimate within the school context and searching for information in legitimate ways, are central aspects of the present study’s results regarding information activities in the school context. This connects to Alexandersson and Limberg (2012), who state that students carry out assignments according to their understanding of what is expected of them within the school practice. Similarly, Lundh et al. (2015) found that students tend to adjust their information literacies in school, adapting to the teachers’ expectations. However, they also highlight a tension between being independent information seekers and conforming to the school context’s expectations. This tension can be discerned from the present study as well since the results indicate an awareness of what is sanctioned and unsanctioned while not always conforming to what is legitimised. For example, findings show that the participants sometimes complete tasks in ways they know are illegitimate and therefore hide the truth about how the task was completed from the teacher. This connects to what Aillerie (2019) describes as
the gap between how the school task is completed and what is presented to the teachers. It also resembles Lundh’s et al. (2015) conclusions since it illustrates that the aspects of students’ learning that are accessible for teachers to assess might not always be representative of the students’ entire work process. It can be discussed, they state, how useful the school’s information seeking vocabulary is outside of the school context. Similarly, there are, according to Haider and Sundin’s (2022a) study, sometimes difficulties when it comes to applying the information literacies students have learned in school outside of school and “the practices learnt at school do not always appear meaningful outside school” (p. 1183).

The present study’s results indicate that there is a gap between how students learn and enact information literacies in and out of school, as well as a gap between how the students and their teachers view information literacies and how best to find and assess information. Similarly, Comstock (2012) describes a divide between information literacies sanctioned in the school context and students’ enactments of information literacies outside of school. The students are not able to use information literacies learned outside of school in school even when doing so might be beneficial. Furthermore, Aillerie (2019) also identified a tension between conforming to what is sanctioned in the school practice and using everyday life information strategies. The present study found that source selection in school is based on what is preferred by the teachers, while outside of school participants still use sources deemed illegitimate in the school context. The results indicate that the difference in how information is assessed outside of school compared to in school is related to the fact that in school assessments are controlled by a teacher. This connects to Haider and Sundin (2022a) who state that information tends to be assessed differently outside of school partly because it is less controlled. The present study suggests a tendency to be less thorough when assessing credibility outside of school, however, the importance of the information appeared to have the most prominent impact on thoroughness.

In the school context search is obligatory, and the tasks consist of imposed questions that are assessed and graded by the teacher. Taken together, this puts the students in a situation when giving up searching is not an option. This is another main difference between the school context and other everyday life contexts that was evident in the results of the present study. Gärdén (2016) came to a similar conclusion. In the present study it was found that one online search strategy used in the school context was that of looking for keywords in the task instructions to use as keywords when formulating a query. This strategy was also noted by Gärdén (2016). This strategy relates to Andersson’s (2022) statement that in school her participants knew more specifically what they were searching for and could use keywords, while in their spare time they were sometimes more unsure of exactly what to search for, and therefore tended to formulate queries more as questions. The present study, however, did not note a contextual difference between keywords and natural language queries. It tended to vary from person to person instead of between contexts. Thus the present study’s results differ from Andersson’s (2022) in that regard.

6.3 Information seeking and source selection
The present study found that information seeking tended to be primarily conceptualised as online search. Previous research has come to similar conclusions, also mentioning that for young people search in general is primarily related to school (e.g. Foss et al., 2013; Gärdén, 2016; Sundin et al., 2017).

Searching online is indicated by the present study as often being the first choice when needing to find information about something. This was found to be the case by Sundin et al. (2017) as well. However, examples of situations when online search was not the first choice are also represented in the results. The present study found that easy access, convenience, time, effort, as well as the likelihood of understanding the information once found, where the main influences on the participants’ choice between different ways of going about finding the information they needed. This connects to findings from previous studies (e.g. Andersson, 2022; Shenton & Hay-Gibson, 2011; Sjöberg, 2018). Similarly, Head and Eisenberg (2011) concluded that convenience, familiarity, and habits had the most significant impact on their participants’ information seeking. When taking these aspects into consideration, the present study’s participants sometimes choose interpersonal sources above online search.

Friends seem to have a significant impact on how, when, and why the present study’s participants search for information and this connects to previous research (e.g. Agosto & Hughes-Hassell, 2005; Eynon & Malmberg, 2012; Foss et al., 2013; Head & Eisenberg, 2011; Meyers et al., 2009). The present study’s results indicate that family or friends were sometimes preferred over online search, either because they were nearby or because some kinds of information were assumed to be more easily understood if received from an interpersonal source. Head and Eisenberg (2011) similarly found that their participants relied on friends and family as information sources almost as much as on information online. However, the present study’s results indicate that relying on Google and preferring to look things up independently rather than asking another person was more common. Likewise, Sundin et al. (2017) also found that Google dominated when it came to online search.

In the present study and in Andersson’s (2022) study one notable alternative to Google was YouTube. The present study’s participants did not necessarily conceptualise their use of YouTube as searching for information, even when YouTube was used in direct relation to a school assignment. Andersson (2022) suggests that the reason for this might be that YouTube is seen as entertainment and thus not related to fact-finding in the way Google is, and that this might have to do with facts being thought of as mainly connected to the textual genre of information. Participants in the present study mentioned searching on YouTube when they could not be bothered to look for information, while also stating that there is information to be found on YouTube as well. This is quite contradictory and in line with Andersson’s (2022) idea that YouTube is mainly related to entertainment and thus not seen as fact-finding. However, one significant difference between this study and Andersson’s (2022) is that this study’s results illustrate that the participants sometimes did conceptualise information on YouTube as facts, when YouTube was used for finding information for a school assignment. Therefore, in contradiction with Andersson’s (2022) conclusions, the present study indicates that searching on YouTube is, in some situations, conceptualised as fact-
finding. When YouTube is used in relation to school it is not always seen as entertainment. Another alternative to Google that has not been mentioned in any previous research is ChatGPT. This is probably because ChatGPT has only recently become available as an option.

