



DEPARTMENT OF EDUCATION,
COMMUNICATION & LEARNING

NEGOTIATING STUDENTS' SOCIAL MEDIA AND PERSONAL DATA PRACTICES IN SCHOOL

From Problematization to Mobilization

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Thesis:	30 higher education credits
Program and/or course:	International Master's Programme in IT & Learning
Level:	Second Cycle
Semester/year:	Spring term 2023
Supervisor:	Svea Sabine Kiesewetter and Marie Utterberg Modén
Examiner:	Åsa Mäkitalo
Report No:	VT23-2920-002-PDA699

Abstract

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Keywords: Social media practices, Personal data, School contexts, Negotiation, Human and non-human actors

Purpose: This study aims to contribute to the existing knowledge by focusing on the translation process. In this context, the translation process refers to the negotiation and integration of students' social media and personal data practices from problematization to mobilization into the school setting. By adopting an analytical approach that treats elements such as school curriculum, policies, educational tools, and individuals on an equal footing, the study seeks to shed light on the dynamics and implications of this translation process. The study explores how these elements influence and negotiate students' social media and personal data practices, as well as how the negotiation of students' social media and personal data practices in Swedish school contexts is mobilized into teaching practices.

Theory: The theoretical approach of this study is informed by actor-network theory (ANT) and centres around the model of translation and its application to educational research.

Method: Data were composed from different sources, including: (i) transcribed data from workshop discussions, (ii) field notes, (iii) policy documents, (iv) national curriculum, and (v) additional interviews with teachers. The data were analysed using the theoretical framework of actor-network theory in the translation process.

Findings: The finding of this present study underlines that different actors in the network have different arguments during the negotiation in order to problematize students' social media and personal data practices within the scope of Swedish school contexts. However, their arguments from the negotiations assemble on a similar interest when it comes to their mutual objectives, which mainly focus on assisting and providing students with knowledge and skills to be more aware of their social media and personal data practices, intending to prepare students to be a democratic society in the digital world. The others finding of this study emphasize that the enrolment process of discussions about teaching personal data on social media practices in schools involves negotiation and influence from non-human actors, such as the curriculum. Furthermore, the study highlights the challenges teachers face, such as unfamiliarity with the concept of personal data on social media and the need for pedagogical tools to support their teaching practices during the mobilization process.

Foreword

I would like to thank my supervisors, Svea Sabine Kiesewetter and Marie Utterberg Modén, who have generously supported and encouraged me not only during the various stages of composing this thesis but also long before that, in the earliest phases of planning as well as exploring potential research areas during my internship within the RED research group.

Special thanks go to the other members of the RED Swedish research team: Thomas Hillman, Annika Bergviken Rensfeldt, and Christina Löfving. Their critical discussions and unwavering support over the past nine months have been immensely valuable in supporting my academic and research experiences. I would also like to express my gratitude to Marcus Kristensen for being an excellent team member during the internship and always making time to discuss the Swedish school system. Your input has greatly aided me in the process of writing this thesis. In addition, I would like to thank the RED International team for providing me with valuable international research experiences and discussions.

I would also like to thank our program leader, Elin Nordenström, who has always supported us during this master's program and guided us through these final steps. Thanks to all of my friends from the International Master's Programme in IT & Learning for making this academic journey wonderful. I would like to express my gratitude to the Swedish Institute Scholarship for the Global Professional program, which provided support and made this study possible in the first place. Last, but most definitely not least, I thank my wife, Widari, and our lovely son, Bagus Nara, as well as my family in Bali for putting up with me during this phase in my life, for believing in me, and for being understanding and supportive.

Heka Arcana Putra

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1. Introduction

Social media such as Facebook, Instagram, and TikTok refers to digital platforms that facilitate communication and sharing of content among users (Carr & Hayes, 2015; Dezuanni, 2021). Social media has become an integrated and constitutive part of many aspects of people's everyday lives and has changed the way civilization engages in social practices (van Dijck, 2013). More than 4.76 billion people in 2023 worldwide are actively registered and using social media, which indicates the significant use and influence of social media on society (Statista, 2023). Many people use and engage with social media for various purposes as it provides users with numerous benefits, such as a platform for communication, networking, and socializing with other users in virtual modes (Kaplan & Haenlein, 2010; Marwick & boyd, 2014; Taylor et al., 2022). In addition, social media allows users to access and share online information as part of their social media practices (Kennedy & Moss, 2015).

Whenever and wherever users engage with social media by accessing and sharing information on the platforms, digital data is created, often in the form of personal data (Pangrazio & Selwyn, 2018). It is important to acknowledge that sharing information and personal data plays a central role in participation, as it serves as a means to be a part of the social network (Marwick & boyd, 2014). Social media, by default, requires users to share even small amounts of their personal data through actions such as sharing content and engaging in activities like commenting, liking, and even viewing (Gross & Acquisti, 2005; Kennedy & Moss, 2015). Within these practices, social media has been problematized in relation to various issues concerning user personal data. Previous studies have highlighted that the personal data of users is controlled by social media companies without user awareness or understanding of where, how, or why the data is being collected and re-appropriated (Selwyn & Pangrazio, 2018). Personal data that users voluntarily provide to the platform as part of their social media practices is not limited to public posts and messages but also includes private data such as user locations, search histories, and even biometric data that can potentially harm users (Oatley, 2022). These data can be used to track and profile the user for future purposes, such as targeted advertising, content personalization, and even influencing political and social interests (Coudry & van Dijck, 2015; O'Neil, 2016; Parasnis, 2022; Pinchot et al., 2018).

This is particularly concerning when it comes to personal data practices on social media for users, especially young people who actively engage with social media services and spend a significant amount of their time on the platform (Décieux et al., 2019; Dezuanni, 2021; Martin et al., 2018; Taylor et al., 2022). Young people today are not only passive users but also actively generate content that contributes to the extensive amount of data collected through their social media practices (Martin et al., 2018). However, young people may not fully understand what content is appropriate for public sharing and how social media companies can use their personal data (Marwick & boyd, 2014; Pescott, 2020). In addition, research has consistently shown that despite being familiar with the technical functions and features of social media platforms, many young people lack a comprehensive understanding of the consequences of their online actions and awareness of the underlying motives behind social media practices (Acker & Bowler, 2018; Pangrazio & Selwyn, 2018; Pescott, 2020).

The ongoing discussions about social media use by young people and personal data issues have led to increasing calls for schools to assist in developing students' understanding and awareness of personal data in their everyday lives (Krutka et al., 2019). Several research studies and initiatives have been conducted to investigate the implementation of teaching students about personal data and social media practices in the school setting (Acker & Bowler, 2018; Livingstone et al., 2021). However, the majority of studies only focus on students' perspectives, with few examining how teachers discuss and teach about personal data and social media practices and the associated challenges in their teaching practices (Acker & Bowler, 2018; Pangrazio & Selwyn, 2018; Swart, 2021). In addition, most studies in this area primarily focus on the implementation phase in schools and assessing situations where social media and personal data practices are problematic for students. There are few studies exploring the process of how students' social media and personal data practices are discussed, negotiated, and

integrated into the school setting. Furthermore, the influence of various aspects in school contexts, such as educational policies and curriculum, on the integration or translation of students' social media and personal data practices into the school setting remains underexplored. Further research is needed to explore the process of integrating students' social media and personal data practices into the school setting and to examine how teachers in schools deal with these situations. This study aims to contribute to the existing knowledge by focusing on the translation process. The translation process refers to the negotiation and integration of students' social media and personal data practices from problematization to mobilization into the school setting. By adopting an analytical approach that treats elements such as school curriculum, policies, educational tools, and individuals on an equal footing, the study seeks to shed light on the dynamics and implications of this translation process. The study explores how these elements influence and negotiate students' social media and personal data practices, as well as how the negotiation of students' social media and personal data practices in Swedish school contexts is mobilized into teaching practices. The following research questions will be addressed:

RQ1: How are students' social media and personal data practices in Swedish school contexts negotiated?

RQ2: How are the negotiation of students' social media and personal data practices in Swedish school contexts mobilized into teaching practices?

Answering the posed questions will contribute to understanding how students' social media and personal data practices are negotiated in Swedish school contexts and it will also contribute to understanding how teaching about personal data and social media practices is mobilized within schools, how teachers approach these topics in their teaching, and what challenges they encounter during the process of mobilization.

The present study is structured as follows: Chapter one describes the background of the problem investigated in this study and highlights the importance and purpose of the research. It also outlines the research questions. Then the next section, the literature review chapter presents an in-depth perspective on the discussion of social media practices and associated concerns regarding personal data. Section two of the literature review chapter reviews the social media practices and awareness of personal data among young people or students. Finally, section three reviews the literature discussing social media, personal data, and literacy in school contexts. The third chapter outlines the theoretical framework, followed by chapter four, where the methods and ethical considerations are described. Chapter five describes the findings of the analysis of this study. Chapter six provides a discussion of the findings of this study, limitations, and suggestions for future research. The conclusion and implications are presented at the end of this paper.

2. Literature Review

In this literature review, main concepts of the study are briefly introduced, which focus on the ongoing discussion regarding social media practices, as well as how some existing research views the social media phenomena critically. Following this, literature focusing on school contexts is introduced.

2.1. Social media practices and concerns

During the last decades, social media has become an integrated and constitutive part of many aspects of people's everyday lives and has changed the way civilization engages in social practices (van Dijck, 2013) as social media allows users to, for instance, share and access content, as well as maintain online communication with other network users by using the services provided by the platforms (Kaplan & Haenlein, 2010; Marwick & boyd, 2014). The massive use and development of social media has also highlighted the central role of these platforms in defining and reconfiguring information and networks in society (van Dijck, 2013). In relation to this, van Dijck and Poell (2013) highlighted that the trends toward social media use and practices have also led to the development of various web-based applications, including social networking sites such as Facebook and Instagram and user-generated content such as YouTube, which have become essential components of the evolution of the connective media and social media practices in society. Despite their centrality, "social media" has been associated with various definitions. Social media generally refers to digital platforms that facilitate verbal and visual communication between individuals in virtual modes (Carr & Hayes, 2015). However, van Dijck (2013) for example pointed out that social media not only refers to platforms for connectivity but also embeds social and economic structures in its practices. The author highlighted that social media practices involve complex terminologies that include both human and non-human elements, such as the platform companies, algorithms, and regulations, that play a role in influencing network practices (van Dijck, 2013). These elements are assembled and connected to influence users when interacting with the platform services. In addition, social media practices also provide individuals or users with the means to see and be seen, and sharing information and data plays a central role in participation as a way to be part of the social network (Marwick & boyd, 2014). Taking a more critical perspective, Kaplan and Haenlein (2010) furthermore characterized social media as a collection of internet-based applications that are constructed on ideological and technological foundations, enabling the creation and exchange of user generated content and online information. Following this perspective, in this thesis, the term "social media practices" is used to describe how social media users engage, participate, and become part of social networking sites. Similar practices can be reflected in how users interact on social media by creating and exchanging information and content on these platforms. In this context, social media practices refer to the act of accessing and sharing information and content as part of their participation on social media platforms.

2.1.1. Personal data

Whenever and wherever users engage with social media by accessing and sharing information on the platforms, digital data is created, often in the form of personal data. According to Gross and Acquisti (2005) personal data of the users on social media can be classified as any information that relates to an identified or identifiable living person. For example, if the data can be linked to an individual, it is personal data; it can be directly linked to an individual, such as their name, email address, and any detailed information if the user has registered with the social media platform (Gross & Acquisti, 2005). Kennedy and Moss (2015) also mentioned that everything from interactions on the platform to the content of posts, photos, videos, and related technical details could be defined as users' personal data. They emphasized that it is important to understand that social media practices require users to share even small amounts of their personal data by sharing content such as text, photos, and videos and engaging with others through actions such as viewing, liking, and commenting (Kennedy & Moss, 2015). Trottier (2011) pointed out in his study that users are often not aware of how their online activities and digital information are being monitored, controlled, and stored on social media

platforms, leading to the creation of a digital dossier. Pinchot et al. (2018) define a digital dossier as a collection of data points that are commonly used by platform companies to construct a profile of an individual's online behaviour, preferences, interests, and other personal information. The platform companies monitor and control the user's digital dossier in order to track and profile the user for future purposes, such as targeted advertising, content personalization, and even political campaigns (Pinchot et al., 2018). In addition, while users use social media and may consciously volunteer personal data, various forms of data are generated without their awareness or understanding of where, how, or why the data is being collected and re-appropriated (Selwyn & Pangrazio, 2018).

