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Herausgegeben von Claudia Riesmeyer, Thorsten Naab, Anne-Linda Camerini, Ruth Festl und Christine Dallmann

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Special Issue Nr. 35:
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Editorial: Media literacy as intergenerational project: skills, norms, and mediation

Claudia Riesmeyer, Thorsten Naab, Anne-Linda Camerini, Ruth Festl, and Christine Dallmann

The extensive research literature on media literacy is reflected by diverse theoretical conceptions, assumptions, and conclusions. Nevertheless, the considerations of numerous scholars in this «patchwork of ideas» (Potter 2010, 676) revolve around the importance of critical thinking and the interplay of different generations in the acquisition of media literacy.

Many scholars argue that critical thinking is a key qualification for the reflection of possible risks and a media use oriented towards opportunities. The ability to use media critically is directly linked to democratic-theoretical considerations, where information (Buckingham 2007), knowledge (Potter 2010), and analytical skills (Koltay 2011) are defined as components of media literacy. Information and knowledge are necessary for gaining access to media offerings, to analyze and evaluate them, and to create own media content (e.g., a profile on social networking sites like Instagram; Livingstone and Helsper 2010). Definitions of media literacy are usually based on the ability to access media and on media knowledge as expertise. These skills are considered fundamental for a reflective and (self-)critical use of media (self-competence), and to pass one's own knowledge and abilities to others (social competence). However, previous research (e.g., Livingstone 2014) has also shown that deficits in media literacy lie less in knowledge, but rather in subsequent actions and thus in the transformation of knowledge into action. Knowledge does not automatically lead to a critical use of media or to a change in behavior (Martens 2010; Riesmeyer, Pfaff-Rüdiger and Kümpel 2012; 2016). It is, therefore, not enough to only focus on knowledge, but respective actions must be considered as well when investigating media literacy and its mediation.

Following the idea of media literacy generations, researchers have discussed the acquirement of media literacy as a long-term process during life cycle (Potter 2010), since individuals need to adjust their media literacy to

- media changes and their media ecosystem,
- developmental challenges during different stages of their lives,
- their basic needs, and
- the turning points of their biographies.

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This process of media literacy socialization is individually shaped by diverse socialization agents, i.e. parents, teachers, peers, and the individual itself (Hobbs 2011), who aim to adapt skills and to mediate certain norms for a person's media use (Süss 2010). Consequently, living in different media landscapes and corresponding socializing environments lead to diverse media experiences (Naab & Schwarzenegger 2017; UNESCO 2016) and highly individual sets of media literacy.

Agents, generations, and media literacy: the concept of this special issue

This special issue of *MediaEducation* examines the interplay of the aforementioned considerations about media literacy. The eight selected, peer-reviewed articles are based on presentations at two international conferences: In May 2018, international scholars visited the conference «Media literacy as intergenerational project: skills, norms and mediation» at the LMU Munich, a pre-conference of the 68th annual conference of the International Communication Association (ICA). In October 2018, the ECREA's temporary working group «Children, youth, and media» met at USI Università della Svizzera italiana and discussed about «Children and Adolescents in a Mobile Media World».

The compiled number of articles follows the idea of an entanglement of media changes, lifelong acquirement of media literacy, and exchange processes between media generations. They discuss the implications of this conceptualization of media literacy for growing up in a mobile media world from four perspectives:

First, from an *individual* perspective, three articles discuss *the role of a person's skills in the process of media socialization*. It is known that the individual has a share in media socialization (conceptualized as self-socialization or agency; Arnett, 1995, 2007) and that certain framework conditions guide how the individual develops abilities for her or his media use. ***Mareike Wieland*** compares how younger and older internet users search for information and, therefore, focuses on information literacy (search) skills. This information literacy depends on cognitive abilities such as monitoring and regulating the search process being considered as basic conditions of media literacy. Based on a qualitative, process-oriented approach, results show that the focused generation sometimes influences individuals' information literacy: younger participants (aged 16–26) use more productive strategies to collect information, while the completion of a complex task does not depend on age. ***Jee Young Lee*** and ***Didin Nuruddin Hidayat*** conduct a survey and examine how students access and implement information and communication technologies in their everyday college life. Students are portrayed as predominantly technically versed, and it is assumed that they also use media technologies to cope with educational tasks in college. The article elaborates on how these usage habits are linked with digital literacy and

learning satisfaction. Based on qualitative interviews, ***Viviana Huţuleac*** and ***Delia Cristina Balaban*** analyze the media literacy of Romanian children, whose parents work abroad and who are not able to mediate media literacy at home but digitally supported (e.g., via smartphone). These children, on the one hand, are often faced with the challenge to adapt media literacy skills by their own. On the other hand, they live in a favorable economic context and have better access to communication technologies than their peers. The migration situation influences the motivational dimension of media skills but seems to have little influence on legal media skills. Social media offer technological support in order to see their parents as well as to share their problems and worries. It is often used for educational purposes in this particular situation.

These framework conditions of media literacy mediation lead to the *second* part of the special issue, i.e., the *family as a socialization agent*, its part in the socialization process, and its sense of responsibility regarding this role. ***Liane Rothenberger, Ahmed Elmezeny***, and ***Jeffrey Wimmer*** focus on the use and the regulation of mobile media devices of children and adolescents in refugee families. Their results base on a qualitative approach and show that media use changed after arrival in Germany, partly attributed to the changing socio-cultural environment. Most children and adolescents tend to consume German media content more often than Arabic content. In the rare cases, in which they do consume Arabic media content, it is in the presence of their parents who state that they do so to bring their children closer to their roots. Parents and the nuclear family have an important role in imparting skills for this use of media. The role of the educational style in the development of the ability to reflect on media is examined in the article by ***Claudia Riesmeyer, Bernadette Abel,*** and ***Annika Großmann***. They conduct qualitative interviews with adolescents and parents. The higher the warmth of parenting, the higher the children's ability to criticize the media. The influence of parental control is less clear. It is advantageous to a certain degree and helps children. However, if it becomes too strong, control unfolds a rather negative potential that inhibits young people's media literacy. Parents are not only central socialization agents but also role models: their media use shapes that of their children. Although parents consider online privacy as important, they insouciantly include personal information about their children online. ***Thorsten Naab*** suggests the concept of media trusteeship as an additional theoretical perspective to understand how parents shape the digital identity of their children. Based on in-depth interviews with parents, the results of his research on social media indicate that parents are largely unaware of the described role duality between their own online privacy and the presentation of their children online. They are only partially able to foresee the consequences of their activities. The analysis identifies three distinct types of parental media trusteeship: While some parents shield their offspring

from social media, others appear unable to respond adequately to the risks of social media activities or seem to ignore them completely. This article demonstrates that parents surveyed had no idea how to teach media literacy and guide their children to a safe and careful use of social media.

These findings illustrate the need for *schools* to impart *media literacy.* The *third* part of this special issue focuses on the schools' role in the process of media literacy mediation. ***Priscila Berger*** analyzes the conditions under which students rely on teachers to develop computer and information literacy (CIL). Her study explores the characteristics of students, schools, and countries that are associated with the incidence of learning CIL from teachers. Based on previous studies, she developed and tested a model employing a three-level analysis with data from 14 participant countries of the International Computer and Information Literacy Study (ICILS). The model reveals significant associations with students' socioeconomic conditions, self-efficacy in advanced ICT tasks, gender and countries' ICT Development Index score. However, the schools' characteristics do not significantly contribute to the model. Nevertheless, schools are important places for the adaption of media literacy skills especially when other socialization contexts do not do contribute to this task of mediation. In this regards, ***Annekatrin Bock*** and ***Felicitas Macgilchrist*** ask how schools today engage with mobile media. Drawing on ethnographically oriented research at German Schools Abroad, their article teases out three sets of practices regarding adolescents' mobile media use by identifying safe, enthusiastic, and post-digital schools. Presenting vignettes from these three schools to highlight each set of practices, the article shows how students are differently controlled, guided, and given space to shape their (media) worlds. The authors highlight the tensions when schools aim to guide adolescents' mobile use, arguing that each set of practices undermines itself. It also illustrates that more mobile media use in schools is not, as often assumed, a mark of progress, improvement, or modernity. Instead, the practices exist simultaneously. They enact different (not incremental) institutional priorities, and different (not incremental) understandings of adolescents' mobile use.

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You do not have to be quick to be information literate!

Comparing Search Strategies between Younger and Older Adults

Mareike Wieland

Abstract

When comparing how younger and older internet users search for information, young people often impress by operating Web applications quickly and effortlessly. However, information literacy is not only a question of speed; it is highly dependent on cognitive abilities such as monitoring and regulating the search process. To avoid a general deficiency perspective on older Web users, this study goes beyond the results of Web searching to focus on individual approaches to information problem solving. We conducted ten guided interviews based on two different search tasks the participants (aged 16-77) worked on while thinking aloud. Applying a qualitative content analysis approach, we find that younger participants (aged 16-26) use more productive strategies to collect information, but observed no age-related differences in completing a complex task. The strong task dependence of our results underlines the necessity of teaching regulative search techniques that are suitable for solving unstructured everyday problems in order to ensure that all users can make the most of today's rich but unstructured information environment.

Informationskompetenz ist keine Frage der Schnelligkeit. Analyse kognitiver Strategien bei der Websuche im Altersvergleich

Zusammnefassung

Jüngere Internetnutzer beeindrucken oft durch ihren schnellen und mühelosen Umgang mit Webanwendungen. Informationskompetenz ist jedoch nicht alleine eine Frage der Geschwindigkeit, sondern von kognitiven Fähigkeiten abhängig, die dem Überwachen des Suchprozesses dienen. Um eine vorschnelle Defizitperspektive auf ältere Webnutzer zu vermeiden, bezieht die vorliegende Studie die individuellen Ansätze zum Lösen von Informationsproblemen mit Hilfe des Webs in die Erfassung der Informationskompetenz mit ein. Die Datenbasis bilden zehn leitfadengestützte Interviews mit Teilnehmerinnen und Teilnehmern zwischen 16 und 77 Jahren, in die jeweils zwei praktische Recherchephasen am Computer integriert waren. Während dieser Recherchen kommentierten die Teilneh-

menden ihr Vorgehen (Methode des Lauten Denkens). Eine inhaltsanalytische Auswertung ergibt, dass die Jüngeren spezifische Strategien der Websuche entwickelt haben, davon aber nur im Kontext eines einfachen Informationsproblems profitieren. Die starke Aufgabenabhängigkeit unserer Ergebnisse unterstreicht die Notwendigkeit, regulative Suchtechniken zu vermitteln, die auch für unstrukturierte Alltagsprobleme geeignet sind. So wird gewährleistet, dass sich die vielfältige, aber unstrukturierte Informationsumgebung des Webs selbstbestimmt zunutze gemacht werden kann.