### 6.4 Credibility assessments

This study’s results identified comparing sources to ascertain consistency as a prominent strategy to ascertain credibility. Statements from different sources that corroborate each other are often viewed as more credible (Francke et al., 2011; Meola, 2004). This strategy was in the present study generally referred to as encouraged within the school context which is consistent with Francke’s et al. (2011) study. This kind of cross-validation was also noted by Metzger et al. (2010) as one of the most mentioned credibility assessment strategies in their focus groups.

In connection to the present study’s results, the motivation behind the search for and assessment of the information was also identified by Metzger (2007) as central to how credibility assessments are performed. Participants in the present study expressed how the information was almost always considered important in school since it was related to school assignments and grades. Outside of school credibility assessments were only thorough when the information was especially important. Metzger (2007) similarly acknowledges that the credibility of information is not always considered important by internet users. It is clear from the present study’s results that credibility assessments are situational since the intended purpose of the information has a significant impact on how credibility is assessed. Credibility is only important when the purpose of the information is important. Coming to a similar conclusion Sundin et al. (2017) mention that credibility seems to be considered less important, irrelevant even, when the information content is not epistemological. This connects to how, in the present study, important information was generally associated with information needed for school.

In the present study it was found that the participants often assessed credibility to some degree even when the information was not important. These assessments were more implicit and often based on visual aspects. In connection to this Metzger (2007) states that it is common to use superficial criteria requiring less effort when the information is less important, and the motivation is low. The present study’s results illustrate that even in situations where the participants claimed that they did not assess credibility, they generally still had some level of awareness of whether a source was credible or not. Results indicate that the participants tended to conceptualise credibility assessments only according to how they are expected to assess credibility in school. Therefore, other less thorough credibility assessments outside of school sometimes seem to have gone unnoticed. More superficial, almost implicit, credibility assessments primarily based on visual cues tended to not be identified as actual credibility assessments, and if they were it was described as a feeling rather than a strategy. This unawareness of credibility assessments made in everyday life contexts as well as credibility assessments based on a
feeling rather than explicit criteria has not been a focus point in previous research.

The present study found that participants made clear distinctions about some genres generally being less credible, for example social media platforms, blogs, and discussion forums. This can be linked to how previous research (e.g. Francke et al., 2011; Francke & Sundin, 2009; Sundin & Francke, 2009) discuss how students use genre as a tool for assessing credibility. The strong dichotomy between facts and opinions that could be discerned from the present study’s findings was identified by Francke et al. (2011) as well. In the present study participants tended to equate facts with a neutral perspective free from opinions. Therefore, they generally preferred not to use sources that contain opinions for school assignments since they want facts, which are conceptualised as the opposite of opinions. Sundin and Francke (2009) also mention this dichotomy and state that most students “were clearly set on finding facts” (Genre-based credibility assessment section).

Using genre as a cultural tool to assess credibility by dividing genres according to this dichotomy is something the present study’s participants seem to have learned in school. Apart from YouTube all sources from opinion-based genres that were mentioned as credible were related to outside of school contexts. Similarly, Sundin and Francke (2009) mention that their participants used genre as a tool within the educational context. Genre as a credibility assessment tool is by Francke and Sundin (2009) described as a quick option. This indicates that genre is used as a tool since it is both quick and requiring little effort while also being endorsed within the school practice. In the present study, the dichotomy between facts and opinions appeared to be stronger in the school context and more fluid outside of school which also indicates a connection between genre as a cultural tool and the school context.

A central aspect of credibility assessments that can be discerned from the present study’s results was to look at the author or distributor. This is consistent with previous research (e.g. Mansour & Francke, 2017; Sundin & Francke, 2009). The present study’s participants tended to evaluate the education and professional expertise of the author to determine whether they were credible. This was mentioned in relation to all kinds of sources and, as also mentioned by Sundin and Francke (2009), is something students are taught in school. However, this was in the present study a common strategy both in and outside of school meaning that the participants appropriated this strategy to use outside of the context where they had learned it.

The most prominent cognitive authorities in the present study were found to be the teachers. They were not only seen as credible sources, the sources they recommended tended to also be regarded as credible. This connects to Sundin and Francke’s (2009) discussion about cognitive authorities being able to lend credibility through recommendations. Sources were also sometimes deemed credible without a direct recommendation if it was a well-known and popular source. This relates to what Metzger et al. (2010) call the endorsement heuristic. Similarly, Mansour and Francke (2017) found that their participants tended to deem information to be credible if it came from someone they shared lifestyle, values, and worldview with. For the present study this was found to generally be the case in relation to parents and teachers. The results indicate
that likeminded people’s credibility assessments were sometimes relied upon and that following the norms of which sources were accepted as credible within each context was common.

Interestingly however, friends were commonly excluded from this. On the one hand, it was found that participants learned about credibility from each other in the friend group and in class. On the other hand, not trusting information from friends was also a notable theme. Friends tended to generally not be seen as cognitive authorities for reasons such as the participants not trusting their friends’ ability to evaluate credibility and knowledge about the fact that friends often used social media as their source of information. Neither Metzger et al. (2010) nor Mansour and Francke (2017) mention any findings indicating that friends tended to be excluded from what Metzger et al. (2010) call the endorsement heuristic. However, these studies both included participants that were decidedly older than those in the present study. Perhaps this might be part of an explanation.