Overall, it can be said that social media companies wield considerable power by collecting, aggregating, and disseminating user-generated content on their platforms, as argued by Pangrazio and Cardozo-Gaibisso (2020). The study highlighted that users generate massive amounts of data when they engage with social media, which these companies collect and store, including personal information obtained through their interactions with the platforms' services (Pangrazio & Cardozo-Gaibisso, 2020). The personal information collected from users by social media platforms is not limited to public posts and messages but also includes private data such as user locations, search histories, and even biometric data that can potentially harm users (Oatley, 2022). Zuboff (2015) describes these practices as surveillance capitalism, in which the personal data of social media practices are both a condition and an expression controlled by the platform companies. Furthermore, Parasnis (2022) emphasizes that the control of the social media companies has over this vast amount of information gives them implicit power to exploit their users' behavioural data for purposes such as selling human attention to platform services such as advertisers. These personal data on social media - including data provided voluntarily by users and behavioural data collected without their awareness - have become a scalable resource for profit and the economy (Couldry & van Dijck, 2015). Third-party companies, for example, use platforms like Facebook not only to display online advertising, but also to gain access to more than just ad space on the site such as demographics data (Krutka et al., 2019). Social media companies provide advertisers with access to target specific audiences based on users' general demographics by analysing their personal data from interactions on the platform and tailoring their content to individuals based on characteristics such as age, gender, location, language, interests, and other attributes (Parasnis, 2022). As a consequence, personal data on social media practices becomes part of aggregated collections that can be separated and recombined as desired for corporate purposes, rather than social ones (Couldry & van Dijck, 2015; Krutka et al., 2019).

2.1.2. Recommender system

Furthermore, social media platforms use algorithms as part of their recommender system to keep users engaged on their platform for an extended period and capture user interaction with their service (Reviglio & Agosti, 2020). These logic practices of algorithms enable the social media platform to display more information such as specific recommendations and contents to their users (Reviglio & Agosti, 2020). Eslami et al. (2019) for example, highlighted that algorithms used in social media primarily analyse users' personal data to identify their preferences, interests, and online behaviour patterns to create personalized content that keeps users engaged while using the platforms. Gillespie (2014) underlined that by continuously monitoring users' online activities, new algorithmic suggestions can be generated to engage users with content recommendations on social media platforms. In this sense, personal data is used as input to nudge users towards personalized content output, with algorithms functioning as both editorial and advertorial agents in a fully automated process (Gillespie, 2014). Furthermore, algorithms in recommender systems can provide suggestions for other information and contents that users may find interesting by analysing their engagement with content, such as posts liked, commented on, and followed user profiles (Anandhan et al., 2018). This process is managed by a recommendation algorithm and system behind the platforms, which collects data on user interactions, suggests new content, and adjusts its recommendations based on user feedback (Kaiser & Rauchfleisch, 2020). Milan (2015) argued that algorithms involved in social media practices are not neutral, but rather constitute mediated actions. These algorithms contain specific collective actions and entities that construct the process of social media practices. The study

observed that the recommender system significantly shapes people's options and can direct collective action in problematic ways based on algorithmic intervention and control from social media companies (Milan, 2015). Reviglio and Agosti (2020) drew attention to the issue of algorithms and content recommendation in social media and argued that the dominance of a few large transnational corporations, through social network effects, has led to the control of personal data and personalized content of users via their algorithmic systems. The study underlined that the use of algorithms for personalization tends to simplify individuals and society as a whole without acknowledging their complexities and contradictions, reducing them to mere profitability calculations. The authors summarised that social media practices are complex and involve multiple entities, making it challenging to develop strategies that can interrupt or even outlaw the foundational mechanisms of surveillance capitalism (Reviglio & Agosti, 2020).

Furthermore, social media and the use of algorithms within their practices are surrounded by a large amount of business secrecy, making it difficult for users to understand how these platforms operate and provide content (Reviglio & Agosti, 2020), as well as what data controls their decisions as a society for their democracy (Zuboff, 2015). For example, platforms like Facebook have become powerful entities that control algorithms and influencing public discourse and access to information, while reinforcing "hidden" intentions embedded in these algorithms to govern users' activities and decisions (Bucher, 2017). Moreover, O'Neil (2016) highlighted that algorithms are designed to shape users' online activities such as news consumption, social interactions, and perspectives on important societal issues. By controlling personal data and information, these platforms not only wield economic power through advertising but also significant social and political power by shaping the character and content of our digital public sphere in society as a whole, thereby threatening democracy (O'Neil, 2016). In addition, social media platforms use algorithms to govern media information and content, thereby limiting democracy by preventing users from choosing the information they receive and targeting audiences with specific content that influences not only individual opinion but also societal views in general (Entman & Usher, 2018).

To conclude, there are social media practices that are very prevalent among people today. These practices involve many people and bring both positive and negative consequences for users. For example, as mentioned in the literature, social media can make people's lives easier by connecting and helping them communicate with others from a distance through virtual modes. However, it is also concerning when it comes to personal data usage on social media, which is closely related to content recommendation and how people receive and access information. It is even more critical to understand how these social media practices can also influence people's lives and democracy. This is particularly concerning when it comes to young people engaging with social media services, as they may spend a significant amount of their time on the platform. It is essential to understand how young people are aware of the data they share on the internet and how they should understand if social media companies use their data for various purposes.

2.2. Young people's social media practices and awareness of personal data

Many young people today are using social media more than ever before, accessing and sharing digital information through multiple forms of digital media simultaneously. Social media platforms like YouTube, Facebook, Instagram, and TikTok have become major sources of social media entertainment for most young people today (Dezuanni, 2021). Several studies have been conducted to analyse the motives driving the use of social media by young individuals. Taylor et al. (2022) found that most young people today use social media platforms to maintain their social relationships and stay connected with their peers online. The study has shown that the platforms are being used to maintain social-driven practices in the network's community. These findings are consistent with previous research identifying socially driven motives for using social media among young people (Boyd, 2008; Décieux et al., 2019). While Pescott (2020) discussed how young people use social media to stay updated with the online environment by sharing and consuming online information and sometimes by

following and contributing to the trends that exist on social media sites. Similarly, Martin et al. (2018) highlighted that most young people contribute to their social media practices by sharing a massive amount of data every day, including posts, photos, and videos on the platforms. The study has shown that for many young people, activities such as content generation and sharing information are important aspects of their daily practices on social media sites. As a result, young people today are not only passive users but also actively generate content that contributes to the extensive amount of data collected through various digital platforms, services, and online applications (Martin et al., 2018). However, despite being familiar with social media platforms and their features, many young people lack a comprehensive understanding of the consequences of their actions and the underlying motives of platform providers and may not fully understand what content is appropriate for public sharing and how social media companies can use their personal information (Marwick & boyd, 2014; Pescott, 2020).

Pangrazio and Selwyn (2018) conducted a study on how young people respond to personal data issues and social media practices. They found that young social media users do have concerns about how their personal data is reconstituted and reused in data assemblages. While the young people recognized issues around how their data were used and monitored, such as geo-locational tracking and its potential to trace their movements, they still did not fully grasp the complexity of personalization issues that could result from these activities such as targeted advertise and contents (Pangrazio & Selwyn, 2018). Therefore, the complex issues of personal data on social media practices were not immediately understood by all, especially among the youngest (Pescott, 2020). The study suggested that more research is needed in order to develop and assist the critical understanding among young people, especially when it comes to personal data literacy in social media practices (Pangrazio & Selwyn, 2018). Another study conducted by Acker and Bowler (2018) aimed to explore how young people understand data creation and management, as well as the devices they use in their daily lives. The study specifically focused on the perceptions and awareness of teenagers regarding personal data, including their beliefs about the nature of data in digital platforms and mobile devices. The study investigated how young people in public libraries in Pittsburgh conceive of personal data in relation to networked and mobile technologies. The study found that while young people offered various explanations of data's role in their lives, they did not regularly reflect on issues of data privacy, surveillance, and ownership. Furthermore, they did not necessarily see themselves as data producers. The study highlighted that participants understood that apps and online services could access location information and other types of data stored on their mobile devices. However, few of them considered about this through the lenses of privacy, rights, or how they should manage to understand privacy on social media practices. These findings suggest that education regarding data literacy on social media practices is needed to assist young people in critically reflecting on data usage and perceiving themselves as individuals with data rights while using digital platforms (Acker & Bowler, 2018).

In relation to the complexities surrounding social media practices and young people's awareness of personal data, Marwick & boyd (2014) underlined that young people are generally unaware of the regulations, such as terms and conditions, when dealing with platform services. The study also highlighted that the complexity of digital platforms, such as social media, with their privacy settings and various agreements often leave young people feeling powerless, resulting in personal responsibility to describe their approaches to managing information flow in online spaces (Marwick & boyd, 2014). In addition, Swart (2021) examined how young people understand and feel about content influence and recommendation in relation to personal data and algorithm systems on social media. The study found that while young people have a natural and experiential understanding of social media practices and content, they may need to be made aware of these issues, particularly personalized information and social media influence. In addition, the study highlighted that most young people do not understand precisely why there is a lot of random information and feeds when using their social media platforms, emphasizing the importance of developing understanding about these issues for young people (Swart, 2021). Furthermore, as highlighted in the literature on social media practices among young people and their awareness of personal data on social media, developing the

understanding and critical thinking skills of young people or students regarding the implications and potential risks of social media usage is important for preparing them to be active citizens in the digital world (Brookfield, 2015). Schools and teachers have been suggested to assist students in developing their awareness of social media practices and the implications for personal data on social media. Teachers must address the important aspect of critical thinking to develop students' understanding of social media practices and personal data, in order to raise their awareness of these issues (Krutka et al., 2019). The following section reviews how discussions of social media practices and personal data are being addressed in school contexts.

2.3. Social media, personal data and literacy in school contexts

The ongoing discussion about social media use by young people and personal data issues has been one of the topics that has led to increasing calls for schools to help develop young people's understanding and awareness about personal data in their everyday lives (Krutka et al., 2019). Given the importance of teaching about social media in schools, it is essential to note that teaching social media practices involves not only technical skills but also social and critical aspects, particularly with regard to personal data on social media (Krutka et al., 2019; Pangrazio & Selwyn, 2018). As digital platforms become more prevalent and influential in modern society, students must develop critical thinking skills and an understanding of personal data in relation to their social media practices (Brookfield, 2015; Pangrazio & Cardozo-Gaibisso, 2020). It is important to acknowledge that teaching and understanding about personal data on digital platforms, such as social media, is related to the concept of 'literacy,' particularly data literacy when it comes to educational contexts (Markham, 2019; McCosker, 2017). However, there are ongoing discussions regarding the use of the term 'literacy,' especially its relation to other types of literacy such as digital, media, and data literacy, when referring to the understanding of personal data and social media practices. According to Markham (2019) data literacy is commonly assembled together with media literacy and digital literacy. However, it is important to distinguish data literacy from these fields. Media literacy, as defined in many curriculums, focuses on developing young people's creative and communicative abilities and helping them become critical consumers of media (Buckingham, 2019; Zhang et al., 2020). It also addresses how students can function as citizens in media-rich societies, with a particular emphasis on news and other forms of expressive media (Nettlefold & Williams, 2021). In contrast, digital literacy focuses on interactive technologies and encompasses both practical and critical literacies (Knobel & Lankshear, 2006). It aims to enable young people to engage safely and ethically with digital media (Livingstone et al., 2023; Sefton-Green et al., 2009). While there are some connections between media, digital and data literacy when it comes to social media practices, data literacy involves a unique set of skills and dispositions that are essential in a data-driven world (Acker & Bowler, 2018; Fotopoulou, 2021; Selwyn & Pangrazio, 2018). There are various definitions of data literacy. However, this study follows the perspective of Pangrazio and Sefton-Green (2020) which underlines that data literacy refers to the skills and knowledge necessary for individuals to have agency and a critical understanding of digital data in a data-driven world. This includes understanding and questioning the technological infrastructure and political economy of digital platforms, as well as skills and knowledge to protect the privacy and personal data in digital environments (Pangrazio & Sefton-Green, 2020).