Information Literacy in the Current Media Environment

Today's media environment is characterized by an overabundance of information. The World Wide Web has a decentralized structure: relevant information has to be localized in an unmanageable amount of resources (van Dijk and van Deursen 2014). The greatest challenges associated with searching for information on the Web are thus (1) evaluating new information in a results-oriented way and (2) integrating these findings into the next search. From a process perspective, information literacy therefore represents a problem-solving ability, in which regulation of the search progress decisively determines whether (and to what end) the searcher can reach his or her objectives (Brand-Gruwel and Stadtler 2011). Therefore, in the current omnipresent, dynamic and dispersed information environment, information literacy should not be considered only a normatively founded, list-like standard (Shenton and Hay-Gibson 2011); it should instead be conceptualized as a regulative competence suitable for everyday use that enables people to benefit from the wealth of available information. This study therefore focuses on how effectively people can shape their search processes in a self-reliant and goal-oriented way.

Media and Information Literacy

Media literacy comprises the dimensions of knowledge, evaluation and action (Schorb 2005); knowledge is a necessary, but not sufficient, condition (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2016). The crucial question of how individuals translate knowledge into action can be addressed in different ways. We assume that media literacy manifests itself in the course of searching. This suggests the need to use a process perspective to reconstruct this translation into knowledge on a micro level (similar to Wirth et al. 2009; Schweiger 2010). Furthermore, it points to the necessity to develop a cognitive media literacy theory (Potter 2004): Conceptualizing media literacy as static knowledge often overlooks the considerable influence that information itself can have on searching. Information here refers to anything one encounters that is perceived as useful – regardless of whether it is complete or factually accurate. The influence of the information itself points to the evolving nature of Web

searching as exemplified in Bates' (1989) «berrypicking model». We hence define information literacy rather broadly as the ability to access, evaluate and use information (ALA 1989). Information-literate users are able to solve an information problem using the Web, which means they can use the unstructured Web environment in a goal-oriented, effective way. For this purpose, they have to develop meta-cognitive, top-down oriented skills like a strong process orientation (Brand-Gruwel et al. 2009), but they should also be able to benefit flexibly from information they encounter inadvertently. Although rather similar at first glance, information literacy differs from common notions of media literacy as it focuses on the act of searching (Bruce 2016). This narrow definition enables us to focus more on interactions with the information system – to analyze information literacy not as solely technical expertise, but as the interplay between cognitions and actions within a given technical infrastructure.

Search Strategies

To analyze information literacy from a process perspective, it is necessary to consider the evolving, dynamic aspects of Web searching. Bates' (1979) definition of «strategies» conceptualizes their overarching function in terms of a superordinate plan while also considering smaller, visible units of action – the «tactics» more aligned with short-term goals. Keeping this differentiation in mind, previous studies often referred to «search strategies» as research objects, but still analyzed them as a function of single actions. Only a small number of studies have investigated the cognitive dimensions of search strategies (Tsai 2009). This approach reduces strategies that involve more than single actions to simple decisions (e.g. using a search engine vs. entering an URL). Thus, little attention is paid to how these single steps integrate into the overall search process. In other words, applying the concept of «tactics» and «strategies» enables us to analyze actions with regard to their overarching function. Doing so can shed light on information literacy as a goal-oriented, processual, and regulative ability.

The Younger, the More Literate in Searching the Web?

Early studies on the Web as an information medium compared the search skills of different age groups and generally found that younger users perform better (for an overview, see Laberge and Scialfa 2005). Laberge and Scialfa (2005) found, for example, that older people take longer to find relevant information, which they attribute to age-related differences in memory performance, processing speed and spatial perception. However, this age effect does not remain significant if topic-specific knowledge and Web experience are included as control variables.

The assumption that older Internet users are less capable (Hargittai 2010) persists despite contradictory findings. Van Deursen, van Dijk, and Peters (2011), for example, demonstrate that although higher age and technical-related skills are negatively associated, they find a positive correlation between age and content-related Internet skills (van Deursen, van Dijk, and Peters 2011). Nevertheless, age has a negative net effect on Internet skills: technical skills outweigh content-related skills. By contrast, open analyses of individual search behavior clearly reveal differences depending on the age group, but these differences do not always manifest as deficits. For example, older people are more structured in their search for information, but this involves spending more time selecting suitable search terms and evaluating search engine results pages (SERP). Younger people are more likely to switch between different sites, are more impulsive in their selection, and make more mistakes (Youmans et al. 2013). For complex tasks, older people may even have an advantage because they can refer to their crystallized knowledge (Karanam and van Oostendorp 2016).

Assessing information literacy by age group should therefore not be restricted to technology-related skills. There is reason to assume that an open, unprejudiced analysis of individual search behavior can generate new insights about factors of successful searching independent of age, as well as deficits in the actions of younger users. This approach to studying search behavior can contribute to intergenerational exchanges on good searching practices. Leaving some restrictions that are indeed caused by physical age aside, such as decreasing vision (Dinet and Vivi 2009), factors other than Internet experience can cause age-based differences in search behavior.

Research Interest

Looking at younger adults operating Web applications effortlessly, it is tempting to view «digital natives» as generally superior to older users (Hargittai 2010). Yet as mentioned above, recent findings call this assumption into question. Van Deursen, van Dijk, and Peters (2011), for example, show that older people are more experienced at selecting, evaluating and strategically using information. People also develop mental representations of the Web, which in turn influence their search strategies (Youmans et al. 2013). For example, older users seem to be less digitally literate when using search engines. But this is not due to general deficiencies; instead, it is because their preferred way of interacting with the Web, and thus their mental model, does not fit the technical design of the Internet (Youmans et al. 2013). Since prior studies have often overlooked the complex cognitive demands necessary to conduct a proper Web search (Brand-Gruwel and Stadtler 2011), this paper compares the cognitive strategies that younger and older Internet users employ during active and intentional information seeking (RQ1) by reconstructing their overall approaches to Web searching (RQ2).

Study Design

As information search strategies are highly dependent on personal and situational characteristics, we expect our analysis of the Web search process to reveal a large variety that a standardized design can hardly capture. Therefore, we developed a qualitative, process-oriented approach to reconstructing the individual differences to searching (Strauss and Corbin 2010). The method uses semi-standardized interviews, during which the participants solved two different Internet-based tasks on a desktop computer while thinking aloud (Fig. 1).

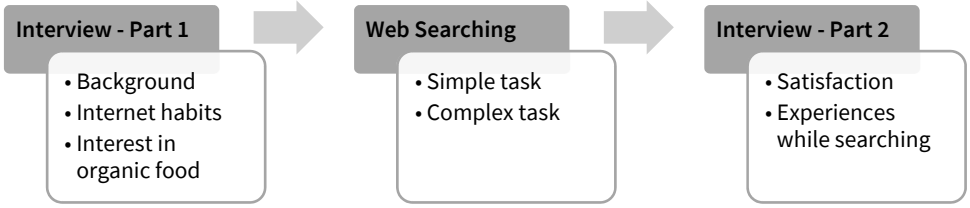

Fig. 1.: Study Design.

Capturing Web Searching

To address the criticism that information literacy is often analyzed on the level of physical interactions only (Litt 2013), we based our study on data triangulation (Flick 2011). Combining screen activity and verbal expressions allows us to analyze the same process from different perspectives (actions and cognitions). We used a screen capturing software Camtasia Studio to save all interactions with the computer. To capture cognitions, we invited the participants to verbalize everything they were thinking, perceiving, and feeling while searching the Web, which were audio recorded.

Since observational data alone do not reveal user intention (Meyen 2011), thinking aloud is a common technique to complement screen data in the context of media usage (Erlhofer 2007). Yet there are two main limitations of this approach. First, it is nearly impossible to speak aloud everything that comes to mind, as an individual may be thinking of more than one thing at a time, and thoughts may be fleeting before they are captured (Weidle and Wagner 1994). Second, it is demanding to search the Web and reflect upon it at the same time. Participants might stop speaking aloud or even worse, their reflection on their search behavior might influence their actions (reactivity). We addressed these potential problems by reminding our participants to speak aloud, but only when they were silent. For example, interviewers asked «um-humm?» or «What are you doing now?» (Olmsted-Hawala et al. 2010). The interviewers thus avoided asking about reasons for taking certain actions during Web searching, and tried to evoke level-1 and level-2 verbalizations only (Ericsson and Simon 1993). However, they took notes to ask for explanations in the subsequent

interviews. We were also able to contextualize the verbal protocols by matching them with the screen data Additionally, the entrance interviews were used to create an open, non-judgmental environment with the aim of reducing social desirability bias. Despite these concerns, thinking aloud is the only way to reveal at least some aspects of cognition.

Search Tasks as Stimuli

User motivation and the characteristics of a given task have a profound influence on Web searching (Erlhofer 2007). As it is nearly impossible to generate the necessary «real» information in an artificial lab setting (Meyen 2011), the search tasks should at least be generally interesting to the users in order to encourage a minimum level of involvement. We therefore decided to ensure a general interest in the topic, and aligned our sampling strategy to this main criterion. The search tasks (see Table 1) are both related to organic nutrition: a simple «collecting and evaluating» task (Wirth et al. 2016) and a complex task simulating a very specific, abstract information need that cannot be fulfilled by relying on one or two sources (Erlhofer 2007).

Task	
Simple	Read up on the **advantages** of **organic food** in terms of environmental issues and save your results.
Complex	The production of food causes CO_2 emissions depending on the method of production. It makes a difference whether food is produced in **conventional** or **organic** farming. Taking Germany as an example, there is a certain per capita consumption of potatoes per year that has to be cultivated. Imagine, we are in the year **2020**: How much **CO_2 emissions (in grams)** could be **saved in Germany** if the quantity of **potatoes Germans consume per year** were cultivated from now on exclusively using **organic** farming?

Tab. 1.: Wording of Search Tasks.

The simple task is designed to represent a more everyday information need. For everyday purposes, it seems sufficient to get a basic overview of a topic and it is less problematic if this overview builds upon vague or inaccurate information. The complex task involves determining and combining detailed aspects. This requires a high degree of cognitive reflection, either in order to remember sources that provide such detailed information or to sufficiently specify a search query to locate the information. This task is challenging and not typical of everyday searching. However, as it requires a significant amount of cognitive reflection, we designed this task to investigate how pre-planned and structured people approach searching for specific information using the Web.

Sampling

We used a qualitative sampling plan to generate a sample with maximal variance in age and homogeneity in possible influential factors (formal education, gender, former Internet experience, topical interest) (Kelle and Kluge 2010). Subjects were recruited through personal and professional connections, an advertisement in a social health insurance member's journal and via a special educational facility for elderly people in Dresden. In total, we recruited ten participants between 16 and 77 years. Data collection took place between May and July 2014 in the premises of TU Dresden.