Overall, and in accordance with Haider and Sundin’s (2022a) study, the results included variations in how thoroughly participants assessed credibility and these variations were both found between contexts and between individuals. Furthermore, it was also found that the level of how sceptical the participants were towards information in general varied from always being initially sceptical to instantly believing most of the information encountered. Haider and Sundin’s (2022a) study indicated that distrust, never trusting anything at all, was becoming increasingly more dominant in society. However, distrust was not found to be prominent in the present study. The results show that when the participants were sceptical, their reaction was not to immediately decide that the information was not credible, but rather to assess the credibility. There was still an openness for the possibility that it might be true, however unlikely.

### 6.4.1 Wikipedia

In the present study, a prominent theme whenever Wikipedia was mentioned was that the participants felt like they had to defend their use of Wikipedia. Similarly, previous research has found that Wikipedia is controversial, especially within the school context (e.g. Andersson, 2017a; Edgerly, 2017; Francke et al., 2011; Sundin & Francke, 2009). Generally, the participants seemed to think that the advantages of Wikipedia outweighed the potential lack of credibility. The usefulness of Wikipedia was often mentioned in relation to having all information in one place, Wikipedia being based on facts as opposed to opinions, Wikipedia being a good starting point, and Wikipedia being updated frequently, which is consistent with previous research (e.g. Edgerly, 2017; Francke et al., 2011; Sundin & Francke, 2009).

The results show that the present study’s participants are hesitant to use Wikipedia in school since they are aware that the source is not endorsed by the teachers. The participants still sometimes used Wikipedia despite knowing that they should not. Whenever Wikipedia was used in the school context, it was done so through adapting the use of it to the school’s norms and expectations, for example by always backing up information from Wikipedia with a second
source. Previous research has also noted this strategic use of Wikipedia in the school context (e.g. Andersson, 2017a; Sundin & Francke, 2009). Sometimes the use of Wikipedia was not presented to the teacher at all, but rather hidden behind other sources that were found to confirm the information on Wikipedia. This is also consistent with Andersson (2017a).

The present study found that Wikipedia was also used as a tool to assess the credibility of other sources. A credible source was then a source that corroborated Wikipedia’s information. Sundin and Francke (2009) similarly mention that participants in their study found several sources that stated the same information and if this information did not contradict the participants’ previous knowledge, acquired for instance from Wikipedia, then that information was deemed credible. Using Wikipedia as a credibility assessment tool might be related to Wikipedia’s perceived authority, an authority that could be linked to Google usually putting Wikipedia at the top of their search result ranking.

6.5 Google, algorithms, and social media

In the present study participants in some situations trusted Google’s ranking to assess the information. Similar to the present study, some participants in Andersson’s (2017b) study had never contemplated how Google’s ranking works and this was by Andersson attributed to the successfulness of Google’s role as an authority. The present study’s findings show that when the information searched for was perceived to be more important participants tended to be more critical towards Google’s ranking and often preferred not to rely on Google to assess credibility for them. Findings suggest that participants in the present study favoured the first page of the result list and often choose top links, as also indicated by previous research (e.g. Haider & Sundin, 2022a; Sundin et al., 2017). However, in general the participants did not leave source selection and credibility assessments entirely up to Google. The participants did not always choose one of the top links and a website being ranked at the top was not enough on its own. In this sense the participants were critical towards Google’s ranking. According to Haider and Sundin (2022a) some participants’ understanding of Google included the assumption that Google only provides links that have passed a verification or credibility inspection. However, an understanding of Google as a credibility inspector was not identified in present study’s results. Sjöberg’s (2018) study indicated that the ranking was not only interpreted as top links being more popular, they were also assumed to be more reliable. This differs slightly from the present study where findings show that top links were usually described as presumably being the most relevant, however, findings also gave clear indications that the participants had experiences of this not being the case.

The present study’s results indicate that algorithms on social media were not relied upon for credibility even though they were trusted for relevancy in relation to personal preferences. A positive attitude towards algorithms on social media could be discerned from the present study’s results as well, however, the participants also seemed to be aware of potential negative aspects. Some studies (e.g. Fletcher & Nielsen, 2019; Gran et al., 2021) found that younger people were in general more aware of and more positive towards
In the present study it was found that the participants were significantly more aware of how algorithms work in relation to social media rather than online search engines. Perhaps part of the reason as to why search engines receive more trust is related to a less profound understanding of how algorithms work in search engines compared to on social media. Not having given much thought to how search engines work or not having realised that search engines are run by algorithms was found to be common in the present study’s results. This is consistent with findings from previous research (e.g. Andersson, 2017b; Haider & Sundin, 2022a; Sundin et al., 2017).

The analysis shows that when participants found posts on social media that contained information or opinions they agreed with or that supported their beliefs, they sometimes actively decided against searching for differing views on Google even when they were aware that the contents of that post might not represent the whole truth. This connects to Haider and Sundin’s (2022c) study where they discuss human users’ roles and agency in relation to search engines and social media, stating that users sometimes use their agency to “support a desired confirmation bias” (p. 136). The present study’s results also included other forms of confirmation bias. For example, findings indicate that in some situations the participants consciously use queries that are angled towards the desired opinion rather than finding an objective answer. This was also mentioned by Haider and Sundin (2022c) who state that keywords are chosen both in relation to an information need and the anticipation of what the results are likely to be and how they can then be used in a certain social situation. Using an online search engine as an “instrument for confirmation bias” (p. 139) is, according to Haider and Sundin (2022c), related to infrastructural meaning-making. However, the participants in the present study did this without realising that they were interacting with algorithms as such, which illustrates how infrastructural meaning-making both is and is not a part of the participants’ information literacies. In the present study, this is only mentioned in relation to contexts outside of school. Results indicate that, in the school context, participants usually do not have preconceived notions of what the answer ‘should’ be. This relates to how information in school is seen as neutral facts and how opinions are not seen as useful for school assignments.