There have been discussions in the literature on teaching students about personal data on social media in school contexts and how it relates to the concept of data literacy. Livingstone et al. (2021) conducted a study on the implementation of data literacy in schools, focusing on online and social media practices related to personal data and privacy. The study found that students are generally less aware of how institutions or companies operate in the digital environment, such as how social media uses and collects their data. The study also highlighted that simply teaching functional skills, such as managing privacy settings or dealing with privacy options, is not enough for students to criticise their rights as agents and citizens in a complex data-driven society. Instead, they also need a critical understanding of the networked data economy, which relies not only on provided data but also on derived or profiled data (Livingstone et al., 2021). Robertson and Tisdall (2020) also highlighted that

teaching students about personal data on social media within the school context will equip students with the skills to become data citizens who are aware of the current uses of data in society. This will enable them to use data to make informed decisions in their lives and actively engage in critiquing the societal implications of future uses of data, especially in digital environments (Robertson & Tisdall, 2020). These skills and understanding can also support students in contributing to becoming a democratic society in a data-driven world (O'Neil, 2016; Robertson & Tisdall, 2020). In addition, teaching personal data on social media practices requires more than just teaching a basic skill like browsing, searching, filtering, evaluating, and managing data (Gleason & Manca, 2023). It also needs to involve the understanding on how personal data can be left on the platforms and potentially used in profiling, data recirculation, and other controversial practices (Pangrazio & Selwyn, 2018). Personal data issues in social media practices can encompass privacy and security concerns, data processing through algorithms to influence user behaviour, user agreement guidelines, and ethical considerations that may impact the (re)use of personal data (Pangrazio & Selwyn, 2018). Although teachers are aware of their students' social media practices, they often have limited understanding of privacy and personal data issues (Marín et al., 2021). Moreover, teaching about personal data on social media practices as part of data literacy education, presents challenges since conceptions and perspectives of personal data and data literacy in education and school contexts extend beyond data science and visualization to encompass a broader range of skills and knowledge (Gebre, 2022; Pangrazio & Sefton-Green, 2020). A limited approach of merely understanding data literacy as data visualization and data science poses a challenge as it may not cover data literacy comprehensively enough to address the use of data in other contexts, such as concerns about personal data and surveillance capitalism (Gebre, 2022; Pangrazio & Selwyn, 2018; Zuboff, 2015). As a result, the current expectation that schools should educate students about personal data is difficult to achieve due to practical and conceptual obstacles, such as limited understanding of the concept of data literacy in school contexts (Gebre, 2022), insufficient technological support to teach about personal data (Pangrazio & Selwyn, 2021), and teachers' limited understanding of the complexity of contemporary data literacy approach (Raffaghelli & Stewart, 2020), which places limitations on their ability to teach personal data on social media practices (Gebre, 2022) particularly if schools aim to promote critical perspectives on the ongoing discourse about personal data in contemporary digital society (Selwyn & Pangrazio, 2018).

The literature review has highlighted concerns regarding personal data on social media practices, particularly among young people. To address these concerns, teaching about personal data on social media has been suggested as a means to increase awareness and develop data literacy among young people. However, translating the discussion of personal data on social media practices into school contexts remains fraught with challenges. Therefore, it is important to explore how discussions about personal data on social media practices are framed within school contexts. This study aims to contribute to the existing literature by exploring how students' social media and personal data practices are negotiated in Swedish school contexts and how the negotiation of students' social media and personal data practices in Swedish school contexts is mobilized into teaching practices.

3. Theoretical Framework

The theoretical approach of this study is informed by actor-network theory (ANT) and centres around the model of translation and its application to educational research. This section aims to provide a brief overview of actor-network theory and the translation process. In addition, it will highlight the relevance of this theoretical framework to support the analytical lens of this study

3.1. Actor Network Theory

Actor-network theory (ANT) emerged in the 1980s with the work of Bruno Latour, Michael Callon, and John Law in the sociology of science and technology. It aims to describe and explain the entanglement of the social and the technological aspects (Latour, 2005), and provide analytical approaches that break down central assumptions about knowledge, subjectivity, the real and the social, and explain the complex interrelationships, for example, the social and technical aspects of society (Latour, 1996). The theory, which has its roots in the sociometrical perspective, seeks to understand the nature of societies by tracing how different human and non-human entities are assembled, associated, exert force, and persist or decline over time as an entangled network of actors and relations (Fenwick et al., 2011). ANT focuses on the intricate negotiations at the points where different entities come together, including humans and the various components that constitute human and non-human elements (Latour, 1996). These processes highlight not only human interactions, but also the role of technologies, spaces, artefacts, and objects in those interactions (Fenwick & Edwards, 2010).

According to actor-network theory, society and social phenomena are not considered pre-existing objects of study, but instead emerge through enactments of different forms of association, known as network effects (Law, 1992). The social is seen as something that is constructed, and only becomes possible through its own representation as a separate domain. ANT investigates how human and non-human entities come together and interact in the performance of various domains, including the social, economic, natural, and educational spheres (Fenwick et al., 2011). The main goal is to gain a precise understanding of how these entities come together and manage to maintain their associations, even if only temporarily, to produce agency and other effects, such as ideas, identities, rules, routines, policies, instruments, and reforms (Fenwick & Edwards, 2010). All of these things are, in actor-network theory, effects of particular assemblages that manage to gather and transform human and non-human elements in such a way that they are able to link together and act (Fenwick et al., 2011). The emphasis of ANT is on the actions and interactions of artifacts and objects with both human and non-human entities, rather than their meaning or interpretation, and these entities may connect with other things in ways that attach them to a specific association or pretend to connect, partially connect, or feel disconnected and excluded even when they are (Latour, 2005).

3.1.1. ANT assumptions and terminology

The literature on ANT discusses the differentiation between actors and actants. Although actors are entities with the agency that performs work, actants are the entities that enter the network and enable the activity. Actants can appear to behave with particular intentions, morals, realization, and subjectivity, resembling an actor with the agency, when they become a performing part of the network (Fenwick et al., 2011). Therefore, actants can be seen as potential actors with the active exchange process of an actor or actor entities that do things – an actant with a character (Fenwick et al., 2011; Latour, 2005). Thus, in ANT studies, human and non-human entities are considered as effects that result from relations, shifting the focus away from human attention and agency as the sole driving force behind society and history with the aim to analyse the specific ways in which these entities come together, manage to stay connected and form collectives or networks that generate force, agency, and other effects, including knowledge, identities, routines, policies, curriculums, and other elements (Fenwick et al., 2011).

Key ANT assumptions include heterogeneity, symmetry, and agency. Heterogeneity refers to the presence of different and multiple actors in a network, including human and non-human actors with different characteristics, interests, and perspectives (Law, 1992). Actor-network theory emphasizes the importance of recognizing and studying the heterogeneity of actors in order to understand social phenomena (Law, 1992). In this context, a network of heterogeneity actors can be viewed as a composition of social, technical, textual, and naturally occurring actors. These actors can come together into stable associations or alliances at different stages or periods of their life cycle (Fenwick & Edwards, 2010). The stability of this actor network depends on the dominance of one or more actors and the propensity or loyalty of human and nonhuman actors toward the network in symmetrical way (Whittle & Spicer, 2008). The concept of symmetry in actor-network theory states that human and non-human actors should be treated equally, without giving preference to one over the other (Latour, 2005). Social phenomena are shaped through symmetrical interactions and relationships among diverse actors, and each actor has the potential to influence social outcomes (Latour, 1987). Furthermore, it is assumed that all things are capable of exerting force and connecting with each other, changing and being changed by each other, as networks form and continue to expand over wide spaces, long distances, or periods of time (Fenwick et al., 2011). However, this notion of symmetry has been subject to some debate, as there may be circumstances in which treating humans and non-humans entirely symmetrically is not feasible. Despite this, ANT emphasizes the importance of recognizing the contributions of all actors in shaping social phenomena (Latour, 2005).

Furthermore, actor network theory highlights the concept of agency as an important aspect of the theory, which refers to the ability of actors to act and entangle themselves with their surroundings. ANT links the concepts of actor and network to overcome the duality between agency and structure, which has been a longstanding issue in sociology (Ponti, 2010). The agency is not limited to human actors but can also be extended to objects and abstract concepts such as laws, policies, and guidelines (Fenwick & Edwards, 2010). In ANT perspectives, it is important to understand how actors shape and influence social processes in their network, and how their agency can be traced through networks of associations and interactions that assemble one another (Latour, 2005). For example, teachers may be assumed to have agency in their own classrooms, but their agency is entangled with external factors and actors, including government policies, curriculum, the school environment, and the materials and technologies available to them (Fenwick & Edwards, 2010). These elements can either facilitate or hinder teachers' ability to exercise agency and, therefore, must be considered when interpreting their actions and decisions.

3.1.2. Network in ANT

In the context of actor-network theory, network involves establishing symmetrical relationships among entities, including people and objects. ANT scholars argue that forming networks and assemblages results from inter-actor relations and negotiations, though they acknowledge that such networks may not always be visible (Law, 1992). The process of creating a network involves simplifying the diverse identities of actors within an interaction system, referred to as a network actor. These actors acquire their identities through connections with both human and non-human elements and the process are formed through a process of translation, where all actors enter the network. This process involves negotiations between human and non-human actors to determine their interests and actions within the network. In ANT, stabilized networks are often viewed as single entities, covering the negotiations and interactions that led to their formation. ANT takes a relational approach to social phenomena, emphasizing the continuous (re) shaping of social structures through micro-level interactions and negotiations (Law, 1992). This perspective provides a valuable means for analysing diverse environments and uncovering previously unrecognized relations while also questioning previous assumptions about how social structures are formed and maintained. In this study, networks related to the issues of social media practices and personal data of students are not limited to human interactions alone, but also encompass interactions with various materials, such as policies, curriculum, and environments. The actor-network theory provides a comprehensive framework for understanding how

the negotiation of personal data and social media practices in schools are regulated, maintained, and problematized across different domains in educational contexts.

3.1.3. Translation in ANT

An actor-network is a complex system of interconnected entities that share common interests, such as individuals, organizations, platforms, and regulations. When these entities interact, they can influence and change each other in the process of forming links, a process known as translation. Translation is a process in which elements are transformed, organized, relocated, or reconfigured by actors in an attempt to overcome resistance and stabilize the network (Latour, 1987). Actor-network theory considers translation as a fundamental aspect of social phenomena. According to Latour (2010), translation involves multiple processes, such as transcription, transposition, displacement, and transfer, which simultaneously transport and transform entities. Translation is a form of action, but its origins are often ambiguous (Latour, 2010), as there are many different factors that contribute to the outcome, rather than a single cause and effect. Translation occurs when human and non-human entities are connected and interact, resulting in changes that allow them to become part of a coordinated network of entities and actions (Fenwick et al., 2011). The process of translation leads to negotiation and the formation of networks or assemblages of entities in which relationships and connections are established. In the process of forming connections, the entities involved work together to translate or adapt to become part of a network that coordinates different things and actions (Law, 1992). According to Callon (1991), the degree of configuration or association among actors in the network of the translation process determines the level of collaboration among them. However, association does not automatically mean that all actors have the same interests but rather that they can collaborate despite their differences. In addition, translation in ANT provides an analytical viewpoint on how network practices are changed, establishes roles and identities, and defines the conditions for mutual relationships.

Callon (1986) outlines four moments in the translation process that are important for the creation of a network. The first stage is problematization, in which a specific entity or problem is framed as an obligatory passage point that establishes the network's emergence parameters. In the second stage, intersement, different entities are attracted or invited to this network and negotiate their connection and role within the emerging network. This phase is a selection process that determines which entities will be included in the network and which will be excluded. Then, during the enrolment phase, the selected entities assume new identities and are translated in specific directions, thereby establishing their roles within the network. In the final stage, mobilization, the network gains broader acceptance and its translations are extended to additional locations and domains, making it more durable, influential potentially irreversible translations. According to Callon (1991), irreversibility occurs when it becomes impossible to return to a point where alternative possibilities exist. For example, digital platforms such as social media become irreversible when they become an integral part of human life and essential tools for social interaction, allowing users to access and share information, which plays a crucial role in modern social life. Discussing social media practises and their implications for students in school entangles human and non-human actors within the process, influencing the dynamics of the network. From an actor-network theory perspective, a network is an assembly of materials that are brought together and linked through translations that serve specific functions. Furthermore, translation is an ongoing process of negotiation between human actors and delegates of non-human actors, aimed at establishing a shared set of definitions and network relations, and promoting dialogue and understanding of the network phenomenon.

3.2. ANT analytical lens for this study

The ANT analysis focuses on exploring how a network is created and sustained by the negotiations of the actors involved in the process. This study intends to explore the ongoing discussions surrounding the importance of teaching about social media practices to students in Sweden, starting from the problematization of social media practices to the mobilization of discussions in school contexts, and

exploring how such actors negotiate and entangle these discussions within the translation process in the network. Within school contexts, different elements such as policies, curriculum, teachers, school environment, and technology are considered to have the potential to influence other components in the network, thereby possessing agency (Fenwick et al., 2011). The ANT framework is useful for this study to understand the significance of different actors, how networks emerge and come together, and to perceive alliance as a heterogeneous actor network with both human and non-human actors. Within the context of this study, the network may function for short or long periods during the different stages of the translation process, with varying degrees of associations among the dynamic actors. When important issues related to digital platforms, such as social media practices, are discussed in school contexts, different actors come together to form and stabilize the network, assemble connections, and interact with each other. This highlights the importance of exploring how different actors negotiate within the network and discuss issues related to social media practices and personal data within school contexts.