Data Analysis

Data Preparation

The interviews, including the thinking aloud parts, were transcribed using standard spelling, not correcting for filler words or short pauses. The screen interactions, captured as video data, were then put into writing. Using the MAXQDA video coding function, we first structured the video data by defining search phases derived from the literature. Second, we verbalized all visible actions. Based on the search phase structure, we were able to match the thinking aloud protocols with the verbalized actions. The resulting «flow charts» for each search process function as our main source for data analysis (see Table 2 for an example). Our final data base comprises ten transcribed interviews and 18 corresponding flow charts (eight based on the simple, ten based on the complex task due to two faulty data files).

Step	**Time** (in sec.)	**Site**	**Parameters**	**Thinking Aloud**
Search	33	Google	Query: «per-capita potato consumption»	So, I'm just googling potatoes. That is what I need. Germany.
SERP	07	Google SERP	Selects 1st result: «per-capita consumption of potatoes decreases in Germany»	… decreasing. Aha!
Content	77	wochenblatt.agrarheute.com/	Bavarian Agricultural Weekly Paper - «per-capita consumption of potatoes decreases in Germany»	[…] Now I'd like to have 7 kilos per, 11, let's say 10, in 2010 there were 57g. Aha. Good quality as the reason. I'm still on this page, it's named agrar.com. This is where I've found per-capita consumption. There is written – yes, I'll take it.

Tab. 2.: Exemplary «Flow Chart» of Web Searching.

Qualitative Content Analysis

Based on these flow charts, we conducted a qualitative content analysis (Kuckartz 2012). The resulting coding system captures cognitive processes during Web searching as a function of screen activities: The coding system is mainly based on cognitions during Web searching, but also relies on behavioral data when indicated. For example, the evaluative category «level of reflection when entering a search term» is assigned to the level «no reflection» when the participant does not comment on the formulation of a search term that is thus only visible in terms of behavioral data. In a first cycle of coding, we applied eight deductively developed main categories. In a second cycle, we inductively differentiated these categories into subcategories by retrieving the occurrences of codes aligned with the respective main category. Each time a new subcategory was added, we reviewed all the text passages of the corresponding main category again. Seven subcategories revealed an evaluative character, leading to the formulation of nominal and ordinal code specifications (Kuckartz 2012). The final coding system was comprised of nine main categories and 26 subcategories.

Findings

Participants' General Characteristics

According to our sampling strategy, the participants varied in age – ranging from two 16-year-old female high school students to two retired men over 70. All participants had above-average levels of formal education, and the older subjects all had a professional background related to technology. The older participants had less previous Internet usage, but they still worked with computers and used the Web for different purposes (see Appendix for a summary of the main sample characteristics). We refer to participants based on their gender and age: for example, «M57» refers to a male participant who is 57 years old.

Individual Approaches to Active and Intentional Web Searching (RQ1)

As stated in the theoretical introduction, search strategies represent the general approach to searching the Web. These strategies rely on smaller, physical and cognitive steps known as «tactics». We first present some of these tactics, using the structure of Web searching phases, to illustrate how participants approached this task.

Search Engine Use

Every search process entails the use of at least one search engine (e.g. Google or Ecosia) – but without any explicit cognitive reflection. F60 stated: «Most of the time, I'll just enter what comes to mind. For me it is not mandatory [to think about it in advance]» (F60). The majority of search queries consisted of content-bearing terms like «organic food», «CO_2 emissions» or «potatoes». The search inputs differed systematically between the two tasks, as the average number of words per search query was higher for the complex task. The reason is not the use of more keywords but of sentence-like constructions similar to natural language: «saving CO_2 with organic food» (F16-2); «CO_2 emissions in the production of food» (F26); «CO_2 consumption in the cultivation of potatoes» (F65). This approach intends to generate results that precisely match the information problem. F16-1 stated that she always falls back on whole questions if she has «no idea of the topic» (F16-1). F16-2 hoped that her question had already been asked (F16-2) and that the exact answer could be found somewhere on the Web: «I hope then for a concrete result» (F16-2). Instead of reflecting on how to link search terms using Boolean operators, most participants learned that popular search engines also provide answers to questions formulated in natural language. In contrast, M77 used the «advanced Google search» option, searching for pages that «contain all these words»: «organic food, benefits, environment».

In the course of their searches, participants adapt and reformulate their queries. For the simple task, some tried to narrow their initial search query to increase the relevance of the results: «Organic food» > «advantages of organic food» (F26; similar F16-2, M21). M53, F60 («organic food»), and M77 («organic food, benefits, environment») did not change their initial search query during the process; they spent more time re-evaluating the first SERP instead of generating a new list. In the complex task, participants tended to reformulate their search queries (F16-1; F16-2; M21; M53; M57; M77), which is not surprising given the task's different thematic dimensions.

SERP Evaluation

When retrieving the SERP for the first time, participants selected the top result. F16-2 perceived the other links to be «additional information», and F60 stated: «basically, I look at the first one [...] Almost always». However, returning to the SERP in the course of searching, participants started considering the results further down and reflected on them with regard to their potential information: «I leave out the next one, because [...] this only refers […] to taste. That's why I want to select the link below, with the environmentally friendly and healthy [aspects]» (F16-2). M77 proceeded systematically but slowly, hovering the mouse pointer over each entry, reading the title and meta-description aloud before moving onto the next result.

During the SERP evaluation, the evaluative code «process orientation» covers statements in which a participant verbally relates his or her individual action to the

entire search process, revealing different degrees of reflection. While F60 broadly spoke of «looking further», M53 explicated, «I have to get some information about [CO_2 emissions] first». He also analyzed where the search currently threatened to fail and, like F26, excluded results that did not correspond to the information goal. M77 expressed concerns about «getting distracted» and losing sight of the target. Therefore, he recalled the task («What is my task? Record your results») and carefully evaluated the search result: «it fulfils everything I have written down».

Content Site Reception

After opening a page, the participants had to decide which part of the website they wanted to look at more closely (tactics for task-oriented reception). The evaluative coding scheme differentiates between rationales under explicit task reference vs. those based on more general criteria. A task-oriented reception assesses the fit of the content to the task: «That's pretty good, the page [because] there is a differentiation between conventional and ecological» (M21). Sometimes, the assessment was more implicit: «quantity --- emission --- ahhhh haaa! Over 200 grams CO_2 per kilogram» (M74). On the contrary, selection decisions without a task orientation referred more to presentation features like a Web page that looks «relatively well arranged» (F16-2). Trying to extract relevant content (tactics for information exploitation), some participants summarized the text either verbatim or very closely (M21, M53, F65). M53 demonstrated a problem-solving strategy based on previous knowledge («Good, then I go ahead with [extrapolating from] one person … say you multiply it by 85 million»). F65 made an assumption about how to interpret the found information in order to be able to make further search steps (F65). While extracting information from a content page, some participants also discovered that they did not understand certain aspects of the task: «What is actually – why should I actually imagine it is the year 2021?» (F26).

What Do Tactics Reveal So Far?

Participants developed very different ways of searching for information on the Web. In summary, we found that the use of a search engine initially involves relatively low cognitive reflection: Called the «strategy of least effort», the participants put little thought into formulating a suitable search query and simply chose the first result link. If the first search was not successful, participants then put in more mental effort to develop their query; here too the evaluation of the results is reflected rather than the initial query adapted («strategy of focused SERP»). These tactics reveal that participants increased their cognitive effort over the course of a search, so some only realized that they did not know what to look for after the initial results were displayed. The next section explains the function of these tactics for the entire search process.

Successful Web Searching and the Role of Age (RQ2)

The identified tactics make it possible to abstract the findings of single actions to general Web search strategies. This section focuses on our main findings: (a) a strategy specific to younger users, (b) the role of own deliberations while searching as part of the complex task and (c) the role of speed.

Using the Hyperlink Structure

All participants (with the exception of M77) started the simple task by directly opening a search engine and immediately entering a search term. They seldom adapted the query during their search. Thus, we first distinguish between search-engine-based strategies and strategies related to interlinked website visits. Participants using the latter approach wandered through the Web by following related, hyperlinked articles, moving between content pages without (re)using a search engine. The information environment guided the search process, a behavior often labeled «browsing» (Kellar, Watters, and Shepherd 2007).

Although browsing does not require any initial cognitive reflection, this strategy is still considered to be the «most difficult variant», as encountering relevant content is perceived to occur «only with a lot of luck» (F26). The interviews reveal that attitudes towards «browsing» differ strongly between those under 30 and those aged 57–77. Younger users consciously allow themselves to be guided from one page to another, especially when they address unspecific information needs. M21 and F26 reported that they prefer to start using «YouTube» or «Wikipedia» in order to «get a broad overview» and «somehow an idea of [the topic]». Both 16 years old reported using multi-thematic websites to begin their searches. Older participants, by contrast, rejected general browsing. They reported avoiding interlinked websites because they are «distracting» and lead to a «fragmented search» (M57, F60, M77). M77 also complained about «too many links» and expressed fear that by following these links, «you would then move in circles».

How does the use of interlinked website visits relate to solving an information task? Although F26 perceived it as difficult, she was still somewhat successful at collecting information in this undirected way – as were the other participants under age 30. By contrast, F60 demonstrated an unsuccessful trial of browsing even though she reported that she usually avoided this approach. Since she justified following a related article with task-unrelated criteria, she lost sight of the actual search goal (that is, collecting information about the advantages of organic food): «Healthy nutrition in the nursing home … since our mother-in-law was in a nursing home that is also a question» (F60).

Considering the tactics presented above, we conclude that younger users are more successful at browsing because they developed a goal-oriented version of it – the «strategy of heading». We define this as a top-down, goal-driven strategy mainly

based on the tactic of «task-oriented reception». This strategy involves repeatedly reflecting on the task when extracting information, immediately checking the usefulness of the information found, and including the new input into the evolving search. This strategy enables the searcher not only to benefit from the wealth of information on the Web, but also to manage it in a time- and resource-efficient manner. Assuming that interlinked websites provide further relevant information on the advantages of organic food, they did not have to return to a SERP or formulate a new search query, which would require more time and cognitive resources than simply following suggested links. Only young people in our sample displayed the disposition to «just browse» through an unstructured, sometimes overwhelming information environment and to work pragmatically with whatever one encounters – thus to use the Web for «berry picking».

Using One's Own Capacities

While searching for the simple task mostly involved the immediate use of a search engine, a contrary approach to the «strategy of heading» was used to complete the complex task. With the exception of M21 and M57, the participants initially took time to think about the complex search. In these phases of no physical interactions (thinking without acting), M21, M53, and F65 summarized the task in their own words. Others explicitly broke it down into initial and target parameters, and concluded that «for this question [I] have to draw a model first» (M53; similar M21, M77). M53 also anticipated the estimated time required. M77 tried to remember sources and took notes on the necessary search steps on a sheet of paper. Based on these observations, some participants obviously applied a strategy of «initial planning», that is pre-planning and structuring the search by reflecting on the task requirements and anticipating the course of the search required to perform the complex task.