The present study found that, in school, the main reason for searching for information is related to assignments, while outside of school reasons for information seeking vary. Results show that the reason as to why participants are looking for information impacts how the go about finding it. When participants could not find anything to prove their point, they sometimes chose a source that they did not trust, simply because it agreed with their opinion. Similarly, Sundin et al. (2017) mentioned that participants searched for information to settle disagreements. Searching online to prove that you are correct and that someone else is wrong was a common theme in the examples of online search in social situations found in the present study. This happened both in and outside of school but mainly in relation to friends or family, not when discussing with a teacher. This also connects to Sundin’s et al. (2017) discussion about using Google as a “tool for conscious confirmation bias” (p. 233).

A tendency to refer to Google as a source of information was identified in the present study. Findings indicate that Google is seen as a knowledge bank or an
answer-machine, a place you go when you need answers to factual questions. The participants in the present study clearly related using Google to situations when they had a question that needed answering. Using Google was primarily mentioned in relation to fact-finding. School assignments was a central theme in this, however, Google as a factfinder outside of the school context was also a common theme. The link between Google and fact-finding as identified by Andersson (2017b) aligns with the present study’s findings. However, the link between Google and the school context was in the present study’s results not found to be exclusive in the way that was indicated by Andersson’s (2017b) study. Using Google outside of the school context was, according to Andersson’s (2017b) study, not even considered as searching on Google, since Google was then used for other things besides finding facts, such as to navigate to certain known websites. The present study’s findings differ from Andersson’s in the sense that searching for facts on Google was related to both school and everyday life context, even if it was done more often in the school context.

Much of what the present study’s participants knew about searching online was said to come from “trial and error” or “learning by doing” as well as learning from their peers. The results indicate that the participants tended to perceive their own online search abilities to be inadequate for using search engines in the most effective way possible. This perceived inadequacy was generally related to not having been taught how to search efficiently in school. This connects to Foss et al. (2013) who state that “while school becomes more of a motivating factor to search for children as they age into adolescence, classroom search education is not keeping pace” (p. 181), also mentioning a lack of guidance regarding search techniques specifically. This is an American study of 14–17-year-olds, however, it is still interesting to note that Foss’s et al. (2013) conclusions echo the present study’s findings.

In the present study, it was clear that the participants experienced an absence of education in how search engines and algorithms work, and that they were interested in learning more about it. In the Swedish school system search is, according to Sundin and Carlsson (2016), not identified as something school needs to teach the students and in the Swedish curriculum searching is interpreted as a neutral method. The present study found that the participants overall believed that upper secondary school teachers assume that their students already know all they need to know about how to search for information, however, findings indicate that the students do not necessarily agree with this. Teachers tend to only conceptualise search as a practical skill, according to Sundin and Carlsson (2016), and they have difficulties envisaging search as a part of teaching and learning. Some teachers in Sundin and Carlsson’s (2016) study claimed that their students had no trouble finding facts, however, the present study indicate that the participants tend to want to learn more about how to search efficiently in school. Sundin and Carlsson (2016) describe how teachers stated that their students trusted Google too much. To be able to be critical towards Google the students first need to understand what it is they need to be critical of, which is difficult without an understanding of how the search engine works.

The present study’s findings indicate the importance of educating students about search engines and their role in assessing information. Findings from
Sundin and Carlsson’s (2016) study do not align with the present study’s findings. This illustrates that the teachers’ perspective differs from the students’ perspective when it comes to information search education. Sundin and Carlsson (2016) emphasise the importance of “developing ways of understanding the role of searching and search engines as technologies of literacy in relation to critical assessment” (p. 1002). Search engines are not neutral. According to Sundin (2020) they contribute to establishing “what knowledge there is to know” (p. 376). Google’s dominant role in our information infrastructure was also problematised by Sundin and Carlsson (2016), and Lindh et al. (2016) who mention Google’s role in Swedish schools specifically. This further emphasises the importance of teaching students about online search, search engines, and algorithms.

6.6 Conclusions and research suggestions

This study contributes to the understanding of how young people’s information literacies are learned and enacted in different contexts by comparing the school context to other everyday life contexts. When discussing the results in relation to previous research the answers to the research questions were put in a wider context.

It was found that the time and effort required, the importance of the information, and the likelihood of understanding the information, influenced information seeking and source selection regardless of context. Motivation impacted how thoroughly credibility was assessed. In school motivation was generally described as high and related to teachers’ assessment and grades. Outside of school motivation differed. If the information was not especially important then participants did not bother to properly assess credibility. It is impossible to constantly and thoroughly assess the credibility of all information found or encountered, meaning that it is necessary to learn how to judge when a more thorough credibility assessment is needed. The results show that this judgement was based on how important the information was to the individual personally, however, other aspects might be relevant to take into consideration, such as the potential consequences of trusting that information if it is incorrect. Low motivation or confirmation bias lead to information not being as thoroughly assessed.

Credibility was found to be shaped and negotiated socially across contexts. Information from cognitive authorities or sources recommended by cognitive authorities were trusted and sources were also deemed credible because of their social status and popularity. Some sources had different credibility status in different contexts. The most prominent example being Wikipedia. Outside of school Wikipedia was popular among the participants’ friends which added to its status as a credible source. The conflicting opinions of Wikipedia’s credibility and the difference in how Wikipedia was used both legitimately and illegitimately across contexts illustrates how what is taught in school is not always appropriated and used in other contexts.