This study proposes using the four moments of translation in actor-network theory as a practical analytical approach for organizing the study and providing an analytical lens to guide data collection and analysis. The framework of the four moments of translation offers a structured process for exploring how different actors come together and negotiate certain aspects of the network, from problematization to mobilization. Actor-network theory provides a framework for examining how education is constructed as a network of practices and acknowledges the existence of different interconnected worlds that may be temporarily linked (Fenwick & Edwards, 2010). In addition, ANT provides a set of linguistic and conceptual tools that allow us to understand complex uncertainties, intricate objects, and apparent contradictions inherent in many educational problems (Fenwick et al., 2011). For instance, in the school contexts, the complex interconnections between schools and their practices are assembled with other factors that contribute to the stabilization of the network. The actor-network theory approach recognizes that non-human actors exert a significant influence within a network in conjunction with human actors. This analytical approach ensures that some elements within the network that form the negotiation of social media practices among young people are taken into account during the analysis, thus giving attention to some actors involved in the network. Moreover, by acknowledging the presence of multiple realities within the actor-network theory, the analysis can address potential variations in the conceptualization of the heterogeneous actors within the network. This approach provides an understanding of how different actors negotiate, come together, and influence one another, as well as guides the analytical lens for this study.

However, the ANT approach has been the subject of debate and critiques that should be taken into consideration. Certain critiques of ANT have indicated that it fails to appreciate the fundamentally human and subjective inflows of action. ANT has been criticized for not giving enough attention to the histories and trajectories of various actors, including human values and motivations (Fenwick & Edwards, 2010). This suggests that perhaps ANT should modify its stance of radical symmetry to admit that humans are different because they make symbolic meaning of events and exert intentional action (Murdoch, 1998). ANT's ontology of folding and unfolding networks is incompatible with any agency or structure dualism, as it does not conceptualize agency as an individualized source of empowerment rooted in conscious intentions that mobilize action (Latour, 2005). Instead, ANT focuses on the circulating forces that get things done through a network of elements acting upon one another. This critique is misplaced as Law (1992) has long highlighted that symmetry in ANT is an analytical, not a moral, position, and it does not imply that humans would be denied any rights or exempted from any responsibilities. Action is not done under the full control of consciousness; rather, action should be seen as a node, a knot, and or assembly of many sets of agencies that have to be slowly entangled or might disentangle (Fenwick & Edwards, 2010). Despite these criticisms, ANT remains a valuable approach for analysing complex social phenomena (Latour, 2005).

4. Method

This section provided an overview of the contexts of the study, the procedure and process of data collections and analysis, and ethical considerations. It also presented a detailed explanation of how the theoretical framework guides this study and provides a critical lens throughout the process of data collection and analysis.

4.1. Contexts

This study was conducted as part of the research project RED (Reconfigurations of Educational In/Equality in the Digital World). Since September 2022, I have been an intern with the RED research group at the Department of Applied IT, Gothenburg University. The research project is an international collaboration involving six countries (Argentina, Botswana, Germany, Mexico, South Africa, and Sweden). The project aims to shed light on the impact of digitalization and digital platforms in educational contexts. The project explores the ways in which policies, infrastructures, and practices in schools address or contribute to inequalities and concerns in educational practices. The project has a sub-theme that focuses on analysing and examining data profiles from schools using Infra Reveal. Infra Reveal is a tool that enables us to view the data exchanged while using the internet (RED: Reconfigurations of Educational In/equality in a Digital World [RED], 2023). This entails analysing how data from schools is collected, used, and shared by digital platforms, as well as how these practices may contribute to or mitigate concerns and inequalities. In relation to the sub-theme of the project, this master's study intends to explore the specific discussion of students' use of digital platforms, particularly social media, and how these practices and discussions are entangled and negotiated in school contexts. Furthermore, this study is an iterative process of data analysis that has influenced the selection of data for the data collection process. The iterative process of the study will be explained in detail in the data analysis section of this chapter.

4.2. Data collection

A critical aspect of conducting qualitative research is a coherent and consistent approach that aligns the theoretical foundation and assumptions with the research questions, the method of empirical data collection, the units of analysis, and the instruments used for analysis (Mason, 2017). To guide the process of data collection and analysis for this study, the theoretical framework of actor-network theory (ANT) was used to provide an analytical lens for the structure and process of data collection and analysis. According to Latour (2005) ANT serves as both an analytical framework and a methodology. This implies that ANT can function as a tool for examining the world as well as a set of methods or instruments for representing and analysing the diverse actors and their interconnections in networks (Latour, 2005; Law, 1992). The study employed a detailed analytical approach that involved the four moments of the translation framework: problematization, intersement, enrolment, and mobilization. These were used to structure the data collection and analysis process.

The theoretical framework of the four moments of translation in ANT is useful in guiding the data collection for this study. It aims to collect data from several actors who negotiate and entangle discussions within the translation process in the network (Latour, 2005). In school contexts, different elements such as policies, curriculum, teachers, school environment, and technology are considered to have the potential to influence other components in the network, thereby possessing agency (Fenwick et al., 2011). Thus, in order to build the network for data collection, this study has chosen some actors that contribute to the negotiation of students' social media and persona data practices in Swedish school contexts. These actors include policy documents, national school curriculum, and teachers. The rationale behind selecting these actors is to explore their interrelationships, how they are entangled, influence each other, and negotiate the discussion of students' social media and persona data practices in Swedish school contexts. Another factor that led to the selection of these actors was due to the time limitations of this study. As mentioned earlier, this study is an iterative process, which means that time

may limit the exploration of other actors, while others data are being analysed as part of the scope of this study. Since this study was conducted within the research group where I completed my internship, some of the data were contributed by the transcribed and field notes data of the RED group. Table 1 illustrates the details of the data, indicating which part of the data was collected by me (the author) and which data were contributed by the RED research group.

Table1. Description of data collections

No	Type of the data	Who collected the data	The details of the data
1	Transcribed data from the group discussion of Infra Reveal workshops	RED	Three transcribed data from the group discussion of Infra Reveal workshops that consist of: <ul style="list-style-type: none"> • Infra lesson planning 2023-01-09 • Infra after lesson 2023-01-26 • Infra after lesson 2023-01-27
2	Data from the field notes	RED	Three field notes from the RED group data <ul style="list-style-type: none"> • Field notes 2022-10-05 • Field notes 2022-10-19 • Field notes Infra Reveal lesson
3	Policy documents	The author	Two policy documents by Swedish government <ul style="list-style-type: none"> • National Plan for the Digitalization of the School System • Proposal for a National Digitalization Strategy for the School System 2023-2027
4	National school curriculum	The author	Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22
5	Interview with teachers	The author	Additional interviews were conducted with two teachers who were part of the Infra Reveal workshops.

The details of the data collected for this study are explained below, with a detailed explanation of the data, the reasons for choosing these source of data, and other details that support the argument of the data collection for this study.

4.2.1. Transcribed data from the group discussion of Infra Reveal workshops

This study used three transcribed from the group discussion of Infra Reveal workshops, consisting of one transcribed from lesson planning and two transcribed from other workshops held after teaching in the classroom using Infra Reveal. The aim of the Infra Reveal workshops was to discuss with teachers how to teach students about data exchange, data packages, and the importance of personal data when using the internet and digital platforms such as social media. The workshop activities were group discussion, both for planning the lesson and for workshops held after the lesson. There were two teachers and researchers who participated during the workshops. The group discussions were recorded, and all participants were informed and signed their consent. The recordings were then transcribed by the RED group and uploaded to the group channel so that all project members could access the data. This study was given permission by the RED group to use the data to support this research. The reason for using this data in the study was that it could help answer the second research question, which

related to how teachers in schools discuss and negotiate about students' social media and personal data practices.

4.2.2. Data from the field notes

For this study, three field notes were used from a field study conducted by RED research members in school. Two of the field notes consisted of observations and discussions with teachers before and after their teaching lessons. The other field note documented the teaching activity in the classroom, where the teacher and researchers discussed and taught about data exchange, data packages, and the importance of personal data when using digital platforms such as social media. Here, the three field notes and observations during the field study involve the same teachers who participated in the Infra Reveal workshops. In addition, because this study used secondary data from the field notes conducted by other members of the group, I conducted discussions with these members to obtain an overview and specific details about the activities. The reason for using these field notes was that they supported the data at different stages of the translation process, particularly in the problematization and intersement phases, to observe in detail how teachers negotiated and showed interest in teaching their students about social media practices. The other field note also provided detailed data on how teachers taught about personal data on social media practices in the classroom.

4.2.3. Policy documents

Two policy documents have been collected to support the data collection for this study. The first document, the National Action Plan for the Digitalization of the School System (Nationell Handlingsplanen för Digitalisering av Skolväsendet), was collected to determine how this actor engaged in and negotiated discussions related to the use of digital platforms and their impact on students. It also aimed to explore how this actor influenced other actors within the network, as this actor is the action plan of the entire school system in Sweden. The second document collected for this study is the Proposal for a National Digitalization Strategy for the School System 2023-2027 (Förslag till Nationell Digitaliseringsstrategi för Skolväsendet 2023-2027). The document includes two overarching goals, with associated sub-goals, based on seven priority areas where the school system needs to improve. One of these priorities is to facilitate student learning and develop their ability to use digital technologies and platforms responsibly and safely while understanding how digitalization impacts individuals and society. This document was collected to give an understanding of the ongoing plan from the Swedish government for developing students' digital competence, including the use of digital platforms and their understanding of the impact of these platforms, particularly in light of current issues related to social media use. The study was limited to these two documents due to time constraints. However, these two policy documents were used to support data collection for this study because these actors play an important role in the network surrounding the discussion of digitalization in Swedish school contexts.

4.2.4. National school curriculum

This study collected documents from the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22. The curriculum identified the need for students to develop the ability to navigate and act in a complex reality with a large flow of information, increased digitalization, and a rapid rate of change. The reason for choosing this document is that it has been identified as an actor who could contribute to and influence decisions about teaching important aspects and practices related to students' social media and personal data practices in the contexts of Swedish schools. This data collection aimed to analyse the primary school curriculum for grades 7-9, specifically focusing on the subjects of Social Studies and Technology. These grades were selected because of the project and workshops conducted by the RED research group with Infra Reveal, which primarily focused on teachers in these grades. In addition, Social Studies and Technology subjects were selected because these two subjects primarily addressed the impact of technology and digital platforms and emphasized the need for teachers to teach students about understanding the effect of technology and digital platforms as well as developing the skills required to navigate the practices when dealing with the online environment. Examining these subjects strived to gain a deeper understanding of how the

Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 negotiate the need to teach the students about personal data on social media practices.

4.2.5. Interview with teachers

For additional data in this study, two teachers who participated in the Infra Reveal workshops within the RED group projects were interviewed. The purpose of conducting additional interviews was to gain a more understanding and discussion with the teachers about the importance of teaching students about personal data issues on social media practices. The interviews were conducted online using a semi-structured format to gather more data and fill in missing information in the transcripts and field notes, as well as to obtain detailed explanations from the actors in the network. The selection of semi-structured interviews was based on the flexibility of their structure, which allowed teachers to express their opinions and personal experiences in their own words while still providing a degree of predetermined interview structure (Tracy, 2013). In addition, this phase of the research focused on teachers' views and opinions based on their knowledge and teaching experiences. Therefore, a semi-structured interview was a suitable method to gain an in-depth understanding and perspective from the teachers on how they viewed social media practices of their students and how social media should be taught in schools (Adams, 2015). Furthermore, to avoid interfering with the teachers' responses, the interviewees were investigated naturally until the point of the interview was reached, while remaining open to new insights and opinions (Sharp et al., 2007). The interview guide is provided in Appendix 1 of this thesis. Informed consent was not required for these interviews since the teachers had previously signed the informed consent as part of the RED research project. The recorded data were transcribed and used for data analysis.

4.3. Data analysis

This section of analysis will provide a detailed explanation of the data analysis process in this study. It began with the initial analysis of the process and then moved on to a more detailed analysis using the four moments of translation in actor-network theory.