Phases without physically interacting with the computer not only occur at the beginning, but also at various points during the search. We find that these interruptions are associated with the tactics «summarizing», «using previous knowledge» and «formulating intermediate results», which help regulate the search process («strategy of refocusing»). Yet, some participants did not explicitly elaborate on the content at all (F16-2, M57, F60, and M74). Similar to the simple task, F26 again applied a strategy of using interlinked websites (in the undirected browsing version), but here this approach was revealed to be cumbersome: She used excessive mouse movements to search through various sub-pages. When asked by the interviewer what she hopes to find, she replied: «I don't know» (F26). Not elaborating on the content and/or an unguided search process are obviously related to being unsuccessful, whereas initial planning or refocusing – and thus using one's own cognitive capacities – are the most important ingredients of success for the complex task.

Slow(er), but self-reliant

In line with previous findings, this study reveals a difference in processing speed depending on age: The simple task requires discovering information in distributed structures; finding more than one environmental advantage is essential. Thus, time constraints influenced the simple more than the complex task. By setting the processing time for each participant in relation to his or her total number of search phases, we are able to include a time-related measure in our analysis. On average, younger users (< 30 years) spent 55 seconds per search phase for the simple task (compared to 1:14 minutes for older users). For the complex task, younger participants spent an average of 36 seconds within a single search phase, while older participants spent 59 seconds. Younger users made more frequent and faster changes between search phases. This gives them an advantage in processing a task that requires collecting information from different sources simply due to their higher processing speed (a result similar to that found by Karanam and van Oostendorp 2016). The three elders (> 60) were aware of their slower progress, but did not see this as a problem: «I was [...] a bit slow (…), that doesn't bother me» (F60: 143) or: «Thank God it's not time that matters here» (M74). However, M77 felt «a certain pressure of time, stress that caused me to collect first». In contrast, M53 and M57 did not regard time as a critical factor.

Thus, we cannot conclude that faster surfing automatically translates into greater literacy in Web searching. We found that immediately «diving into» the wealth of information is associated with basing the progress of the search on the guidance of the external resource – the «Web». In combination with meta-regulatory skills, the aforementioned «heading strategy» can emerge out of this approach. Without regulation, however, it can also cause the user to lose sight of the search goal or to be satisfied with the «first-best» solution. Even more important, there are questions that are too specific to find a whole and concrete answer in the Web. Cautiously interpreting our data in terms of age, older participants might tend to approach the Web more as an external knowledge repository that does not provide solutions, but helps them find the right information to solve the problem (M53, F60, M77). Some of the younger users, however, expect the Web to answer the question (F16-1, F16-2, F26). This tendency might become more prevalent as more and more platforms arise that pre-select, filter and recommend content to users.

Discussion and Conclusions

The Role of Age

Although searching the Web varies greatly between individuals, we used the analytical concept of tactics and strategies to identify similarities in information problem-solving using the Web. For a simple information collection task, using interlinked websites by applying a «strategy of heading» – a goal-oriented version of «just browsing» – is useful. This strategy was only used by younger participants (< 30); older subjects (53–77 years) tended to have concerns about what they regarded as random surfing (although some of them did «browse» as well). The simple task benefited from performing more search steps in a short amount of time, which gave younger participants an advantage. For the complex task, which involved locating specific information, there were no major differences in performance based on age. This task benefits most from pre-planning and interrupting the search to rely on previous knowledge or to elaborate on the information found – a strategy that some of the older participants (F65, M77) tended to use, while some younger users (F16-1, F16-2, F26) relied more on the results offered by the search engine. In our view, this indicates different perceptions of the value of technical systems like «the Web» as an external knowledge repository among people of different ages; they differ in their willingness to delegate information problems to the guidance of a technical authority. By this, we do not mean to imply that age is a direct influencing factor of searching behavior. However, age might still function as an indicator for these dispositions, leading to the development and application of different strategies, which might in turn affect search success. We therefore consider the individual's willingness to delegate the task of «cognitive» reflection to the Web to be the underlying determinant. People's attitude to using the Web might be as important as their cognitive or technical abilities in determining their level of information literacy.

Methodological Reflections

As observing media usage in a naturalistic environment is costly and nearly impossible for pragmatic reasons (Meyen 2011), we initiated the usage artificially by assigning tasks to participants. In addition to the limited external validity of this approach, it might also be associated with a fear of failure for the participants (Meyen 2011). However, most of the participants reported that the study setting inspired their ambitions. Furthermore, the interviews revealed that they took searching for the information seriously, although they perceived the tasks to be artificial. Internal validity is hence probably sufficiently fulfilled, but transferring the findings to other tasks is subject to reservation.

Another limitation that is not easy to resolve is how to investigate potential age effects without generating them by design. We addressed this concern by first deriving the tactics on an individual level, independent of age. We then investigated similarities between persons, resulting in indications of differences between those under 30 and those aged 53–77.

By focusing on other facets of Web searching than the three arguments presented above, different groups of comparison might have emerged. For example, there were similarities in the way M21, M53 and M77 structured their thinking that we could not elaborate on here due to limited space. In order to compare approaches to Web searching between different people, future studies should systematically collect media biographies instead of using just their age, and plan the analysis accordingly.

Implications for Information Literacy Research and Teaching

The definition of information literacy applied in this study originates from information behavior research; it has thus far received little attention within media pedagogy. However, this study demonstrated that it is worthwhile to consider a navigation and process perspective on information literacy, and to focus more on the interplay of cognitions and the information system's characteristics. Since search success is highly dependent on cognitive reflection, information literacy manifests itself in the process of searching. Although we do not question the value of formulating media literacy principles in the sense of an aspiring standard in general, two main aspects should be considered in the future: (1) How can a transfer of these ideals to the dynamic and fast Web environment succeed? (2) How can we break down the aspiring information literacy standards to a level appropriate for everyday problems?

The identified «strategy of heading» could be such a starting point for teaching how to move through (and profit from) an unstructured but potentially rich information environment. This strategy could also stimulate an explicit reflection on the value of self-reliance in Web searching, and in turn address the risks that can arise from delegating informational tasks to recommender systems without conscious reflection. Either way, the aim will be to make some (presumably younger) people more aware of the act of using the Web, while others (presumably older) should be encouraged to dare to «just browse». An intergenerational exchange on how different people approach Web searching (e.g. using the concept of mental models) might increase awareness of each other's skills as well as one's own shortcomings. Based on our findings, information literacy should above all teach meta-regulative skills that make it possible to assess the requirements of an information problem and to use one's own reflections as well as the Web's wealth of unstructured information.

Further Research

Further research should try to reconstruct the mental models of Web searching in the sense of active vs. passive guidance through an information environment using a broader sample. By including media biographies, possible reasons for this behavior might emerge as well as more sophisticated grouping variables than «age». Thus, future studies should define «age» as an indicator for mediating concepts like mental models, so that age-related characteristics of Web searching are taken into account but do not obscure characteristics that are independent of age.

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Appendix

Description of Participants

Participant	Age	Education	Professional Background	Internet Usage	Topical Interest
F16-1	16	High School	Student, grade 10	daily, «actually always»	+
F16-2	16	High School	Student, grade 11	daily, using smartphone and netbook	+
M21	21	High School Graduation	Student Communication Science	daily, internet as main information source	++
F26	26	High School Graduation	Student Sociology	daily, Internet for almost all purposes	+
M53	53	University Degree	Land Surveyor	regularly, but not daily; «not that excessive»	+
M57	57	University Degree	Construction Supervisor	quite regularly	+
F60	60	University Degree	Researcher in Natural Sciences	regularly in work related settings	+
F65	65	University Degree	Retired, former in the field of precision engineering	almost daily	++
M74	74	University Degree	Retired, former an engineer	almost every second day; «I'm still learning»	?
M77	77	University Degree	Retired, former in the field of protection and control technology	daily using a PC, but not the Internet; «first, bank transactions, second stock market data»	+
‚+ +' «strong interest»; ‚+' «some interest»; ‚?' «not discussed in interview»					

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Digital technology for Indonesia's young people

The significance of SNS use and digital literacy for learning

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Abstract

Indonesia has recognized the growing demand for information technology, with the most rapid adoption of this technology being amongst its young people. Within the perspective of a balanced knowledge information society, the adoption of technology is crucial for improving social development in developing countries and is considered a particularly important tool in education. The education sector is well-placed to harness the potential of ICT for the millennial generation in these societies. Based on a survey of students enrolled in a university in Jakarta, this study attempts to identify the learning and development opportunities available through digital technology by exploring both how university students in Indonesia use this technology, and how they experience and perceive the benefits of digital learning. In particular, we examine how their access to and use of technology is associated with their digital literacy and their perceived usefulness of ICT. In general, Indonesian university students are actively engaged in a number of diverse activities online, including educational activities, which in turn result in increased online learning outcomes. A better understanding of the role of digital literacy and learning environments and effective use of technology for learning can provide important insights into education and technology use in Indonesia and similar contexts.

Introduction

Today's young people are predominantly portrayed as tech-savvy. Their tech fluency is taken for granted, hence the term 'digital native' (Prensky 2001) which has often been used to explain the difference between the younger and older generations. It is evident that the current generation is familiar with *conventional* technologies such as the internet and smartphone. Nevertheless, it is important to look more deeply into ways of using technology, nuanced differences in this use, and the effect of technology adoption on young people. Critical commentary on this view of young people and technology has been made, particularly with regard to the lack of empirical observation (Kennedy, Judd, Dalgarno & Waycott 2010). More in-depth consideration of their different practices and perceptions should be made by adopting broader and more open-minded perspectives in research concerning younger generations.

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It has been recognized that there is a lack of data on technology adoption in a variety of contexts where digital technology has begun to advance only recently (Bartikowski, Laroche, Jamal & Yang 2018), including in developing countries such as Indonesia. Furthermore, digital technologies including social networking sites (SNS), have become a significant communication resource, allowing young people to access several subsets of communication platforms anywhere, anytime, and at a low cost or free. These resources are used in different contexts as a means not only of managing their friendship networks but also sharing interests and information. It has enabled the creation of, and access to, social resources for developing their skills and knowledge in a variety of fields through shared online activities.

This study, therefore, aims to focus on the experience and perception of education technology in young people in Indonesia, in an attempt to extend our understanding of the learning practices of this younger generation. In particular, we attempt to examine social media use and its role in learning among Indonesian young people.

Digital literacy: its growing importance in the ever-changing digital era

The digital divide has been described as one of the most important social inequality issues facing the information society (Hoffman, Novak & Slosser 2001), and the term digital inequality is often used to turn attention away from the simplistic dichotomy, access to ICT. The technological emphasis of early digital divide research resulted in physical access being considered as equal to technological access (Van Dijk, 2006). From this perspective, having access was translated into use of and access to information and resources. However, an increasing number of researchers, such as DiMaggio and Hargittai, suggest that the concept of a digital divide should be discussed «beyond access». They argue that it should be reframed based on the different contexts of use, which significantly shape the experiences of use.