In a sense, some aspects of young people’s information literacies seem to be isolated to the school context since they were taught or adapted in relation to
characteristics that are unique for educational contexts. They did not only adapt to what is sanctioned within the school context, they also developed information literacies to address the fact that they were assessed and graded. Source selection was for example used to communicate work ethic and ambition.

The way in which searching for information and assessing credibility were conceptualised and learned in school also affected what was considered as searching for information and assessing credibility outside of that context. Searching for and finding information in some sources (e.g. YouTube) was at times not seen as searching for information since it was not perceived to fit the school practice and since these sources were related to entertainment while searching for information was not.

The results indicate a higher awareness of credibility assessments the school context since describing credibility assessments in relation to what had been taught in school did not pose any difficulties. However, credibility assessments outside of school were not as easily identified when they differed from the school context. One explanation for this might be that these credibility assessments had been learned implicitly through experience rather than actively taught.

Infrastructural meaning-making did not appear to have a significant role in how information literacies were enacted, which could be related to findings that indicate a potential lack of awareness regarding how search engines work. When infrastructural meaning-making was present it was in relation to what had been learned through experience outside of school. It was never explicitly mentioned as part of the information seeking process or credibility assessments. This is probably related to the workings of search engines and algorithms not being part of their education.

Conclusions that can be drawn from the findings of this study are:

- Grades and being judged has a significant impact on the participants’ information literacies, distinguishing the school practice from other practices.
- Information literacies are formed socially when interacting with others.
- The perceived importance of the information affects how information is search for and assessed.
- Finding ways to minimise the time and effort of searching for and ingesting information is a part of the participants’ information literacies.
- In school, information seeking and credibility assessments are learned explicitly, while outside of school they are learned implicitly and therefore less noticeable.
The way in which information literacies are conceptualised and learned in school affect how information search and credibility assessments are conceptualised and enacted outside of the school context.

6.6.1 Implication for practice and future research

One practical implication is that schools need to educate students about how algorithms and search engines work. Another is that it should not be assumed that students are efficient information seekers that do not need further education in how to find information. The present study indicated that students might not feel confident at searching for information and therefore wish to improve their efficiency. Information literacies learned in school are not always appropriated and used in other contexts. This indicates that strategies for assessing credibility learned in school might not be perceived as useful outside of school. Since school is not only about learning to pass tests and get grades, perhaps credibility assessments should be taught not only in relation to the school assignment at hand but also be discussed in relation to other contexts outside of school.

The research questions were addressed by analysing the empirical data from a sociocultural point of view. The sociocultural perspective and the additional theoretical concepts were effective in highlighting and explaining contextual differences, for example by analysing similarities and differences in which cultural tools were used and what cognitive value they held across contexts.

Semi-structured interviews were conducted with seven participants, producing a rich enough material to answer the research questions. However, the small number of participants is one of this study’s limitations and more participants would likely have yielded an even richer material.

During the analysis it became clear that the study would have benefited from a second phase of data production, either through interviewing the participants a second time or through focus groups. This would have made it possible to readdress topics based on findings from the analysis and ask new questions related to new themes that arose from analysing the material, for example how the participants conceptualise information search and how they approach searching when they already know what answer they want to find. It would also have made it possible to discuss subjects only one or a few participants mentioned with the rest of the participants, since some participants brought up aspects that were not explicitly covered in the interview guide. For example, it would have been valuable to have more of the participants discuss ChatGPT, and how social media may be used in the school context. It was indicated in the present study that AI such as ChatGPT present an alternative to search engines such as Google and since this is a new alternative further research is needed.

Interviewing the participants’ teachers would have added another layer, since the participants made numerous claims about their teachers’ opinions. Given that this study, along with previous research, found that there is a gap between information literacies in and outside of school and that information literacies in school are clearly affected by the teachers, including the teachers in the study might have led to further insights. Further research is needed to investigate...
how information literacies from other contexts can be incorporated into the school context in a way that benefits the students.

References


Kodama, C., St. Jean, B., Subramaniam, M., & Taylor, N. G. (2017). There’s a creepy guy on the other end at Google!: engaging middle school students in a drawing activity to elicit their mental models of Google. *Information Retrieval (Boston), 20*(5), 403–432. https://doi.org/10.1007/s10791-017-9306-x


Appendix A: Interview guide

English translation:

1. Could you tell me about a situation today or during the last few days when you had to or wanted to find out about something?
   - When?
   - Why?
   - How?
   - …and in school/…and outside of school?

2. Could you give me examples of situations where you feel like you can really trust something you encounter, find, or search for?
   - Could you give me examples of situations where you feel like you can definitely not trust something you encounter, find, or search for?

3. If you feel like you have to find out about something, what is usually the easiest way for you to do that?
   - Are there situations when Google is not your first-hand choice?
   - Are there any differences in how you go about finding out about something in school compared to outside of school?

4. Could you give me an example of a situation when you found it especially difficult to find out about something you wanted or needed to know?
   - How did you solve your problem in that situation?
   - Can you think of an additional example, one from when you were in school/not in school?

Theme: Information seeking

5. How aware would you say that you are about how algorithms work in relation to for example search engines and social media?
   - When do you notice algorithms the most?
   - What is your opinion about algorithms, are they problematic in some way or do you find them to be mostly helpful?

6. How do you go about finding out about something? Could you walk me through it step by step?
   - What is your reasoning around what you choose to write in the search box?