4.3.1. The process

There were several steps conducted during the data analysis process of this study. The first step was to become familiar with the transcribed data and field notes from the RED group, including 31 field notes and 18 transcribed interview and group discussion. In the initial stage, all the documents were analysed and read in detail, and documents that mentioned and discussed about social media and personal data practices were selected. The data for this study were analysed through an iterative process of reading and highlighting to identify important details. As actor-network theory was chosen as the theoretical framework for this study, the data were analysed again in more detail to examine and find the four moments of translations in the data. Following an iterative process of reading and highlighting the field notes and transcript data, three transcribed documents and three field notes were selected for further analysis of this study. From this analysis, the data collection was expanded to include two policy documents and one national curriculum to analysis as actors in the network. However, the analysis of these documents indicated that additional data were needed to support the statement on the problematization, interestment, and enrolment stages and to have a more detailed discussion with the teachers regarding the students' social media and personal data practices. Therefore, additional interviews were conducted with the teachers that part of Infra Reveal workshop to support this study.

4.3.2. Data analysis using the four moment of translation

The data analysis was guided by the theoretical framework of actor-network theory. The four moments of translation, consisting of problematization, interestment, enrolment, and mobilization, were used to guide the process and provide the analytical lens throughout the data analysis. Since this study aimed to explore the translation process of the negotiation of students' social media and personal data practices within the school contexts and also to explore translation process of these negotiation, the

theoretical framework provided a suitable guideline with the four moments of translation to approach the data analysis procedure. The detailed process of data analysis is conducted after all of the data has been collected, following the initial iterative process mentioned earlier in the process section above. The analysis focused on using the framework of the four moments of translation and analysis to identify where these four moments of translation appear in the data. The aim was not only to identify the themes or words mentioned in the data, but to delve into the process itself and understand how these actors are negotiated and entangled to exert influence and come together in the network to form the translation process.

A series of iterative readings and analyses were undertaken to refine and organize the findings in accordance with the four moments of translation. The findings from the analysis were placed within each process and a code book in relation to the four moment of translation was kept to document the process. For example, in the problematization process, the analysis focused on how different actors negotiated and framed the problem and the importance of teaching students in Sweden about social media and personal data practices. In the intersement process, the analysis focused on why the actors were interested in the discussion and what their overarching goals were in initiating these discussions. In the enrolment process, analysis focused on how these discussions were enrolled and has become widely accepted in the network. Finally, in the mobilization process, the analysis focused on how these discussions were mobilized and how social media and personal data practices were discussed and taught in schools. The final step in the data analysis was to structure the findings from the data with the corresponding four moment of translation.

4.4. Ethical considerations

This study has been conducted as part of a research group in RED. The data collection procedures and ethical approval had already been obtained from the Etikprövningsmyndigheten (Swedish Ethical Review Authority). The teachers who participated in the project had already signed the informed consent form. Therefore, informed consent was not needed during the additional interviews conducted for this study. However, this study is aware of some ethical issues in educational research, for example, the rules and guidelines established in Swedish research, alongside good research practice (Swedish Research Council, 2017) and the General Data Protection Regulation (GDPR) procedure were followed when analyzing and handling the data. To ensure confidentiality and to follow the project's internal guidelines, the names used in this study are pseudonym. In addition, any personal details that could be used to identify a person have not been included in the quotes used in this study.

5. Findings

The findings of this study were structured using the theoretical framework of translation from actor-network theory. The four moments of translation - problematization, interessement, enrolment, and mobilization - guide the findings to present in detail how the actors negotiate and become entangled during the process of translation. The findings are presented in the form of a narrative or storytelling not to directly interpret the findings, but more to explain the process of translation in analysing the importance of teaching about personal data on social media practices within the scope of school contexts.

5.1. Problematization

The phase of problematization frames to examines the actors involved in framing and negotiating students' social media and personal data practices in Swedish school contexts. The findings highlight that there is a connection among actors when negotiating the importance of teaching about personal data on social media practices by framing the important aspects of teaching students about the effects of digitalization and digital media on society.

As outlined in the National Plan for the Digitalization of the School System, several aspects have been problematized regarding the use of digital systems and services by students. The National Plan for the Digitalization of the School System as an actor here negotiated the problematization by emphasizing the importance of schools in facilitating and developing students' ability to use and understand digital systems and their services, including media and information. The following quote from the document illustrates this point:

“They must strengthen students' ability to use and understand digital systems and services, and to relate to the media and information in a critical and responsible manner”. (Swedish Association of Local Authorities and Regions, 2019, p.14)

The National Plan for the Digitalization of the School System as an actor here tried to emphasize that the problem centres around the use and understanding of the digital system and services by the students, stressing that the students need to be more critical and responsible with its services, especially when it comes to online media and information. Furthermore, the National Plan for the Digitalization of the School System underlines their relation and agency by negotiating that the school system has the central task of giving all children and students the opportunity to develop the ability to use and shape digital technologies.

There also points made by the actor of the National Plan for the Digitalization of the School System that discuss about importance of teaching the effect of digitalization and digital systems. These statements also serve as a means to assemble and entangle other actors in the network, as highlighted in the document that positions National Plan for the Digitalization of the School System as a key document for the entire school system, as it highlighted from the point on the document:

“The national action plan for digitalization of the school system is the action plan of the entire school system”. (Swedish Association of Local Authorities and Regions, 2019, p. 14)

The other actor in the network which is the Proposal for a National Digitalization Strategy for the School System 2023-2027 negotiate to problematize a specific concern about how schools and teachers should develop students' knowledge and understanding to help them act safely in the digital environment, as highlighted below:

“In order to act safely and respectfully, students need to be made aware of how different actions in digital environments affect both their own and other people's

integrity and feelings. For example, they need knowledge about how they can protect themselves and their personal data in digital environments. They also need an understanding of how the digital services they use at school and in their free time collect and handle personal data". (Swedish National Agency for Education, 2022a, p.9)

The statement from the Proposal for a National Digitalization Strategy for the School System 2023-2027 centered that students should understand the motives from digital service they use at school and in their free time, and highlights the concern and need to develop their ability to protect themselves and their personal data in the digital environment. The finding highlights that the Proposal for a National Digitalization Strategy for the School System 2023-2027 as an actor here problematized and emphasised the need for students to understand on how the digital services they use at school and in their free time collect and process their personal data when using the platforms and services.

As part of the actor in the network, Curriculum for Primary School, Pre-School and After-School Classes – Lgr22 also negotiated the importance of developing students' understanding of how digitalization affects their lives as individuals and society as a whole. The finding highlights that the Curriculum for Primary School, Pre-School and After-School Classes – Lgr22 requires teachers to provide students with opportunities to enhance their critical thinking skills in relation to the risks associated with digital systems and media, including those associated with current digital systems and media such as social media platforms. This is illustrated as one of the main objectives in the Social Studies subject of the Curriculum for Primary School, Pre-School and After-School Classes – Lgr22 for grades 7-9, illustrate with the statement below:

"How media are produced, distributed and consumed and which ones opportunities and difficulties it may entail for the media's role in a democratic society. In addition, to be critical examination of information, positions and arguments relating to social issues in digital media as well as in other types of sources". (Swedish National Agency for Education, 2022b, p.200)

The Curriculum for Primary School, Pre-School and After-School Classes – Lgr22 as an actor negotiated the concern by highlighting the importance of teaching students about the complex system of digital media, such as how they are produced and consumed, and critically understanding how online information is distributed, especially in an online environment. In addition, social issues related to digital media, as well as other types of sources, need to be discussed with students in Social Studies in order to critically examine online information and understand media's role in a democratic society.

The Curriculum for Primary School, Pre-School and After-School Classes – Lgr22 also negotiated the problematization phase by concerning students' use of global technology systems and digital platforms, which may bring benefits, risks, and limitations that need to be discussed and understood by students. The actor highlighted the main objective of the Technology subject, which is entangled teachers to teach their students about the issues of security and risk in using technology and digital platforms in society, particularly when it comes to personal data, as it highlighted below:

"[to understand] Internet and some other global technological systems and their benefits, risks and limitations. Possibilities, risks and security in the use of technology in society, including when storing data". (Swedish National Agency for Education, 2022b, p.259)

The findings also highlight that, on the other hand, teachers negotiated the concern of students' usage of digital platforms, mainly social media practices. The finding from the field notes highlights that the teachers are more concerned about how they can assist their students in being more critical of online resources and information in social media and developing their understanding of the platform practices. As an actor in this context, the teacher negotiated their students' social media practices by

problematizing the concern regarding the impact of platform practices on information influence, encouraging the critical evaluation of online sources, and emphasizing the importance of students being more aware of their social media practices, as highlighted from one of the statements from the teacher below:

“Schools need to train how we can evaluate online sources, also on platforms such as TikTok. There are some out there one can trust but other you cannot, so how could a student know?”. (Field notes 2022-10-05)

Another finding from the interview with teachers highlights specific concerns regarding their students' use of social media. In this regard, the teacher negotiated the concern by emphasizing that social media can have an impact on their students, especially since students may not be aware of what personal information they are sharing with other users. In addition, the teacher negotiated the problem by arguing that students may lack knowledge on how to protect their information when it comes to social media practices. This is highlighted in one of the statements made by the teacher during the interview:

“What happens on social media can have an impact on teenagers. While it can be a platform for making connections, it can also be used to spread negativity. Teenagers may engage in chats with people from other countries and push boundaries, but they may not realize the severe consequences of sharing personal information with the wrong people. Unfortunately, teenagers are often exposed on social media and lack the necessary filters to protect themselves”. (Interview-teacher 2).

To conclude, these findings illustrate that the problematization process involves several actors, including the National Plan for the Digitalization of the School System, the Proposal for a National Digitalization Strategy for the School System 2023-2027, the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22, and teachers to negotiate students' social media and personal data practices by framing the key aspects of teaching students about the effects of digitalization and digital media on society. In particular, the findings underline the importance of teaching students about social media practices and personal data awareness in Sweden. While some actors did not specifically mention the problem, the finding highlights that the problem is embedded within their concerns and key statements on their arguments that are assembled within their alliance in the network.

5.2. Interessement

The interessement phase of this section aimed to illustrate the findings on why several actors in the networks were interested in negotiating students' social media and personal data practices. The findings also illustrate why it is important to include discussions about social media within the network, and why teaching about social media practices is an important topic to negotiate and discuss within the network. The findings highlight that there are some interests and overarching goals from actors that are connected to other actors in the network, which shapes other interests and entangles the connections.

The finding demonstrates that the National Plan for the Digitalization of the School System has an interest and overarching goal to provide students with knowledge and understanding of the effects of digitalization, and how digital technology affects individuals and society. The National Plan for the Digitalization of the School System as an actor here has embedded their interest in the school system, compelling schools to provide students with the opportunity to develop the ability to use and shape digital technologies, as well as to understand how digitalization affects the development of individuals and society, as illustrated by their quote below:

“Digital transformation of Sweden starts at school and that the school system has a central task of giving all children and students the opportunity to develop the ability to use and create with digital technology, and an understanding of how digitalization affects the individual and society's development”. (Swedish Association of Local Authorities and Regions, 2019, p.14)

The other actor in the network, for example, the Proposal for a National Digitalization Strategy for the School System 2023-2027 negotiated their interest regarding the importance of teaching and developing students' abilities to act safely, respectfully, and resourcefully in digital and online environments. Their interest highlights the key point of their goal, which is to prepare students to live in a democratic society, as highlighted below:

“In the long run, it is a prerequisite for a sustainable and democratic society. Therefore, it is also important that all children and students based on age and maturity develop abilities to act safely, respectfully and resourcefully in digital environments”. (Swedish National Agency for Education, 2022a, p.9)

In relation to these two actors, the Curriculum for Primary School, Pre-School and After-School Classes – Lgr22, on the other hand, negotiated their interests in relation to the overarching goals to provide the students with the understanding around the effects of digitalization and digital platforms. These interests are more specific but still entangled with the arguments from the National Plan for the Digitalization of the School System, which has similar interests and assembles into the discussion of the importance of developing students' understanding of how digitalization affects individual and societal development. In particular, the Curriculum for Primary School, Pre-School and After-School Classes – Lgr22 as an actor here emphasized their interest in ensuring that all students have the ability to understand digital technology or digital platform practices, in order to prepare students to have certain knowledge and understanding of the risks and enable them to evaluate valuable information from digital technology and the online environment, as illustrated in their quote below:

“The school must contribute to students developing an understanding of how digitalization affects the individual and society's development. All students must be given the opportunity to develop their ability to use digital technology. They must also be given the opportunity to develop a critical and responsible approach to digital technology, to be able to see opportunities and understand risks and to be able to value information”. (Swedish National Agency for Education, 2022b, p.8)

Finding from the field notes also highlights that teachers negotiated their interest in stressing the importance of teaching about social media with the aim of developing their students' knowledge and understanding to be responsible with their social media practices. The finding underlines that teachers are interested in discussing the social media practices of their students because there are various problems associated with the use of social media by students, such as cyberbullying. These problems not only affect students at school but also extend to their personal lives. This is highlighted in the following excerpt from the field notes:

“Talk about cyber bullying and that there is a lot going on social media, if students experience bullying in school, it does not stop anymore when they go home, as the phone become the extended schoolyard”. (Field notes 2022-10-19)

The other finding from the interview with teachers also indicates that teachers not only expressed interest in discussing social media practices with their students but also negotiated and invited such discussions to be carried forward. The teachers were concerned about the impact of social media on their students' online behavior and wished to take the discussion to the next level by educating and teaching them about it in school. They were motivated to provide students with an understanding of how social media platforms use their information or personal data and to question the critical points of

social media practices in order to help the students critically examine the information they receive from the platform practices and be responsible for their online practices, as highlighted in the statement from the teacher below:

"I mean that you should get into their world, the world of young people, and understand what social media they use, what they look at, and help them critically examine the information they encounter. Being able to ask questions back, such as "Are you out there?", "Who can benefit from your information?", or "What is happening or what are you seeing?", is important. Then, we need to train them to use social media in a responsible way". (Interview-teacher 2).