Some researchers have begun to extend the concept of the digital divide to inequalities in skill or competency in the use of technology. Hargittai (2002) considers variations in levels of skills and usage among individuals, conceptualizing a second-level divide which can lead to unequal benefits being accrued by internet use. Such a divide has become more evident as access is increasingly made available (Livingstone & Helsper 2007; Park 2012; Selwyn 2006; Tsatsou 2011; Van Dijk 2005; Zillien & Hargittai 2009). Different levels of skill result in variations in ways of using technology such as the internet. In order to optimize its usefulness and target particular needs, the internet should be used effectively, rather than merely be available. If users cannot effectively use the technology, then merely having access does not mean that a digital divide has been overcome (Hargittai 2002). Instead, the problem becomes more complex (Van Dijk 2013).

Information technology is a way of life for the millennial generation, who are living in the most wired, connected world to date (Henderson, Selwyn, Finger & Aston 2005). Norris (2001) argued that developing countries are able to elevate their economic development and minimise poverty with the help of technology. Providing internet access to less-privileged societies (Jensen 2007) and improving the quality of their technology use (Tsatsou 2007) are some ways to do that. However, areas that require improvement are not confined to technology and its distribution. As discussed above, being digitally enabled increasingly requires the effective use of technology (Park 2017) in an ever-changing digital environment. Currently, as informatization has accelerated in many countries, including both developed and developing societies (Houghton 2010), national ICT strategies have been targeting a balanced knowledge information society in which information literacy plays a key role for users (ITU 2013). In order to establish a balanced digital culture in a society, it is essential to assure that its members can make productive use of ICT in their daily lives and generate digital opportunities to be able to engage properly in the consumption and production of social resources.

When it comes to education, digital technology does not merely facilitate online learning but can also play a crucial role in resource sharing, by connecting those who need a resource to those who have the resource which ultimately enables users to accumulate resources. We need to further examine digital learning in which networked individuals, particularly young people, can play as a learner as well as a provider and sharer of resources.

There has been a significant growth rate in ICT adoption over the past few years in developing countries (ITU 2013). Within the perspective of a balanced knowledge information society, the adoption of technology is crucial in improving social development in developing countries. There, it is considered an especially important tool in education allowing the population to better harness the potential of ICT for the millennial generation.

ICT and young people in the Indonesian context

Internet use in developing countries has been observed as being left behind compared to developed countries [ITU, 2018]. This observation remains valid for digital technology ownership, showing lower rates of smartphone ownership in developing economies despite the surging increase in their use. However, while the global digital divide has largely been recognized, in local contexts, the digital divide *within* emerging and developing countries has not yet been studied (Bartikowski et al. 2018). Recently, it has been observed that high rates of social media use are being found in emerging and developing countries, such as Indonesia (Poushter, Bishop & Chwe 2018). Interestingly, in such economies, the rates of social media use are

almost equal to internet use as a whole. This pattern is significantly different to most developed countries, such as Germany. For example, according to the latest internet use statistics, 52% of Indonesians use the internet, which is the same percentage as active social media users (Hootsuite 2019).

It is undeniable that digital media plays a major role in the daily life of a great number of Indonesian people. As the fourth largest population in the world (World Bank 2011), Indonesia is now an emerging country in terms of digital media consumption. Utomo et al. (2013) show that Indonesia has the second- and third-highest number of Facebook and Twitter users, respectively. Moreover, more than 70 million Indonesian people, approximately 30% of the total population, are active internet users and more than half that number access the internet via mobile devices (eMarketers 2013). The use of internet, especially via smartphones, is more prevalent among young and more educated people (Puspitasari & Ishii 2013).

The high use of internet via mobile phones, which has resulted from affordable devices and inexpensive data packages (APJII 2012), means that using technology and the internet in daily activities has now become «normalized» in Indonesia (Bax 2002). Even people from a low socio economic background can more readily afford this sophisticated technology today. In addition, with more than sixty million young adults aged 20-34 (Statistics Indonesia 2011), Indonesia is emerging as one of the most promising markets in terms of ICT penetration (Utomo et al. 2013).

However, despite this increase in the development of technology, the potential benefits of technology have not been fully maximized. For example, a study by Bilbao-Osorio, Dutta, and Lanvin (2014) measuring network readiness and country development reported that Indonesia was placed 67th of the 142 countries observed. Many possible factors may have contributed to this result.

The report by The Economist mentioned above, for example, shows that most Indonesian people use the internet for entertainment rather than information-oriented activities. Those preferences in technology use may be attributed, as Bondafelli (2002) argues, to people with higher economic status and educational opportunities tending to use the internet for information gathering, while those lower on this scale mostly using it for entertainment purposes. This argument is consistent with the above-mentioned finding about affordable devices and data packages; people with low social economic status can afford smartphones and get connected to the internet easily.

However, digital media can also be used for more meaningful purposes. For example, integrating technology into education may assist with teaching and learning processes in the classroom. This makes the technology itself more meaningful and introduces the younger generation to technology in a more educated and purposive way. Acknowledging these benefits, the Indonesian government included technology in their updated 2013 Curriculum. Retnawati, Hadi, and Nugraha (2016) state that

one of the key points in this latest curriculum is attention to harnessing technology in class. Students are involved in information gathering from the various sources available, including the internet. However, while smartphones and the internet are widely used by students, it is unfortunate that the official use of technology provided by government is still in its infant stage, with the adoption of computers for final examinations only.

Research questions

This study aims to identify the learning and development opportunities available through digital technology, and in particular social media use, by exploring how Indonesian young people use this technology, and experience and perceive the benefits of digital learning. Furthermore, we examine how their digital literacy is associated with outcomes such as perceived online learning satisfaction. The following research questions were formulated:

- To what extent and for what purpose do young people use the internet and social media?
- To what extent do young people use the internet for learning?
- Are internet use, social media use, learning experiences online and digital media literacy related to online learning satisfaction?

Research Method

This study used a self-administered questionnaire method to collect data. The survey (paper-based) was conducted in a university in Jakarta between September and October 2016. Two trained graduate students randomly recruited undergraduate students on the campus and then distributed and gathered the survey, answering questions if required. Participants were given a very small gift (stationery) in compensation for their time completing the survey. Ethical approval was obtained from the researchers' institution (University of Canberra) before data collection began.

Measurements

Online activities. Participants' different online activities were measured with 14 items designed to identify how often the participant engages in online activities. In responding to these items, we asked participants to consider all their devices, such as computers, tablets, and smartphones. Answers were reported on an eight-point Likert-type scale ranging from (1) 'never', (2) 'less than every few months', (3) 'every few months', (4) 'every few weeks', (5) '1–2 days a week', (6) '3–5 days a week', (7) 'about once a day', to (8) 'several times a day'.

SNS use. SNS use was measured by averaging 19 items of user behavior on social networking sites, designed to identify how often the participant engages in activities on social networking website(s). These items were: 'keep up with friends' statuses'; 'visit friends' pages'; 'reply to friends' status updates'; 'chat with friends'; 'update my status'; 'post photos, videos or music'; 'read others' comments to my postings'; 'add friends'; 'join group activities'; 'organize/join events'; 'share links (photos, videos, etc.)'; 'search for information related to studies'; 'play games'; 'watching video clips'; 'reading/watch news'; 'learning, professional activities (search for job)' and 'share homework/information'. The answers to these items were reported on an 8-point Likert-type scale ranging from (1) 'never', (2) 'less than every few months', (3) 'every few months', (4) 'every few weeks', (5) '1–2 days a week', (6) '3–5 days a week', (7) 'about once a day', to (8) 'several times a day'.

Digital literacy. We measured both device literacy and content literacy, adapted from Park and Burford's (2013) measures of digital media literacy, with 3 items respectively on a 5-point Likert-type scale based on the following: not at all (1), not much (2), somewhat (3), quite a bit (4), and very well (5).

Learning satisfaction online. This study adapted satisfaction with social media measurement used in Hong et al.'s (2015) study, which was originally proposed by Lin (2008), and Song and Zinkan (2008). We measured the level of satisfaction with online learning experience with four items on a 5-point Likert-type scale based on the following: strongly disagree (1), somewhat disagree (2), neutral (3), somewhat agree (4) and strongly agree (5).

Demographics. Gender, age, parent's income, and GPA variables were measured.

Participants

In total, 524 respondents were collected, of which 496 respondents were finally used for data analysis after data checking. Of the final respondents, 66.3% (326) were female and 33.7% (166) were male. Respondents aged 16 – 17 were 9.1% (45), 18, 36.6% (181), 19, 29.1% (144), 20, 16.8% (83) and 21 or over, 8.3% (41). The distribution of parents' monthly income (IDR) among respondents as follows: 'less than 1,000,000 – 2,500,000', 29.1% (143), '2,500,001 – 4,500,000', 36.5% (179), '4,500,001 – 11,000,000' 25.9% (127), and 'more than 11,000,000', 8.6% (42). 31.9% (158) were a freshman, 41.4% (205) were a sophomore, 18.2% (90) were a junior and 7.0% (34) were a senior.

Results

What Indonesian young people do online

The majority of participants used a smartphone (94.3%) and a laptop (95.6%). 61% of participants reported having internet access at home (average home access 47.2%, ITU 2017). The most popular way to access the internet was mobile data (3G/4G), with 83.2% of respondents reporting using the internet often/very often through it, whereas only half of respondents (50.8%) reported using the internet often/very often through Wi-Fi.

On average, participants spend 10 hours online. There were significant gender differences showing female students (11 hours) spend more time online than male students (9 hours). Likewise, female students (9 hours) than male (7 hours) students stay longer on SNS [Table 1]. Participants reported surfing/browsing the internet (M=7.28), searching information (M=7.14), posting/replay to messages (M=7.12) and using social networks sites (M=7.01) on average once a day. Following these activities, participants often use the internet for learning (M=6.72). Looking at gender differences in online activities, female students significantly spend more time for searching information/surfing the internet than male students, whereas male students (M=4.32) spend more time for playing online games than female students (M=2.92).

In order to assess the underlying structure of the 19 items of SNS use behavior, a factor analysis was performed. This procedure resulted in three factors with an explained variance of 62.4%. The five factors were labelled as follows: 'Information and learning' (α = .793), 'group activity' (α = .756), 'social communication' (α = .777), 'self-disclosure' (α = .811) and 'entertainment' (α = .590). The means of the scales in each component were used as variables.