7. When in your everyday life do you want to or need to find out about something?
   - Is it related to certain situations?
   - What is usually the reason? (Curiosity, entertainment, utility…)
8. Is there a difference in how you do to find out about something in school or for a school-related task compared to when it is not related to school at all?
   - Do you use the same device? (i.e. computer or smartphone)
   - Do you choose the same sources?

**Theme: Credibility assessment**

9. How do you decide whether something you read or hear is credible or not?
   - Is there a difference in what factors you consider when you assess credibility in school and outside of school?

10. Are you usually sceptical towards information that you encounter or search for?
   - Is there a difference in how sceptical you are in different situations?

11. Is there a difference in how you evaluate information that you have actively searched for compared to information that you encounter without looking for it specifically?

12. Are there any information sources that you perceive to be especially credible or trustworthy?
   - If so, then what is the reason for it?
   - Do you ever use sources you consider less credible?
   - If so, when?

13. Do you think credibility is more important in school or outside of school (or equally important always)?
   - Why?

14. Could you give me examples of situations where you find it especially difficult to assess whether something is credible or not?
   - Why is it extra difficult in that situation?

15. If you do not trust something that you have heard or read, what is usually the reason?

16. Is there a difference in how you assess the credibility of different kinds of sources? (Are there different factors you consider when it comes to the credibility of a website, a person’s statement, a newspaper, a post on social media?)

17. What is your reasoning about the credibility of information that you pass on to others? (Is credibility a factor in how you pass along information?)
   - Is it different in different situations?
   - Is there a difference depending on if it is at school or not?

18. Who is responsible for the credibility of something? (Sender or receiver)

19. Is how and wherefrom you found the information a part of your credibility assessment?
   - Why/why not?
20. When you search for information online, is the ranking on the search result list a part of your source evaluation?

21. Do you sometimes compare different sources? 
   If yes:
   - When and why?
   - Is this something you do both in and outside of school?
   - What do you do when sources contradict each other?

22. What is usually your first reaction when you heard or read something? Is your first thought that you believe it or that you do not trust it?

23. Does it always matter whether something is true or not?
   - How often do you assess the credibility of information you encounter or search for?
   - Are there situations when you do not feel like you do not need to do a credibility assessment?

24. Is there a difference in how you assess credibility that is related to whether you are using a computer or a smartphone?

**Theme: Learning information literacies**

25. a) Have you learned about how to search for information in school?
   b) Have you learned about how to assess credibility in school?
   c) Has what you learned in school about searching for information and assessing credibility been useful for you outside of school?

26. a) Have you learned about how to search for information outside of school?
   b) Have you learned about how to assess credibility outside of school?
   c) Do you ever discuss credibility outside of school, with for example friends or family?
   - Where, outside of school, do you think about or talk about credibility the most?

27. Have you learned about how search engines and algorithms work in school?

28. That was my last question, is there anything you would like to add?
Swedish original:

1. Kan du berätta om en situation idag, eller under den senaste tiden, då du har behövde eller ville ta reda på någonting?
   - När?
   - Varför?
   - Hur?
   - ... och i skolan/... och utanför skolan?

2. Kan du ge mig exempel på situationer då det känns som om du verkligen kan lita på det du stöter på, hittar eller söker upp?
   - Kan du ge mig exempel på situationer då det känns som om du definitivt inte kan lita på det du stöter på, hittar eller söker upp?

3. Om du upplever att du behöver ta reda på något, vad brukar då vara det enklaste sättet för dig att göra det på?
   - Finns det situationer då Google inte är ditt förstahandsval?
   - Finns det några skillnader i hur du går till väga för att ta reda på någonting i skolan jämfört med utanför skolan?

4. Kan du ge mig ett exempel på en situation då du upplevde att det var riktigt svårt att ta reda på någonting som du ville eller behövde veta?
   - Hur löste du det?
   - Kan du komma på ett till exempel, ett från en skolsituation/situation utanför skolan?

Tema: Informationssökning

5. Hur medveten skulle du säga att du är om hur algoritmer fungerar relaterat till sökmotorer och sociala medier, till exempel?
   - När lägger du märke till algoritmer som mest?
   - Tycker du att algoritmers inflytande är bekymmersamt på något sätt eller bara hjälpsamt?

6. Hur gör för att ta reda på något? Hur går du till väga steg för steg?
   - Hur resonerar du kring vad du väljer att skriva i sökrutan?

7. När i din vardag behöver du eller vill du ta reda på saker?
   - Är det relaterat till några situationer?
   - Vad brukar oftast vara anledningen? (nyfikenhet, nöje, nytta…)

8. Är det någon skillnad i hur du gör för att ta reda på saker i skolan och till skoluppgifter jämfört med när du vill veta något som inte är skolrelaterat?
   - Använder du samma enhet dvs mobil eller dator?
   - Väljer du samma källor?
Tema: Tprovärdighetsbedömning

9. Hur avgör du om du kan lita på det du hör och läser eller inte, om det är trovärdigt eller inte?
   - Är det någon skillnad i vilka faktorer du tar med i din trovärdighetsbedömning i skolan jämfört med på fritiden?

10. Brukar du vara skeptisk till sådant du stöter på eller söker fram?
    - Är du olika skeptisk i olika situationer?

11. Är det skillnad på hur du bedömer information du aktivt sökt efter och information som dyker upp utan att du letat efter det specifikt?

12. Finns det några källor du uppfattar som särskilt trovärdiga eller värda att lita på?
    - Vad är det i så fall som gör att du uppfattar vissa källor som särskilt trovärdiga eller pålitliga?
    - Använder du någonsin källor som du tycker är mindre trovärdiga?
    - I så fall, när?