The findings highlight that several actors have different interests when it comes to providing students with an understanding and knowledge about the effects of digital media or digital platform practices. However, their interests are assembled with one another, even with the different specific interests of each actor. The findings highlight that their general interests are similar, namely, to prepare students to become democratic and responsible members of society in the digital world, with the motivation to provide students with the knowledge to be responsible and act safely in the digital environment. As a conclusion in this stage, the interest here is not merely about which actors are invited to negotiate their role in the discussion and problem, as it has been partly done during the problematization stage. However, it is more important to explain the reasoning behind why the discussion of teaching about personal data on social media practices should be invited to the network. The next stage of the translation process involves a focused narrowing down to the enrolment phase. The upcoming section presents detailed findings that illustrate the process by which the discussion on the importance of teaching social media practices is enrolled into the network.

5.3. Enrolment

During the enrolment process, by following the theoretical orientation of ANT, the discussion of teaching about personal data on social media practices assumes new identities and is translated into specific directions, thereby establishing its role in the network. In this process, multiple actors are involved during the enrolment process to assemble the force of teaching about personal data on social media practices to students in the school context, which momentarily come together to influence other actors in the network.

The findings highlight that the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 has power relations with schools and teachers, entangling the discussion on how to teach personal data on social media practices, including determining which aspects of the practices should be taught in the classroom by framing the important aspects of teaching students about the effects of digitalization and digital media on society. For example, the findings underline that teachers are guided by the curriculum when they want to engage and discuss with their students in the classroom regarding the issues of personal data on social media practices in relation to the effects of digitalization and how digital and online practices impact society. These arguments are mentioned in the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22, especially in Technology subjects. The finding highlights that the discussion about personal data on social media practices is covered and guided by the curriculum, and the findings underline that teachers have tried to discuss these issues with the students in the Technology subject as part of their discussion, as highlighted in the statement from the interview with teacher below:

"Yes, right now. Mm, yes, but to be honest, we've already addressed this topic in my technology class in relation to the curriculum. We cover the basics of computer building and also discuss the infrastructure of data transmission. We explore topics such as who has access to our data and why. I am not alone in teaching this subject, as all teachers are now aware of its importance. We work together to determine how best to educate our students about these issues". (Interview-teacher 1).

The finding highlights that the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 has a relation to entangle teachers to teach and discuss these issues. However, teachers also have the agency to decide these topics, but they must ensure that their approach aligns with the requirements and objectives of the subject identified in the curriculum. This is exemplified by a statement from a teacher:

”Social studies, then you have to address those questions, how can this be connected to the knowledge requirements or to the purpose of the subject? And then you check a bit there”. (Infra lesson planning 2023-01-09)

To conclude, the findings from the enrolment process highlight that the initiative of teaching about social media practices as part of understanding the effects of digitalization and digital media has become widely accepted in the network. This may lead to the final step of the translation process. The findings underline that teachers are interested in discussing these aspects, and their agency to teach about social media practices is embedded with some key points in the curriculum.

5.4. Mobilization

Because these networks create and negotiate the importance of teaching students about social media practices, teachers teach in a certain way that influences students on how to behave on social media and protect their personal data on their social media practices. In the final stage of the mobilization process, the discussion of teaching about social media practices gains broader acceptance, and its translations are extended to additional locations and domains, making it more durable and potentially influential with irreversible translation. During this process, a new actor also entered the network, namely the Infra Reveal tool, an actor that is used to visualize data exchange when using the internet, which helped teachers discuss personal data on social media practices in more detail. The findings highlight that prior to attending the workshops and experiencing the Infra Reveal tool, teachers were more concerned about common issues that occur on social media, such as cyberbullying, and how social media influences their students. However, after the new actor, Infra Reveal, entered the network, teachers became more concerned about personal data issues when it comes to their students' social media practices.

5.4.1. Planning the lesson

The findings highlight that when teachers planned the lesson on teaching about social media and personal data, other actors in the network, such as the national curriculum, influenced the teachers on what aspects should be taught, emphasizing the key point on the importance of developing students' digital competence. The goals of the key point include teaching students about the impact of digitalization on society, as well as how to use and understand digital tools and media in a critical and responsible manner, framing the discussion of teaching students about social media practices. From the theoretical orientation of ANT, the finding underlines that while teachers have agency to teach, their agency is entangled by other actors in the network, as highlighted in the discussion between teachers (T1 and T2) and researcher (R) below:

T1: *“Yes, exactly. Yes, so we start ... started from that and then we sat and talked and tried to remember a little together and think about how we can ... how we might be able to do and then ... yes, the purpose of understanding the impact of digitalization on society, to be able to use and understand digital tools and media and have a critical and responsible approach to be able to solve problems”.*

R: *“How did you come up with these objectives? Is it”.*

T1: *“Yes, we assumed this as digital competence”.*

R: *“Yes, right, yes, exactly. The new curriculum really”.*

T2: *“Exactly, yes, exactly. It for us to follow”.* (Infra lesson planning 2023-01-09)

Teachers were also of the view that they had the agency to teach and influence students on how to behave on social media and protect their personal data in their social media practices. With their agency, teachers believed it was important to teach students about digital traces in relation to their online and social media practices. The finding also highlights that, on the other hand, teachers assumed that students were not aware of their personal data and digital traces when using social media. Teachers thought that bringing this discussion to the classroom was important in order to develop the student's ability to act safely in digital environments, as highlighted in the statement below from one of the teachers:

"I don't think so, but I think that, on the subject of... the approach of talking about it: "You leave traces behind", I think they hear, but they are children and young people, they are here and now. So, they don't think about what are the disadvantages of this?". (Infra lesson planning 2023-01-09)

When planning lessons, the findings highlight that teachers discuss and acknowledge the need to develop specific skills and knowledge when it comes to teaching students about personal data on social media practices. This was highlighted by teachers during group discussions.

"Yes. But ... so that, as a teacher, we need somewhere to educate about software, continuing education and information technology, globalization and ethics perhaps? ICT skills training perhaps? Generally?". (Infra lesson planning 2023-01-09)

In addition to planning to teach students about the importance of understanding the digital traces they leave behind when they use social media, teachers also emphasized an important point related to the discussion of personal data on social media - namely, the discussion of where their data is stored and landed when they use social media, as highlighted below:

"Right, even if it says se, then you think that if ... yes, but it's only Sweden, it's only here we are. No, but maybe it's not, maybe it goes away. But why does it go there then? Why does it land there? It says, what's the purpose ... yes, and then we come to leisure time, the class decides on an activity, such as Tiktok or Snap, where everyone goes in and where the information ends up, yes, and why, and then at the end, we actually unleash the free search, and they go to pages they usually visit". (Infra lesson planning 2023-01-09)

These findings highlight that when teachers mobilize discussions about teaching personal data on social media practices, several aspects emerge in the analysis. For instance, the points mentioned on the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 influence the teachers' agency when planning the lesson. On the other hand, the teachers also have the agency to decide on specific topics for discussion, such as personal data and data exchange, when planning the lesson on teaching about social media practices. Thus, the findings underline that while teachers have the agency to teach, their agency is entangled with other actors in the network.

5.4.2. Teaching the lesson

Based on the findings from teaching about social media practices and personal data using Infra Reveal in the classroom, several findings emerged regarding the mobilization of social media discussions into classroom practices. In this context, teachers have the agency to shape students' behaviour and awareness of their social media practices, particularly in relation to the ongoing issues of personal data. The teachers introduced the lesson with a discussion about the influence of social media practices on our lives as a society and how this influence affects our online activities. This was highlighted in the note below:

“There are those who can influence how we live in society. Can they influence what we watch and such? We will think about that today and see”. (Field notes Infra Reveal lesson)

The discussion of social media practices was subsequently narrowed down to the topic of personal data on social media. Before this, the teacher demonstrated the Infra Reveal tool to the students and instructed them to log into the tool's connection using school computers to help them visualize the data transfer when they were using digital platforms, such as social media. During the discussion, the teacher explored with the students the reasons for using various digital platforms and how their actions, including sharing personal information online, can be used by social media companies. The findings underline that some students were not aware of this issue, while others mentioned that companies could benefit from their data. In addition, students pointed out that digital platforms such as social media could sell collected data to third-party companies for advertising purposes. As highlighted from the field note of a discussion between teacher (T) and students (S1 and S2) below:

T: Does anyone benefit from this going to the US? Is anyone benefiting from our data packages?”

S1: I have no idea.

S2: Those who own the servers

T: What do they get, asks D

S1: Money

S2: Advertising

T: In which way do you mean?

S2: They sell to companies so they can specify the advertising. (Field notes Infra Reveal lesson)

The findings of the field notes highlight that students had different levels of understanding when it came to knowledge about the use of personal data while using social media. Some students were aware of the issues but not in a specific way, while others were not aware of the motives behind social media platforms that collected and used their personal data for specific purposes.

5.4.3. After teaching the lesson

From the workshop after lesson, teacher highlighted that it is important to provide students with prior knowledge about social media practices, especially with regard to the complexity of personal data and data exchange when using the internet and social media. This will enable students to have a better understanding of the topics that will be discussed and to provide a detailed perspective, such as the discussion of personal data when using the internet and digital platforms, as it highlighted below:

“Yes, but talk a bit about what is sent, so this with some data packages and internet, that it connects like that ... just to get into the mindset then. Because I think it could be reworked a bit with these larger questions. So if I had ... like last term, when we had technology and such longer lessons, a hundred minutes plus, then you could put it in and have it as a package”. (Infra after lesson 2023-01-27)

The other reflections from the teachers that need to be taken into consideration for the next lesson are the concerns regarding social media feed and content. Teachers highlighted that young people, or their students, spend a significant amount of time on social media, such as the popular platform TikTok.

The teachers also highlighted that it is important to discuss this issue in more detail in relation to personal data and more into the motives of the social media practices, as students need to understand how they are being fed and who is feeding them with content and for what purposes, as it highlighted below:

“They are being fed a lot by this and how many hours does this generation spend on TikTok right now, as they are being fed? And who is being fed ... yes”. (Infra after lesson 2023-01-27)

The findings highlight teachers' concern about issues related to personal data and online activities of their students in the digital environment, given that these are prevalent practices that their students face today. This was mentioned by one of the teachers during the workshop:

“Yeah, like, because that's what the teenager is going to face ... so, so: “What do you think works well?”, “What should be considered?”, “Was there anything that was difficult to understand? Something that was easy to understand”. (Infra after lesson 2023-01-26)

Teachers also emphasized the importance of considering specific points when preparing for the following lessons, such as providing students with knowledge about the aspects that should be considered when dealing with personal data on social media. This will help students better understand social media practices and be better prepared to face ongoing issues related to their social media practices, as

“Yes, but I understand, but you should have the discussion like this: “Yeah, but what are you doing on your phone?”, “Yeah, but it's Snap, it's TikTok, it's Insta”, like that's a lot of what they're doing. And where does that information end up?”. (Infra after lesson 2023-01-26)

The findings from the discussion after the lesson highlight the need to provide prior knowledge before teaching students about personal data on social media practices. It is better to provide an understanding of the complexity of personal data and data exchange when using the internet and social media before discussing it. The other finding also underlines the importance of discussing personal data and the impact of digitalization and digital platform in detail, especially when it comes to the motives behind platforms' practices, such as influencing and feeding contents. These topics can be included in Technology and Social Sciences classes as they are related to the main objective of the lesson, which helps to better prepare students for the current issues related to the impact of digitalization and social media in society.