		Total	Gender	
			Female	Male
Average hours spent on the internet (a day)***		10.4	11.24	8.79
Average hours spent on SNS (a day)**		8.2	8.74	7.20
Information/ learning	Search for information*	7.14	7.25	6.96
	Surf/browse the internet*	7.28	7.35	7.17
	Learning (for schoolwork or other interests, e.g., languages, etc.)	6.72	6.83	6.51
	Read e-books/news/magazines/journals	5.35	5.30	5.47
Entertainment	Watch movies, TV shows, animation, etc.	5.35	5.30	5.42
	Watch video clips	5.43	5.35	5.60
	Listen to music, podcasts/other audio files	5.83	5.95	5.60
	Play online games***	3.40	2.92	4.32
Communication	Send/receive email	5.16	5.13	5.23
	Visit online communities	4.86	4.74	5.11
	Social networking sites	7.01	7.13	6.81
	Instant messaging	5.71	5.65	5.83
	Post or reply to messages	7.12	7.23	6.92
Other	Online shopping	2.95	2.99	2.86

Tab. 1.: Online activities.[1]

When it comes to different types of SNS usage, female students are more frequent users of SNS in social communication and self-disclosure, whereas male students are more frequent users of SNS in entertainment [Table 2]. However, no gender difference in SNS use for group activities and information and learning was found.

	Total	Gender	
		Female	Male
Group activities	4.19	4.16	4.26
Information and learning	6.03	6.11	5.91
Entertainment***	4.36	4.13	4.84
Social communication**	5.23	5.40	4.93
Self-disclosure**	5.05	5.21	4.74

Tab. 2.: SNS activities.[2]

1 * p < .05, ** < .01, *** p < .001
2 * p < .05, ** < .01, *** p < .001

The most occurred learning activities online among participants were 'communicating with friends for homework or study' (M=4.22), followed by 'searching information for homework or study' (M=4.20) and 'looking for answers to questions relating to homework or study' (M=3.97) [Table 3]. On the other hand, watching online videos for study (M=3.08) and taking freely available courses and educational content (M=2.54) were the least occurred activities among participants. Female is more likely to be engaged with learning-related activities online than male, in particular, in cooperating in their study with others, such as communication and seeking for study partners, and information searching.

	Total	Gender	
		Female	Male
Communicating with friends for homework/ study***	4.22	4.34	3.98
Searching information for homework/study***	4.20	4.32	3.96
Looking for answers to questions relating to homework/study	3.97	4.02	3.85
Getting peer support/help for homework/study	3.88	3.94	3.77
Finding good examples for essays and reports relating***	3.85	3.96	3.62
Getting study partners or groups*	3.39	3.47	3.25
Watching online videos for your studies	3.08	3.11	3.02
Taking freely available courses and educational content	2.54	2.56	2.50

Tab. 3.: Learning activities online.[3]

Relationship between use of the internet and SNS, digital literacy, learning experience online and satisfaction

To examine the relationship between variables measured, a correlation analysis was conducted [Table 4]. SNS use was positively related to learning satisfaction online; however, how participants use SNS matters. SNS use for information and learning, group activities and social communication are significantly correlated with learning satisfaction, whereas there was no significant correlation with use of entertainment and self-disclosure. Digital literacy is also significantly correlated to learning satisfaction; in particular, device literacy was highly correlated. In terms of learning experience, the more participants use for learning online, the higher perception of learning satisfaction is observed.

3 * p < .05, ** < .01, *** p < .001

An ordinary least-squares (OLS) regression analysis was conducted to predict perceived online learning satisfaction. As a result, gender, device literacy, and online learning experience emerged as positive and significant predictors. Female experienced higher satisfaction of learning online than male. Frequent online engagement for learning and higher levels of device literacy implied higher satisfaction of learning. In terms of SNS use, self-disclosure only had a significant but negative association with learning satisfaction, indicating that those who spend more time for self-disclosure on SNS are less likely to perceive benefits from learning engagement online. The adjusted R^2 was .240.

	B	β	*t*
(Constant)	1.588		5.369
Gender (Dummy: female)*	.231	.149	2.327
Parent's income	-.001	-.003	-.048
GPA (Dummy: high)	-.071	-.049	-.840
Time spent online	-.017	-.132	-1.771
Time spent on SNS	.013	.094	1.334
Group activities	-.014	-.026	-.333
Information and learning	.040	.073	1.083
Entertainment	.027	.072	1.177
Social communication	.025	.056	.800
Self-disclosure*	-.081	-.173	-2.289
Device literacy*	.170	.194	2.436
Content literacy	.135	.146	1.898
Learning experience**	.251	.215	2.985
Adjusted R^2	.240		
F	6.833		

Tab. 4.: Regression for perceived online learning satisfaction.[4]

Discussion

The high penetration of digital technologies (such as smartphones and personal computers), and diverse engagement in online activities (such as social networking and entertainment), observed in this study clearly shows Indonesian young people to be digitally engaged, as has been observed elsewhere. It is clear that there is strong evidence of an increasing trend in internet use among Indonesian young people although this may in part relate to the sample being taken in the context of young people living in urban or suburban areas.

4 * p < .05, ** < .01

Social media use is positively correlated with learning experiences and has positive outcomes; however, what young people actually do on SNS is important. It is not surprising that there are negative associations between SNS use for less learning-related activities, such as self-disclosure observed in the results of regression. It is worth noting that engagement with SNS can produce positive outcomes in learning, by increasing efficiency in sharing content and ideas and seeking help/support with studying. Research has suggested that SNS, such as Facebook, are potentially useful tools for promoting effective academic practice (Kalpidou, Costin, & Morris 2011; Madge, Meek, Wellens, & Hooley 2009). It has been found that undergraduate students benefit from SNS use in education-related interactions with peers, as it facilitates obtaining peer feedback and engagement with collaborative work while at university (Gray, Vitak, Easton, & Ellison 2013). The findings in this study are in line with existing research and further emphasize the significance for the current generation of undergraduates of social networks developed via SNS.

Social networks are an important source of social support. With the proliferation of online social networks, learning to socialize and maintain social relationships online is becoming a vital part of young people's lives. Digital technology does not merely facilitate online learning but can also play a crucial role in resource sharing by connecting those who need a resource to those who have the resource, in mutually cooperative ways, which ultimately enable users to accumulate resources. This result implies that the culture of sharing that today's young people experience is becoming a crucial part of education. Many activities which are necessary for learning, such as finding relevant information and materials and seeking help/assistance from others, are increasingly technology-mediated, which allows learners to increase their learning efficiency.

This study suggests that digital media literacy is a key factor in education. It has been acknowledged that simply having access is not enough to guarantee effective use of technology even among users (Dobransky & Hargittai 2006; Park, 2012). There has been an emerging trend which includes not only being able to access a social resource through digital technology but also being able to circulate the information and resources shared online. Notably, our regression results show that device literacy contributes to increased online learning satisfaction, indicating the importance of technical skills which are increasingly required to use evolving digital technologies.

Young people are likely to be deemed technically savvy; however, many researchers reveal that university students in particular vary widely in their digital use and competency (Kennedy, Judd, Dalgarno, & Waycott 2010; Eynon & Malmberg 2011). Therefore, providing technical support and assistance is critical to increasing their efficiency and effectiveness in learning though digital technology. Observed barriers to use of the internet for learning in this study additionally confirm the need for support, with almost half of the respondents (47.7%) reporting that lack of technical support from the university is a barrier to use of the internet.

More importantly, merely providing technical support, such as computer skills, may not be adequate to meet the emerging digital capability (Park, 2017). It may be necessary to educate young people about how to integrate other social skills, such as interpersonal communication and ethics. Park (2012) has conceptualized the dimensions of digital media literacy, adding the 'create' dimension to device and content literacy (see Park 2012). This creative dimension to digital literacy refers to the skill to manipulate digital technology to make, create, and express ideas and opinions and engage socially. This study puts flesh onto the bones of the 'creative' dimension by showing the significance of digital literacy among university students, particularly with regard to learning.

Above all, this study highlights the significance of the different dimensions of digital literacy, which should be equally considered when it comes to the development of digital literacy. Adopting Park's (2012) dual-layered approach to digital media literacy, we distinguished the *content* from the *device*. Our result shows those who are digitally savvy and equipped with device literacy do not always have high information/content literacy, and those equipped with high information literacy may not be able to use the technology effectively. Digital literacy is closely associated with the extent of use in terms of both depth and breadth (Ferro, Helbig & Gil-Garcia 2011). In particular, Ferro, et al. (2011) suggest that technical skills acquisition is crucial to being able to engage in more activities online, which is consistent with the findings in this study. It may be challenging for users to comprehend the different forms of software and applications that must be installed to access digital content and services, and then further upgraded to retain usage. With rapid improvements in technology, the internet is becoming faster and more complex, and thus in many instances requires costly necessary upgrades. This development requires users to keep up with various applications and devices (Newman & Gurstein 2016). As a result, the basic level of digital engagement is much higher than it was a short time ago (Helsper 2008) and technical skills acquisition is becoming crucial to being able to perform more activities online (Ferro, et al. 2011).

It is worth mentioning that the way to understand the value of technology in education, in particular SNS use, needs to move beyond seeing it 'as a tool for learning' and to recognize its value as a medium which enables learners to seek and share both tangible and intangible resources, such as materials, information, and human and emotional support. In particular, more attention needs to be paid to the culture of sharing among young people through which resources and information are generated and developed (Lee, Park, Na, & Kim 2016), as inequalities in being able to participate in such sharing practices might impact on educational achievement and the development of social resources. This emerging digital gap in education should be considered equally significant to gaps in technical skills and learning opportunities.

In this regard, this study may provide a more nuanced understanding of the digital divide study, considering issues at both the macro and micro levels. Indonesia, as a whole, is still digitally underdeveloped but is becoming one of the world's fastest-growing digital markets; mainly as the result of its large youth population. As shown in this study, Indonesian young people, especially university students, are digitally connected and engaged with a range of activities online. On the individual level, however, there are different experiences and perceptions of technology, such as learning. Therefore, the Indonesian government needs to pay attention to developing the country through the use of technology, not only by improving the access infrastructures but also by better understanding the emerging groups as well as offering training for them.

In conclusion, three major findings can be drawn from this study. First, Indonesian young people are digitally engaged, as observed elsewhere. Current university students use SNS for a range of activities, of which information seeking and learning are the most popular. Second, digital media literacy is key to increasing learning satisfaction; however, device literacy is still required to be able to harness technology for learning as it is constantly evolving. Third, the culture of sharing is an emerging practice that is becoming routinized among young people, which also influences how young people in this digital era learn and obtain knowledge and information. Taken together, these findings provide further impetus to move beyond debates about technology in education to seeking a more sophisticated understanding of this millennial sharing generation. In terms of technology in education, broader perspectives on learning via technology are required to improve this generation's education. Although the findings in this study are informative, our research method does have a limitation. This study was conducted in a university in Indonesia using a convenient sampling method. Although participants were randomly recruited on the campus, results may not adequately represent Indonesian young people, so generalizations from the results of this study should be made cautiously.