13. Tycker du att frågan om trovärdighet är viktigare i skolan än på fritiden (eller alltid lika viktigt)?
    - Varför?

14. Kan du ge mig exempel på situationer när du tycker att det är ovanligt svårt att bedöma ifall något är trovärdigt eller inte?
    - Vad var det som gjorde det extra svårt i den situationen?

15. Om du inte litar på något du hör eller läser, vad brukar då oftast vara anledningen?

16. Är det någon skillnad i hur du bedömer trovärdighet beroende på vilken typ av källa det gäller? (Är det olika saker som du baserar din trovärdighetsbedömning på beroende på om källan är en hemsida, något en person säger, en tidning, ett inlägg på sociala medier?)

17. Hur resonerar du kring trovärdigheten i sådant du sprider vidare till andra? (Spelar trovärdighet en roll i hur du förmedlar något?)
    - Är det olika i olika situationer?
    - Är det olika i skolan och på fritiden?

18. Vem är ansvarig för trovärdigheten i något? (Sändare eller mottagare)

19. Påverkar hur och var du hittade informationen din bedömning av trovärdigheten?
    - Varför/varför inte?

20. När du söker efter information på internet, spelar då sökresultatet och rangordningen av sökträffar någon roll för din utvärdering av informationen?

21. Händer det att du jämför olika källors påståenden?
    Om ja:
    - När och varför?
- Gör du det både i skolan och på fritiden?
- Hur hanterar du om olika källors påståenden motsäger varandra?

22. Brukar du utgå ifrån att det du hör eller läser är sant eller falskt? Är din grundläggande inställning eller instinkt att tro på eller att inte tro på det du hör eller läser?

23. Spelar det alltid roll om något är sant eller inte?
   - Hur ofta brukar du bedöma trovärdigheten i information som du söker upp eller stöter på?
   - Finns det situationer då det inte behövs?

24. Är det någon skillnad i hur du bedömer trovärdigheten av något beroende på om du använder en mobil eller en dator?

Tema: Att lära sig informationssökning och källkritik
25. a) Har du fått lära dig informationssökning i skolan?
   b) Har du fått lära dig om källkritik i skolan?
   c) Har det du lärt dig i skolan om informationssökning och trovärdighetsbedömningar varit användbart för dig utanför skolan?

26. a) Har du lärt dig om hur man söker efter information utanför skolan?
   b) Har du lärt dig hur man bedömer trovärdighet utanför skolan?
   c) Händer det att du diskuterar trovärdighet utanför skolan, till exempel med vänner eller familj?
      - Var tänker du på eller pratar du om trovärdighet oftast på fritiden?

27. Har du fått lära dig om hur sökmotorer och algoritmer fungerar i skolan?

28. Det var min sista fråga, finns det något du vill tillägga?
Appendix B: Recruitment letter

English translation:

Hi!
My name is Hanna Lindbom and I am studying the master programme Library and Information Science – digital libraries and information services at the University of Borås. This semester I am writing my master thesis, which is about upper secondary school students’ information seeking and source criticism. I am especially interested in differences between how the students search for and interact with information in school and outside of school. Therefore, I am wondering if some of your students in their third year that are at least 18 years old would be interested in being interviewed by me. I am going to ask questions about how, when, and why they search for information in different contexts and about their evaluation of information from various sources that they encounter in school and in their spare time.

The interviews are going to be individual, and I would like to do audio recordings that will later be transcribed. I estimate than an interview will take one hour max. If possible, I am happy to come to the school and interview the students there, but conducting the interviews digitally through for example Zoom is also an option. My plan is to conduct the interviews in March. The material from the interviews will be confidential. The students and their answers will not be identifiable. The results will be published as a master thesis.

My hope is that you can help me get in touch with between 6-10 students. I am more than happy to answer any questions about the study or the conditions for the interviews.

Best regards,
Hanna Lindbom
E-mail:
Phone number:

The thesis work is supervised by […], University of Borås, [e-mail]
Hej!
Mitt namn är Hanna Lindbom och jag läser masterprogrammet Biblioteks- och informationsvetenskap – digitala bibliotek och informationstjänster via Höskolan i Borås. Den här terminen skriver jag min masteruppsats som handlar om gymnasieelevers informationssökning och källkritik. Jag är särskilt intresserad av skillnader mellan hur elever söker och förhåller sig till information i skolan och på fritiden. Därför undrar jag om några av era elever som går tredje året och har fyllt 18 år skulle vara intresserade av att bli intervjuade av mig. Jag kommer att ställa frågor om hur, när och varför de söker information i olika sammanhang och om deras granskning av information från olika källor de kommer i kontakt med i skolan och på fritiden.


Min förhoppning är att ni har möjlighet att hjälpa mig att komma i kontakt med mellan 6–10 elever. Givetvis svarar jag också gärna på frågor om studien och förutsättningarna för intervjuerna.

Med vänliga hälsningar,
Hanna Lindbom
E-post:
Telefon:

Uppsatsarbetet handleds av […], Höskolan i Borås, [e-post]
Appendix C: Consent form

English version:

Consent for the collection and processing of personal data

As part of the master programme Library and Information Science – digital libraries and information services at the University of Borås, I am conducting a study with the purpose of investigating young Swedish people’s information seeking, source evaluation, and information use.

I who am conducting the study would like you to provide certain information about yourself, more specifically what educational programme you are in and what you like to do in your spare time, and for you to take part of an interview about how you search for and use information in school and outside of school. Included in this is also an audio recording of your voice, which is why I need your approval for that as well.

The personal data will be used to illustrate differences in how young people search for and interact with information in school and outside of school.

The University of Borås is the controller of the processing, and the legal basis for the processing is article 6.1 (a) in the General Data Protection Regulation, GDPR, (consent).