6. Discussions

This study set out to explore the process of translation of the negotiation of students' social media and personal data practices within Swedish school contexts, and how personal data on social media practices are mobilized and taught in schools. Using the theoretical orientation of actor-network theory (ANT), several actors were identified, and the translation process brings together these actors, including policy documents, the national school curriculum, and teachers, to negotiate specific aspects and frame the discussion on the importance of teaching students in Sweden about personal data on social media practices. The findings highlight the complexity and interrelation among the actors that are involved in the process of translation, which are assembled and entangled within the stages of problematization, interessement, enrolment, and mobilization. The discussions are framed based on the research questions of this present study in order to structure the important key points from the findings regarding the negotiations that occur during the process of translation, as well as the influence and power relations of actors in the network. The discussions also explore the process of translating teaching about students' social media and personal data practices into school settings to discuss the practices and the associated challenges.

6.1. How are students' social media and personal data practices in Swedish school contexts negotiated?

Negotiating students' social media and personal data practices in school contexts is complex and multifaceted because it is influenced not only by teachers but also by other actors in the network, and every entity has a role in these negotiations (Latour, 2005). In school contexts, different elements such as policy documents, school curriculum, teachers, the school environment, as well as educational tools are considered to have the potential to influence other components in the network, thereby possessing agency and power (Fenwick et al., 2011). Through the lens of actor-network theory, the analysis indicates that multiple actors are involved and come together to frame the negotiation of students' social media and personal data practices and to establish their connections within the network. These actors include the National Plan for the Digitalization of the School System, the Proposal for a National Digitalization Strategy for the School System 2023-2027, the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22, teachers, as well as the school environments. The findings indicate that the actors negotiate the discussion by problematizing students' social media and personal data practices and articulating their intentions with mutual objectives within the network. There are also tensions between the actors when problematizing students' social media and personal data practices. For example, certain actors bring different arguments or points when addressing these issues, but the arguments are still connected to students' social media and personal data practices. From an ANT perspective, the association and correlation do not automatically imply that all actors share the same interests; instead, they indicate their ability to collaborate despite their differences (Callon, 1991). Thus, these tensions among the different actors in the network strive to find their way and frame the negotiation process of students' social media and personal data practices. The analysis found that when the actors negotiate students' social media practices within the network, three key findings emerge during the analysis that indicate their negotiation. These findings are identified through the problematization of certain points of discussion and negotiations. These findings include: (1) being more responsible and critically aware of their online actions, (2) understanding the risks and limitations of their social media practices, and (3) knowing how to protect their personal information and privacy in the online environment. The analysis also found that in the interessement phase, the negotiation has resulted in a mutual objective centered on preparing and assisting students to actively participate in a democratic society.

Developing critical awareness and taking responsibility for their access to and use of digital services, such as social media, is a key aspect of the negotiation process. This becomes evident when several actors, namely the National Plan for the Digitalization of the School System, the Proposal for a

National Digitalization Strategy for the School System 2023-2027, and the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22, raise concerns about students' social media practices. These points of negotiation have not emerged without reason, as previous research has also indicated that young people, including students, dedicate a significant amount of their time to social media (Dezuanni, 2021; Taylor et al., 2022). Students not only consume information but also actively participate in sharing content and personal information (Boyd, 2008; Martin et al., 2018), often lacking awareness and responsibility in their online consumption and sharing habits (Marwick & boyd, 2014). This negotiation reveals that some actors are worried about students' lack of responsibility in their engagement with social media practices. Although students may possess technical proficiency in using social media's functions and features, they may lack responsibility in their interactions with the platform's services, which is in line with prior research that emphasizes the need for students to exercise greater responsibility in their online actions, particularly when reacting to and sharing content on social media platforms (Pescott, 2020). Furthermore, the actors, specifically National Plan for the Digitalization of the School System and the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 raise concerns about students' critical awareness of social media practices, highlighting the importance of students developing critical awareness regarding their online actions on these platforms. Being critical entails possessing essential skills and knowledge necessary for navigating online interactions and services provided by digital platforms (Brookfield, 2015), particularly in today's digital landscape where information and data are publicly accessible. This underlines the importance for students to critically understand the motives underlying platform services and questioning the consequences of their online actions (Martin et al., 2018). The negotiation surrounding students' social media usage and personal data demonstrates that actors converge on different arguments but narrow their focus when problematizing students' social media practices, particularly concerning students' responsibility and critical awareness. These points are repeatedly mentioned by some actors including the National Plan for the Digitalization of the School System, the Proposal for a National Digitalization Strategy for the School System 2023-2027, and the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 that highlighted in the findings, emphasizing the need to prioritize teaching practices that foster greater responsibility and critical awareness among students regarding their online actions and activities.

The other negotiation points revolve around problematizing students' understanding regarding the risks and limitations of the social media practices with which they engage. As highlighted in the findings, some actors, including the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 and teachers, try to negotiate their concerns regarding the potential risks that students need to be aware of and understand when interacting with social media platforms. The issues surrounding online information that can spread negatively and influence students have emerged as one of the key concerns during the negotiations. In addition, previous studies have also highlighted that social media practices not only have positive effects on users but also negative consequences that are sometimes accompanied by risks, potentially affecting the users (Couldry & van Dijck, 2015). The risks associated with social media practices are not limited to general issues such as cyberbullying but also include the risk of targeting audiences or users with specific content, not only influences individual opinions but also societal views in general (Entman & Usher, 2018). The negotiation here tried to emphasize the risks embedded in social media practices that students need to understand and be aware of. This issue is particularly concerning for young people or students, as some research indicates that this demographic actively uses social media for various purposes and can potentially be exposed to content that poses risks and influences their perspectives (Bucher, 2017; Swart, 2021). By highlighting the importance of understanding the risks and limitations of social media practices, the actors in this network, namely the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 and teachers have negotiated that these points need to be taken into consideration when discussing students' social media practices and the associated risks. As highlighted in the findings, Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 as the actor have also asserted their agency and entangle the school and teachers with initiating discussions on this topic with the students

in order to raise their awareness of the risks and consequences associated with their social media practices.

Furthermore, the concern about sharing personal information and privacy when negotiating students' social media practices has also emerged during the problematization and negotiation within the actors in network. As highlighted in the findings of this study, the negotiation indicated that several actors including the Proposal for a National Digitalization Strategy for the School System 2023-2027, the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22, and teachers were concerned about the lack of awareness of the students regarding the personal information that they share on social media with other users. These concerns are connected to another point that highlights the need for students to be responsible and critically aware of the personal information they share on social media. However, the specific concern here relates to their personal data, such as sharing personal details and compromising their privacy on social media sites with strangers. In addition, concerns were also raised about the lack of understanding of the students regarding how digital platforms used in schools and during their free time collect and handle their personal data. The negotiation aims to emphasize the need for students to understand not only that their personal data, such as photos and videos, can be accessed by other users on social media but also that social media companies can own their personal data and information. It is important to acknowledge that social media, by default, can access and control the personal data of users and utilize it for various purposes (Pangrazio & Cardozo-Gaibisso, 2021). The findings of this study align with previous literature, which raises concerns about personal data issues in social media practices that can pose potential risks for students, including targeting specific contents (Couldry & van Dijck, 2015; Krutka et al., 2019), and even exerting influence over political interests and campaigns (Oatley, 2022) with the potential to have a negative impact on users, especially students.

The findings from the negotiation of the problematization consist of being more responsible and critically aware of online actions, understanding the risks and limitations of social media practices, and knowing how to protect personal information and privacy in the online environment. These findings are also in line with previous research that addresses the issues surrounding teaching about personal data on social media, as mentioned in the above discussion. However, the findings of this present study are also interesting as they highlight the negotiation of these problems by both human and non-human actors, providing valuable perspectives for the ongoing discussions in the literature. Moreover, the discussion emphasizes that, according to the ANT perspective, the problems are not determined by a singular cause-and-effect relationship but rather by multiple negotiation points (Latour, 2010). In this context, actors such as the National Plan for the Digitalization of the School System, the Proposal for a National Digitalization Strategy for the School System 2023-2027, the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22, and teachers play a significant role in problematizing students' social media and personal data practices in school contexts.

Following the process of translation using the theoretical orientation of actor-network theory to examine the data and the connections among actors within the network, the analysis also found that during the intersement phase, there were some interests and overarching goals from actor such as Proposal for a National Digitalization Strategy for the School System 2023-2027 that are connected to other actors in the network including the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22, and teachers, shaping their interests and entangling the connections. The negotiation has resulted in a mutual objective centered around the concept of preparing the students to "be a democratic society" with the primary objective is to provide students with the knowledge and understanding required to engage responsibly and safely in the digital environment. The negotiation process also emphasizes the important role of schools and teachers in assisting students in developing their understanding and awareness of their online practices and personal data within online and social media practices. However, the notion of being a democratic society as negotiated by some actors in the network, particularly in the context of interactions with social media platforms, raises significant questions that warrant further exploration in order to fully grasp the essence of democracy itself. When

discussing the relationship between being democratic and the development of digitalization and the widespread use of digital platforms, it is important to acknowledge the specific aspects in which the students can participate in as democratic society. For instance, in the context of this study, which primarily focuses on social media practices, it is necessary to explore the concept of being democratic in greater detail. In fact, social media platforms wield considerable power and control over users' personal data, as mentioned by some studies and discussed as an ongoing concern (see Kennedy & Moss, 2015; Krutka et al., 2019; Pangrazio & Cardozo-Gaibisso, 2021), further solidifying their dominance by operating recommendation systems to target users with specific information and exert influence (Bucher, 2017; Entman & Usher, 2018; Reviglio & Agosti, 2020). This practice potentially limits democracy by preventing users from choosing the information they receive and targeting audiences with specific content (Entman & Usher, 2018), such as social and political power by shaping the character and content of user' digital public sphere in society as a whole (O'Neil, 2016). During the analysis, the notion of being a democratic society, as mentioned by several actors within the network, remains broad, indicating the need for further research to delve into their underlying objectives when articulating these intentions, particularly in relation to online and social media practices.

6.2. How are the negotiation of students' social media and personal data practices in Swedish school contexts mobilized into teaching practices?

The process of negotiating students' social media and personal data practices has become enrolled and mobilized within the school setting, where the teaching about personal data on social media is being discussed. The findings highlighted that multiple actors are involved in the process of enrolment and mobilization, assembling their agency to compel teachers to teach students about the aspects of personal data on social media practices within the school context. These actors temporarily come together to influence and entangle other actors in the network. Using the theoretical orientation of actor-network theory to analyse the data during the enrolment and mobilization of the discussion surrounding students' social media practices, the analysis found that there is a negotiation of agency and power relations when it comes to teaching students about personal data on social media practices in schools. In addition to agency, there are also challenges associated with a lack of knowledge and technological tools that influence the teaching and mobilization process.

Teaching students about personal data and social media practices in school involves negotiating the agency and power relations within the network, which greatly influences how teachers approach these discussions. While teachers typically possess the authority to teach, their agency becomes entangled with various human and non-human actors within the network (Fenwick & Edwards, 2010). Within the scope of this study, teachers tended to configure their ideas and interests based on the arguments and objectives presented or emphasized by another actor, namely the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22. From an ANT perspective, the curriculum acquired agency in translating objectives into practices, such as lesson planning, and influencing teaching practices (Fenwick et al., 2011). The findings highlight that teachers are influenced by the main objectives and specific points mentioned in the curriculum, establishing an entanglement between teachers and the curriculum objectives when planning the lessons. These findings strongly emphasize that when teachers aim to discuss and teach students about social media and personal data practices, non-human actors are also influenced their teaching practices. In this context, the curriculum also possesses agency and serves as a guiding entity that directs teachers and entangles their teaching practices. These findings indicate that translating discussions about students' social media practices is not solely a matter of interest from teachers to facilitate students' understanding; rather, it involves a process in which both human and non-human actors negotiate the enrolment process into teaching practices in schools. Thus, it is important to acknowledge that every actors, both human and non-human, plays a role in the entire process of translation (Law, 1992). The actors come together, become entangled, and disentangled throughout the translation process, and their agency also depends on the phase of the process itself (Callon, 1986). The findings highlight that the Curriculum for Primary

School, Pre-School, and After-School Classes – Lgr22 has emerged as a powerful actor that influences the agency when it comes to enrolling discussions of teaching personal data on social media practices into the school setting. In addition, since teaching about social media practices is not the primary subject in schools, teachers need to establish connections between these points to other school subjects in the curriculum, such as Social Sciences and Technology. These indicate that the discussion of students' social media practices is enrolled into the networks and assembled with the other objectives and interests of the other actors, assumes new identities, and is translated into specific directions, thereby establishing its role in the network.