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Digital Media Literacy of Children with Parents Working Abroad

Case Study of the Romanian Northeastern Area

Viviana Huţuleac and Delia Cristina Balaban

Abstract

Romania is one of the countries in the European Union that has been confronted with a large intra-EU migration of population towards countries such as Italy, Spain, France, Germany, and the United Kingdom in the last two decades. Thus, one or both parents work abroad for several months or sometimes for years and their children are left in the care of their grandparents or other close relatives. This phenomenon has large implications for the Romanian society and certain regions, such as the Northeastern, are dealing with the consequences. The paper addresses the question of media literacy of the children whose parents are working abroad and adds to the current discussions, in particular to a discourse that does not position children of migrant workers as automatically disadvantaged. As a foundation for our study we used a skills-based model of media literacy (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2012; Dewe and Sander 1996; Groeben 2002; Livingstone 2004). We conducted thirty in-depth interviews with children and adolescents from the Northeastern region of Romania between January and April 2018. Romanian children and adolescents with parents working abroad live in a favourable economic context and have better access to communication technology than their peers. The migration situation influences the motivational dimension of media skills but probably has little influence on legal media skills. Social media offers them technical support in order to see their parents, to share their problems and worries. It is often used for educational purposes in this particular situation.

Digitale Medienkompetenzen von Kindern, deren Eltern im Ausland arbeiten. Eine Fallstudie aus Rumänien

Zusammenfassung

Rumänien, als eines der jüngsten Mitglieder der Europäischen Union, wurde in den letzten zwanzig Jahren mit einer hohen Migration konfrontiert. Es handelte sich um Arbeitsmigration aus Rumänien in Richtung Italien, Frankreich, Deutschland und Grossbritannien. Bei einigen Familien handelt es sich nicht nur um ein Elternteil, sondern oftmals um beide

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Elternteile, die für einige Monate oder sogar Jahre ihre Kinder bei Grosseltern oder Verwandten lassen und ins Ausland gehen. Dieses Phänomen prägt die rumänische Gesellschaft, insbesondere den Nordosten Rumäniens. Unsere Studie widmet sich der digitalen Medienkompetenz der Kinder, deren Eltern im Ausland arbeiten. Wir möchten dabei die Idee betonen, dass diese Kinder und Jugendliche nicht benachteiligt sind. Die theoretische Grundlage bietet das Medienkompetenz-Modell (Riesmeyer, Pfaff-Rüdiger, und Kümpel 2012; Dewe und Sander 1996; Groeben 2002; Livingstone 2004). Leitfadeninterviews wurden im Zeitraum zwischen Januar und April 2018 mit Kindern und Jugendlichen aus der Region Nordosten Rumänien durchgeführt. Sie haben eine bessere ökonomische Situation und einen besseren Zugang zu Kommunikationstechnologien als deren Freunde. Der Migrationshintergrund beeinflusst die motivationalen Fähigkeiten und hat wenig Einfluss auf die rechtliche Medienkompetenz. Soziale Netzwerk-Plattformen bieten technische Unterstützung, um Probleme und Sorgen mit den Eltern zu teilen.

Introduction

Romania is one of the countries in the European Union (EU) that has been confronted with a large intra-EU migration of population towards countries such as Italy, Spain, France, Germany and the United Kingdom over the last two decades. In search of a better-paid place of employment, a significant number of parents have left their children at home with their relatives. The intra-European migration movements towards Western countries started even before 2007 when Romania joined the European Union and significantly increased after the accession. Even between 2015 and 2018 the number of children with parents working abroad increased. The official Romanian data reveals that at the end of 2017 about 95.000 children were registered to have at least one parent working abroad and about 18,000 children had both parents working abroad. There are significant differences between the figures published by the Romanian Child Protective Services and those of the Ministry of Foreign Affairs, with the latter reporting over 150.000 children that had at least one parent working abroad at the beginning of 2018 (Digi24 2017; presidency.ro 2018). The differences in the data provided by the Romanian Child Protective Services (DGASPC) and the Romanian Ministry of Foreign Affairs occur due to the fact that not every parent working abroad notifies the authorities about the situation of their child or children, even if the Romanian law requires it.

The Northeastern part of Romania, one of the poorest regions in the EU, is especially affected by the consequences of this work migration phenomenon, which has raised concerns at the level of the local and national authorities. The official data from the Romanian Child Protective Services (DGASPC) mentioned 31.391 children from the Northeastern Region with at least one parent who registered as working abroad at the beginning of 2018 (presidency.ro 2018).

Suceava is the second largest county in Romania but occupies the first position regarding the number of people that are working abroad. There are 140,000 people that have left the country in order to find a better job. Thus 20% of the total population is working outside Romania. According to the latest statistics of Child Protective Services (DGASPC) Suceava, at the end of the first trimester of 2017, there were 9.031 children from 6430 families in Suceava County with parents working abroad (DGSVA 2018). Some of the parents leave their homes to work abroad for six months each year; others do so for as many as several years. In fortunate cases, they sometimes return home for Easter or Christmas and during the summer vacation. There are also sadder cases of children not seeing their parents face to face for years. From the perspective of the economy in the region, the positive effects of this phenomenon have been observed. There is also an impact on other dimensions of the social and cultural life in these communities (Sandu 2010).

There is a body of literature on Romanian migrants working in other EU countries (Sandu 2010; 2016), but there are no publications that deal with the children left at home and their media competences, even if media plays an important role in the child-parent relationship under these circumstances. Because of the family conditions, the way they use digital media and especially their media literacy is an interesting topic to explore. On the one hand, we assume that there is an additional motivation in gaining media competencies for both children and parents, but on the other hand, parents are less involved in the media activities of their children. They are not physically present in order to properly supervise their children.

Within the media menu, the Internet has developed into an important source of information and communication in the last decade, sometimes even to such an extent that it has become indispensable for certain audiences. It has also become one of the main ways to spend free time especially for children and adolescents (Livingstone and Bulger 2014; Livingstone and Third 2017). Romanian children and teenagers are no exception to the global trend when it comes to their preferences for using the Internet and social media. Among the social media applications, Facebook is highly used in Romania: in December 2017, there were 9.6 million Facebook users in Romania (49% of the population and 66.7% of the Internet users). YouTube has 858,630 users with visible activity and Instagram is in third place with 581.849 users. Twitter is not so popular in Romania, with just 377.783 users (zelist.ro 2018).

The particular situation of the Internet and social media literacy of children and adolescents left in the care of their grandparents or close relatives, with one or both parents working abroad is the subject of the present research. Daily communication via emails, calls or social media between children and adolescents on the one hand and their parents who work abroad, on the other hand, is actually recommended by the Romanian authorities. It is one of the ten recommendations that the Child Protective Service Suceava formulated in a paper dedicated to the parents working

abroad. Mediated communication with their children is advised. The parents are urged to have a close dialogue with the educators in the school in order to see if something is wrong with their children. However, no word is mentioned about media education. The skills required for using Internet-based tools of communication are taken for granted. A closer look at the way media competencies are gained in this particular situation can be a challenging, but useful task for future media education projects that can be developed in the region.

Media Literacy in a Changing Media Environment

The theoretical background of our research should start with a definition of media literacy. In the changing media context, how is media literacy defined nowadays? What are the particularities of digital media literacy? Are there any suitable models for the digital media literacy of children? These are some of the questions that we posed with respect to the theoretical framework of the present research. Media literacy is often defined as «the ability to access, analyze, evaluate and create media in a variety of forms» (Christ and Potter 1998, 7). Media access creates a link between the social framework and the technological skills and opportunities to go online. Media literacy focuses on knowledge, culture, and participation through media. Media-literate users have the technological skills to create and share content within their communities (Livingstone 2004). In a diversified media environment where the role of social media in the daily media diet of different types of audiences has increased, the particularities of the digital media literacy must be addressed in the sense that «the priority now is to develop a subtle and detailed account of how people understand, trust and critically evaluate information and communication contents delivered on new platforms» (Livingstone and van der Graaf 2010, 1).

Potter (2004a; 2004b) synthesizes the major ideas from different media literacy approaches. At first, media literacy was seen as the ability to recognize different symbols in visual media and on the printed page, while also being concerned with the construction of meaning by humans that are exposed to media messages; the second idea is that literacy requires different skills, such as critical thinking, analysis or evaluation; third, literacy requires knowledge, which is then used to evaluate the accuracy of media messages; fourth, the goal of media literacy is to improve individuals in their media knowledge and the fifth idea is that media literacy must deal with values (Potter and Christ 2007). Thus, the literature on media literacy focuses not only on conceptual concerns, definitions, models and importance but also on the implementation of media education through existing institutions, such as family and school in case of children (Potter 2010). Other scholars emphasized the particularities of audio-visual media literacy, which has some similarities with Internet media literacy. In the last decade, the research on media literacy has focused on new

literacies based on the technological, cultural and historical specificity of particular media such as computer literacy, cyber-literacy, Internet literacy, network literacy, digital literacy or information-literacy (Livingstone 2004).

Some approaches distinguish between media literacies that emphasize tool use, such as technology literacy, computer literacy, and network literacy and those that are essentially literacies of representation, such as information literacy, visual literacy and media literacy. Other voices highlight the idea of a pan-media literacy (Hobbs and Frost 2003). Media literacy does not only mean the four practices: to access, to analyze, to evaluate and to create media messages that support each other as part of a «nonlinear, dynamic learning process» (Livingstone 2004), but it can also have an empowerment function (Hobbs 2011). For some scholars, media literacy represents «(1) the symbolic and material representation of knowledge, culture, and values; (2) the diffusion of interpretative skills and abilities across a (stratified) population; and (3) the institutional, and especially the state, management of the power that access to and skilled use of knowledge brings to those who are literate» (Livingstone and van der Graaf 2010).

The growing use of the Internet and of social media, the accessibility of the mobile technology has made it easier for everyone not only to access the Internet and social media but also to become a media content creator. Therefore, the analysis and evaluation of media content have become a very important dimension of media literacy. It involves the critical abilities to understand knowledge and to relate it to one's own practices (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2012). Digital users have to be able to see relevant cultural traditions and values, have interpretative skills, address questions of media agency, media categories, media languages, media audiences, and media representations. Evaluation is related to the contextual and critical knowledge, taking into consideration the changing of criteria of quality, authority, and standards (Livingstone 2004).

This research focuses on the digital media literacy of the children from the area affected by the above-described phenomenon. This particular case is an opportunity to analyze the inter-generational digital media skills transfer (Ponte and Aroldi 2013; Abad 2014; Sanchez, Kaplan, and Bradley 2015). The pedagogic argument that people learn more about media by using it has become more relevant in the digital context. There are benefits to learning how to use and create digital content in terms of cultural expression and civic participation.