The personal data will be used by me and may be made available to the teachers of the current course and central administrators at the university. The data may also be public documents, which means that anyone as a general rule may access it in accordance with the principle of free access to public records.

The personal data will be stored in the EU/EEA, or countries outside the EU/EEA that the EU Commission has determined to have an adequate level of protection, i.e. sufficiently high according to the GDPR. The data will be erased when it is no longer necessary.

The results of the study will be presented in anonymised form, so that no data can be traced to you.

Your participation in this study is completely voluntary. If you consent to the processing of your personal data as described above, you may withdraw your consent at any time whereby we will stop using your personal data. Because of legal requirements we may however be prevented from immediately erasing your personal data.

I hereby consent that University of Borås may collect and process my personal data as described above.

____________________________
Signature

____________________________
Name in block letters

____________________________
Place and date
Privacy Notice
Your privacy is important to us at the University of Borås. We are committed to protect your personal data and only process it according to applicable laws and regulations, including the General Data Protection Regulation (GDPR).

The University of Borås is the controller of the university’s processing of personal data. If you have any questions about how we process your personal data, you are welcome to read more about this on our website, http://www.hb.se/privacy, or contact the course responsible.

Your Rights

• The university is transparent with how we process your personal data. If you want to know what personal data we process about you, you can request a copy of the personal data and information about the processing free of charge once per year. To order a copy of your personal data and information about the processing, you can use the form for this that is available on our website, http://www.hb.se/dataskydd.

• If you consent to processing of your personal data you may withdraw the consent at any time. We will then not continue to process your personal data. Personal data that have been made public, e.g. published on social media, is usually not affected by a withdrawn consent however. Because of legal provisions we may also be prevented from immediately erasing your personal data.

• You have a right not to be subject to a decision based solely on automated processing, including profiling, which produces legal, or other significantly effects. The University of Borås does not make such decisions.

• You have a right to have the processing of your personal data restricted.

• You can request rectification or supplementation of personal data that is inaccurate or incomplete.

• You have a right, under certain circumstances, to have your personal data erased.

• You have a right to receive your personal data in a structured, commonly used and machine-readable format to transmit those data to another controller.

• You have a right to lodge a complaint to the supervisory authority (Integritetsskyddsmyndigheten).
Swedish version:

Samtycke till insamling och behandling av uppgifter om dig

Som en del av Masterprogrammet i biblioteks- och informationsvetenskap – digitala bibliotek och informationstjänster vid Högskolan i Borås utför jag en studie med syftet att undersöka svenska ungdomars informationssökning, källkritik och informationsanvändning.

Jag som utför studien skulle vilja att du lämnar vissa uppgifter om dig själv, närmare bestämt vilket utbildningsprogram du går och vad du uppskattar att ägna dig åt på fritiden, samt att du i en intervju berättar om hur du söker och använder information i skolan och på fritiden. Som uppgift räknas även ljudupptagning av din röst, varför jag behöver ditt godkännande även för detta.

Uppgifterna kommer att användas för att få en bild av skillnader i hur ungdomarna söker och förhåller sig till information i skolan och på fritiden.

Högskolan i Borås är personuppgiftsansvarig för behandlingen, som sker med stöd av artikel 6.1 (a) i dataskyddsförordningen (samtycke).

Uppgifterna kommer att användas av mig samt vara tillgängliga för lärarna på den aktuella kursen och centrala administratörer vid högskolan. Uppgifterna kan dock vara att betrakta som allmänna handlingar som kan komma att lämnas ut i det fall någon begär det i enlighet med offentlighetsprincipen.

Uppgifterna kommer att lagras inom EU/EES eller tredje land som EU-kommissionen beslutat har en skyddsnivå som är adekvat, dvs. tillräckligt hög enligt dataskyddsförordningen. Uppgifterna kommer att raderas när de inte längre är nödvändiga.

Resultatet av studien kommer att sammanställas i aidentifierad form och presenteras så att inga uppgifter kan spåras till dig.


Jag samtycker till att uppgifter om mig samlas in och behandlas enligt ovan.

______________________________
Underskrift

______________________________
Namnförtydligande

______________________________
Ort och datum
**Information om behandlingen av personuppgifter**

Din personliga integritet är viktig för oss på Högskolan i Borås. Därför är vi angelägna om att all behandling av personuppgifter sker på ett korrekt och säkert sätt i överensstämmelse med gällande lagar och förordningar. Högskolan följer bland annat dataskyddsförordningen, mer känd som GDPR.


**Dina rättigheter**


- Om du lämnar samtycke (godkännande) till behandling av dina personuppgifter kan du när som helst ta tillbaka samtycket. Vi kommer då inte att fortsätta att behandla dina personuppgifter. Uppgifter som har offentliggjorts påverkas däremot i regel inte av ett återkallat samtycke. På grund av lagkrav kan vi även vara förhindrade att omedelbart radera uppgifterna.

- Du har rätt att inte bli föremål för automatiserat beslutsfattande, inklusive profilering, dvs. beslut som fattas på teknisk väg utan mänsklig inblandning. Högskolan fattar inte sådana beslut.

- Du har rätt att få behandlingen av dina personuppgifter begränsad.

- Du har rätt att få dina personuppgifter ändrade eller kompletterade om de skulle visa sig vara felaktiga eller ofullständiga.

- Du har rätt att i vissa fall få dina personuppgifter raderade.

- Du har rätt att få dina personuppgifter i ett allmänt använt format för att överföra dessa till en annan personuppgiftsansvarig.

- Du har rätt att klaga på högskolans behandling av dina personuppgifter till Integritetsskyddsmyndigheten, som är tillsynsmyndighet.