Teachers, on the other hand, have also exerted their agency by attempting to connect and translate the objectives in the curriculum, ensuring that the points align with the lesson planning for teaching students about social media practices. The agency is also used to influence students by teaching them how to behave and develop a critical understanding of their social media practices. The analysis found that two important points emerged from the teachers' discussions during the Infra Reveal workshop regarding students' social media and personal data practices. These points include raising awareness regarding students' digital traces or footprint data and fostering a critical understanding of the content students receive from social media. Teachers, with their agency, tried to emphasize that teaching students about these two aspects is important, especially for developing students' awareness and understanding of their social media practices and the associated risks. The findings highlighted that teachers also argued that their students are not aware of the digital traces they leave behind when engaging with social media. Given that students spend most of their time on social media platforms and engage with multiple platforms simultaneously, such as TikTok and Snapchat, they may leave their digital traces on social media without being aware of it. In relation to this finding, Acker and Bowler (2018) also claimed that young people were not quite aware of the data they produce and leave on digital platforms, as they did not necessarily see themselves as data producers. However, it is important to acknowledge the complexity of understanding the concept of digital traces itself, as this concept can be difficult to recognize and understand, especially for young people (Pangrazio & Selwyn, 2018). In this context, digital traces can be conceptualized as the personal data that students generate while using social media. These traces are recorded through accessing social media and participating in activities such as sharing and accessing content within their social media practices (Kennedy & Moss, 2015). Therefore, when planning and teaching lessons, teachers emphasize that students should understand and be aware of the digital traces and information they leave behind when accessing or sharing content on social media platforms. Another finding highlighted that teachers were urging students to be more aware of the content and influences they receive from their social media practices. On the other hand, teachers used their agency to plan the lesson and emphasized the importance of discussing social media content and influence for students to understand the motives behind these practices. Students should understand who is providing them with content and for what purposes, as highlighted by the teachers in the findings of this study. In fact, social media platforms can influence users through targeted content using recommender systems and algorithms (Gillespie, 2014). Concerns surrounding the use of personal data by recommender systems have also been highlighted in previous research (Bucher, 2017; Reviglio & Agosti, 2020). These concerns revolve around the hidden motives behind these practices, which may potentially impact students. This impact extends beyond the desired content, as the generated content targets students not only with online advertisements but also with social and political interests (Krutka et al., 2019; Pangrazio & Cardozo-Gaibisso, 2021; Reviglio & Agosti, 2020), as well as other forms of targeted information that may negatively affect the students. By highlighting these two important points, teachers teach in a way that force students on how to behave on social media, protect their personal data in their social media practices, and utilize their agency in the network to translate the discussion into their teaching practices.

The findings of this present study from the negotiation of agency also support previous research and discussion that indicates teachers have agency to teach but their agency is entangled by the curriculum (Fenwick & Edwards, 2010). Additionally, the findings regarding the topics that should be discussed

when planning lessons and teaching students about social media practices in relation to personal data are also similar to previous research. However, this present study highlights the specific issue of concerns that should be considered when teaching about personal data on social media. Among these concerns is the importance of developing students' understanding of digital and personal data through the digital footprints they leave behind when engaging with their social media practices. In addition, the need to develop students' awareness of the motives behind content feeds on social media is highlighted. These findings may be useful for future resources if teachers or other schools wish to mobilize this discussion into their teaching practices.

Furthermore, there are implications and findings of this study when compared to another previous research. Specifically, this present study addresses the challenges faced by teachers when teaching about this topic. This is important to discuss because previous research has primarily focused on students (see Acker & Bowler, 2018; Martin et al., 2018; Pangrazio & Selwyn, 2018) and assessing situations where teachers lacked understanding of personal data, and did not possess the knowledge to teach data literacy to students without acknowledging and tracing back to analyse the problem in more depth (Marín et al., 2021; Raffaghelli & Stewart, 2020). However, this study identifies the challenges that teachers face when teaching students about personal data and social media practices in a school setting. The process of translation highlighted a change in understanding and focus regarding teachers' concerns of their students' social media practices. The findings highlighted that during the problematisation and interestment phases, teachers were more concerned about cyberbullying, which emerged as a significant problem for their students. Teachers were also aware of the issues related to personal data and expressed concern about them. However, they lacked familiarity when it came to discussing these issues of personal data on social media with their students. Although teachers wanted to initiate discussions on this topic, they did not have a clear understanding of how to introduce the concept of personal data in the context of social media practices into teaching. In addition, while the curriculum touched upon some of these aspects and provide the guidelines for the teachers, it was still too broad and posed difficulties for teachers in grasping the conceptual understanding of these complexities, particularly when connecting these points to teaching students about personal data on social media practices. The analysis highlights that, several actors, such as curriculum and policy documents, require teachers to cover the topic of personal data on social media with their students in schools, aiming to provide the necessary knowledge and understanding for students to fulfil their mutual objectives in preparing them for a democratic society. However, when it comes to teaching, particularly personal data on social media practices, teachers are often left alone and required to understand key points on the curriculum and translate them into their teaching practices, sometimes without adequate support in terms of both knowledge and pedagogical tools. As highlighted by the findings of this study, while teachers have agency in their teaching practices, they also recognize the need to develop specific skills and knowledge when it comes to teaching students about personal data on social media practices.

These aspects highlight the challenges encountered during the implementation of teaching about personal data on social media practices in schools, as it highlighted by the findings of this study. In addition, the introduction of the Infra Reveal tool to support teachers' agency in teaching about personal data on social media practices further exemplifies these challenges. For example, teachers demonstrate an increased awareness of personal data, particularly when using the internet and digital platforms. Prior to the Infra Reveal workshop, teachers only expressed concerns about general aspects of their students' social media practices, such as cyberbullying. While they had some understanding of personal data, it was mostly in broad terms like privacy and personal information shared on social media, as highlighted in the findings during the problematization phase. However, during and after the workshop with Infra Reveal, teachers not only acquired knowledge about personal data on social media practices but also gained a deeper understanding of the complexity of associated languages and terminologies. The findings indicate that teachers engaged in discussions about data packages, digital traces, and data exchanges. This increased knowledge and understanding not only enabled teachers to engage in effective discussions on these concepts with their students in the classroom, but also

empowered them further with their agency in their teaching practices. In addition, the Infra Reveal tool serves as a valuable pedagogical tool for teachers, aiding their agency to teach and visually represent data transfers when teaching students about personal data practices on social media. Given its primary focus on teaching personal data practices on social media, particularly related to digital traces and content influences, this tool provides teachers with a convenient means of visualizing data transfers, identifying the destinations of data, and determining the countries and companies that can access and possess such data. The implications highlighted the need for teachers to receive additional support in teaching about personal data on social media practices. Furthermore, it is important to consider additional actors that are not addressed in this network, such as policymakers that responsible for creating the documents or regulations. These policymakers not only decide the regulations but also must acknowledge the complex concepts related to personal data in social media practices. Moreover, policymakers should support the mobilization of these topics and provide teachers with both knowledge and pedagogical tools within the school setting. However, since policymakers are beyond the scope of this study, the following section will discuss the limitations.

6.3. Limitations of the study and future research

There are several limitations of this study that must be acknowledged. First, the author is aware and acknowledges that there are more actors in the network when exploring the process of translation and negotiation of students' social and personal data practices into school contexts. These actors may include policymakers, parents, as well as students themselves. The study could benefit from further exploration of these actors to determine how they contribute to the discussion and negotiation process. However, due to the time limitations of this study and the potentially endless nature of networks, a decision had to be made to focus on a specific set of actors. In addition to time limitations, this study could benefit from conducting more classroom observations during the teaching of personal data on social media in the classroom. This would allow for a deeper understanding of classroom interactions and the development of students' awareness regarding these issues. By observing and studying classroom dynamics, it would provide valuable insights into the process of mobilizing teaching about personal data on social media practices within school contexts. This additional information would enhance the comprehensiveness of the study and provide a more holistic perspective on the translation process. It would also shed light on how this mobilization influences students' awareness and teachers in their teaching practices. Furthermore, the study also acknowledges another limitation associated with the data collection process. Since part of the data for this study relies on information collected by other members of the RED group, including transcribed data from the Infra Reveal workshop discussions and field notes, it is important to address this potential limitation. To overcome this challenge, the author actively engaged in extensive discussions with the members of the RED group who participated in the Infra Reveal workshop and field study. These discussions aimed to gain a comprehensive understanding of the contexts surrounding the data. In addition, the author conducted additional interviews with the teachers who participated in the Infra Reveal workshop and were involved in the field study. These interviews served to provide further clarification on the information presented in the transcribed data, ensuring a more comprehensive and accurate analysis.

7. Conclusion and implications

One of the aims of the present study was to explore the translation process in the negotiation of students' social media and personal data practices within Swedish school contexts. Findings from the analysis using the theoretical framework of actor-network theory found that there were negotiation processes among the actors in the network, such as the National Plan for the Digitalization of the School System, the Proposal for a National Digitalization Strategy for the School System 2023-2027, the Curriculum for Primary School, Pre-School, and After-School Classes - Lgr22, and teachers, in shaping students' social media and personal data practices. The actors problematized several points while negotiating the students' social media and personal data practices. Three key negotiation points emerged from the analysis when actors problematized social media practices. First, students should be more responsible and critically aware of their online actions. Second, they should understand the risks and limitations of their social media practices. Finally, they should know how to protect their personal information and privacy in the online environment. The study also found that in the interestment phase, the negotiation of the problematization has resulted in a mutual objective centered on preparing and assisting students to actively participate in a democratic society. The implications of this study underline that different actors in the network have different arguments during the negotiation in order to problematize students' social media and personal data practices within the scope of Swedish school contexts. However, their arguments from the negotiations assemble on a similar interest when it comes to their mutual objectives, which mainly focus on assisting and providing students with knowledge and skills to be more aware of their social media and personal data practices, intending to prepare students to be a democratic society in the digital world.

The study also aimed to explore how the negotiation of students' social media and personal data practices in Swedish school contexts is mobilized into teaching practices. The study found that there is a negotiation of agency and power relations when it comes to teaching students about personal data on social media practices in schools. The study highlighted that the Curriculum for Primary School, Pre-School, and After-School Classes – Lgr22 has emerged as a powerful actor that influences agency when it comes to enrolling discussions of teaching personal data on social media practices into the school setting, while teachers have the agency to teach but their agency is entangled by some points mentioned in the curriculum. The study also found that teachers exert their agency to discuss several points of the important aspects to teach about social media and personal data practices to their students, such as emphasizing the specific topic regarding the effect of digital traces and the content feedings of social media and influencing their students on how to behave in their social media practices. The implications of this study emphasize that the enrolment process of discussions about teaching personal data on social media practices in schools involves negotiation and influence from non-human actors, such as the curriculum. Furthermore, the study highlights the challenges teachers face, such as unfamiliarity with the concept of personal data on social media and the need for pedagogical tools to support their teaching practices during the mobilization process.

Overall, this study sheds light on the complex dynamics involved in teaching personal data on social media practices in schools, emphasizing the role of the curriculum and the challenges faced by teachers in this process. What could be done with the findings of this study is that policy makers, for example, need to take into consideration not only making policies that direct teachers to teach certain things but also ensuring that there is competence among teachers (e.g., incorporating this in teacher education at the university). In addition, policy makers should ensure that tools are available to help teachers pedagogically teach about this topic. It should not be left solely up to the teachers to develop these tools but rather they should focus on teaching and making pedagogical decisions. Furthermore, this study contributes to the existing literature surrounding the discussion of students' social media and personal data practices by highlighting the translation process of this discussion from school contexts into the school setting and how human and non-human entities negotiate these discussions. Moreover, the study also contributes by highlighting the aspects of teachers and their challenges when teaching about personal data on social media within school settings.

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Appendix 1: Interview guide

Topics	Main questions	Sub-questions
Social media views	How do you see or think about social media?	General discussion
	Do your students use social media at school?	Do you know what types of social media they mainly use?
	Does social media affect your teaching in the classroom?	Are there more problematic aspects of social media in school?
Teacher	How do you see your students' social media use?	How does this affect the students?
	What aspects should students know about social media?	Why are these aspects important?
	How do you discuss social media with the teacher team?	Why are these aspects important?
Infra Reveal	How did your view change about social media after the Infra Reveal workshop?	How can this understanding benefit you as teachers?
	What is your view on personal data on social media?	What do you think students should know about this?