The theoretical background of our research is a skills-based model of media literacy within the framework of the self-determination theory that includes cognitive, evaluative, emotional and social skills. According to the self-determination theory, media literacy is related to the successful fulfillment of needs by using the media (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2012). The communication with one or both parents working abroad is in our particular case a need that has to be fulfilled by

using the Internet and social media. The model was developed in the context of the Internet use of German children and adolescents. It differentiates between three dimensions of media literacy: expertise (media knowledge and awareness of mediality), self-competence (evaluative skills, motivational skills, emotional skills, creative skills) and social competence (participatory skills, communicative skills, educational skills, moral skills). The four elements of Potter's media definition are to some extent integrated into the model. In addition, we consider that the dimension of accessibility should be integrated for the purpose of our research.

One of the core issues of media literacy nowadays is the gap between the media skills of children on the one hand and those of their parents on the other hand (Livingstone and Helsper 2008; 2012). Regarding these dimensions, we have taken a closer look at the interaction between children/adolescents on the one hand and caregivers and parents working abroad on the other hand in order to analyze the inter-generational transfer of skills.

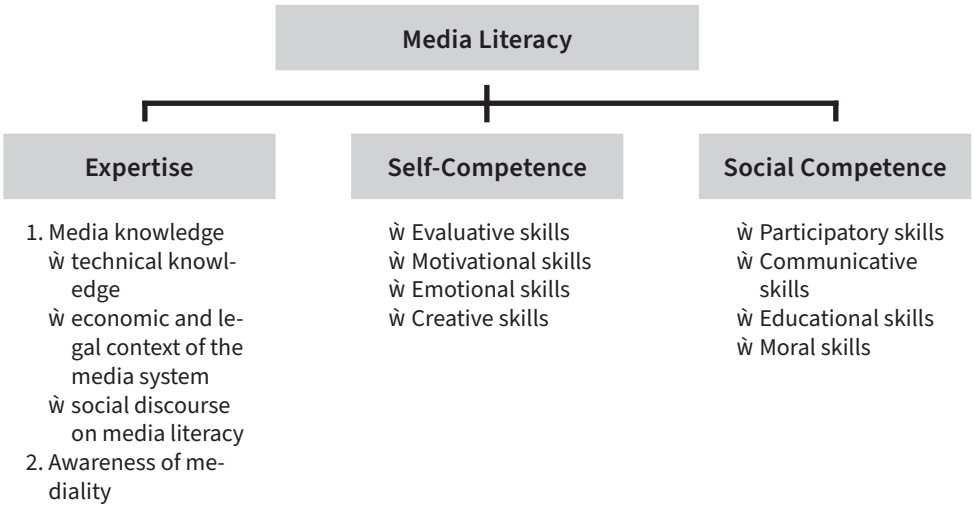

Fig. 1.: Media literacy model (following Dewe and Sander 1996; Groeben 2002; Livingstone 2004; Pfaff-Rüdiger, Riesmeyer and Kümpel 2012).

Media literacy in the migration context

Previous literature on media literacy highlighted the role of parents in media education. Family is the first place where children come in contact with media. Among other relevant actors such as schools, social and civic institutions, parents help children in developing media literacy (DeGaetano and Bander 1996; Potter 2016). For nowadays children who spend a lot of time using media, parental media mediation as a part of family education process become more relevant (Valkenburg et al. 2013; An and Lee 2010). The role of parents in media education consists not only in setting boundaries

but also in showing interest in their children media use, delivering inspiring practice. Being good role models and helping the children to develop a critical understanding of media content are parts of appropriate media education. For media educational purposes parents have to take a closer look at the risk and opportunities of the media use of their children (Pereira 2015).

For parents working abroad and not being physically close to their children, those tasks can be hard to accomplish. Children will not have the possibility to watch their parents using media on a daily basis; parents will not have the possibility to discuss with them about their media interests. The development of the critical thinking component (Adams and Hamm 2001; Potter 2010) that is considered to be one of the most relevant dimensions of media literacy will suffer. Other members of the families such as siblings, grandparents, or other caregivers will be involved in media education of the children. Lack of time, lack of media knowledge, or even lack of authority are the common obstacles when it comes to media literacy provided under these circumstances. Modern information and communication technologies are not solving the problems of separation within families but can contribute to a new experience of migration and parenting (Madianou and Miller 2012).

Method

Our research objective was to explore the media literacy of the children with one or both parents working abroad, using the skills-based model (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2012). We also took a closer look at the inter-generational interactions between children on the one hand and grandparents (in this case, caregivers) on the other hand with respect to the digital skills and norms.

The research method consisted of in-depth interviews with 30 children in the time frame January-April 2018. The interviews were conducted face to face at the children's homes or at school with the consent of their tutors. The children and teenagers were aged between 10 and 18 years old; we spoke to 16 girls and 14 boys. Our sample consisted of 14 children aged between 10 and 15, 16 children aged between 15 and 18. 5 children had both of their parents working abroad. Out of the remaining 25, 15 children had their father working in another country and 10 children their mother. Taking into consideration that children and adolescents were the interviewees, we adapted our instruments to the particularity of this group (Meyen et al. 2011; Paus-Hasebrink 2005; Keuneke 2005). The interviews lasted between 35-40 minutes and the children were interviewed in pairs, while the adolescents were interviewed one at a time.

The interview guide included questions on how they used social media in the interaction with their parents working abroad, based on the theoretical framework of the media skills model (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2012) we relied on.

We asked them how and to what purpose they used social media in order to evaluate the technical media knowledge of the children and of their parents and caregivers (according to the children's perspective). We paid special attention to the knowledge transfer issues between children and adolescents on the one hand and adults on the other hand. We asked if the children were aware of the risk they faced on social media, on the norms and moral aspects of using it. We asked them if they talked about school and daily problems with their parents through social media. We talked about their motivation and their parents' motivation to use social media in this particular situation. For data analysis we followed a theory-driven approach, using theoretical coding based on the media skills model that we applied.

Throughout the entire process, we paid attention to the ethical aspects of this type of research, which involves working with children and adolescents. We informed the adults (parent or other caregivers) about the purpose of the present research and the interview guide. Thus, we obtained informed consent for the participation of the children and adolescents. We also informed the participants that the aim of our study was to explore the way they use social media. Their participation in the present study was voluntary.

Media Skills of the Romanian Children with Parents Working Abroad

All the children and adolescents that we interviewed had Internet access at home or on their mobile phones and tablets. Even if their homes are situated in one of the economically weakest regions of the European Union, Internet access is not an issue. The majority of the children and adolescents had smartphones, with the only exceptions of the youngest ones (aged 10-12), who only had a simple mobile phone with a prepaid card. But even the ones in this particular situation reported having internet access on their tablets or laptops at home and being capable of using these devices: «I have learned to use the Internet by myself, nobody showed me how to do it», said Bogdan, a 10-year-old boy. The majority of adolescents use Facebook and Facebook Messenger, Instagram, WhatsApp, Snapchat in order to communicate with their peers, or even to see what their favorite celebrities are doing online. Facebook Messenger and WhatsApp are preferred in communication with their parents who are working abroad. The conversations are on a daily basis, sometimes several times a day. Usually, the parent that works abroad initiates the communication after finishing work. Sometimes, when adolescents are faced with problems or need some advice or approval, they are the ones who call their parents. Video calls are preferred. In the case of younger children, parents sometimes call them on their phones, but usually, they communicate in the evening via Facebook Messenger or WhatsApp on their grandmothers' smartphones or laptops. Generally, mobile communication is preferred over the use of the Internet on laptops. Having relatives abroad is a good

motivation to learn how to use social media: «my grandmother asked me to teach her to use Facebook because her girls are working in Ireland and she needs to communicate with them» (Camelia, 16, f). Applications such as Skype or Viber were also mentioned in some cases, but Facebook and WhatsApp have replaced them in terms of the frequency of use over the last two years. Several adolescents that have a long experience of communication with their parents abroad emphasized the advantage of new technologies compared to phone calls, which had been the only option in the past. Smartphones allow them to have access to communication tools, through which they not only speak with their parents but also see them. They have developed this notion of being able to reach their parents any time they need them and the other way around.

The Internet and especially social media are the most important items in the media diet of the adolescents we talked to. Sometimes they watch TV, but they do not listen to the radio or read books apart from the ones that are compulsory reading for school. They enjoy listening to music via YouTube or even Spotify, watching series online or playing online games. The children we talked to were much more interested in TV shows and they mentioned watching cartoons as one of their favorite media-related activities.

Expertise

Technical Media Knowledge

Using the media taught our interviewees about digital media. Technical competences in the field of social media use, smartphones and applications were never a subject during classes at school, nor did the parents or grandparents introduce the children and adolescents to this type of knowledge. In some cases, they learned from their siblings, cousins or other older children. They know many things about the applications they use and what these can offer them in terms of advantages and disadvantages for the communication process with their parents. The adolescents and some children use smartphones and the related applications that they would need to communicate with their peers: Facebook, Instagram, WhatsApp, Snapchat, Hangouts, etc. Some of them use this type of media to communicate with their parent(s) who is (are) in another country, especially Facebook and WhatsApp, as we mentioned above.

The children are aware that they are more familiar with this type of technology than their parents. They even introduced their parents to this type of media that facilitates communication: «Two years ago my elder brother made a Facebook account for my father and taught him how to use it (the father works in Germany) and then I made one for my mother and we both taught her how to use it. This is how

we can communicate more easily (using video calls... we did the same with their smartphones» (Valentina, f, 18). Parents and tutors are the ones who learn from their children and teenagers when it comes to digital media technology: «I created my Facebook page, my brother's and my sister's and then I helped my parents to create one» (Teodora, f, 17). Alex, an 11-year-old boy said: «my sister is the one that knows how to use Facebook Messenger better. She made one account for my grandma, too. Sometimes, grandma asks her for help, too.» A sort of pride was expressed in relation to the technical competencies that they have and to the fact that they can help their parents and grandparents to get familiar with the technology. When it comes to the use of media technology, this type of know-how transfer from the younger to the older generation is a common practice not necessarily related to the migration situation. The motivation to do this is related to migration in these particular cases: «grandmother wanted to use Facebook in order to communicate with her daughter, my mother and with other relatives that are working abroad» (Alex, m, 11). Especially the adolescents' digital skills influence their parents' and caregivers' digital skills too.

Legal and Economic Context

Young users are not aware of the legal framework of the Internet and social media usage. They did not talk about this subject in school or with their parents or tutors. None of them were even curious to read the terms of use or the privacy settings of any application they had installed. Even adolescents automatically agreed to the terms and conditions of use. They only checked if the applications were free and tried to avoid paid ones, usually by uninstalling them. Illegal downloads, copying homework from the Internet are not problematic issues at all for the children and adolescents we interviewed. With respect to the legal context of digital media usage, the children and the adolescents we talked to pointed out that their parents working abroad or their grandparents never expressed any concern. This aspect gave the children a false sense of freedom. They are not aware of the large economic and legal frame of the use of social media. We cannot find a connection between the lack of legal knowledge about media of children and adolescents and the fact that their parents work abroad. Certainly, the interaction between children and adolescents and their parents mostly takes place over social media and from the point of view of the duration, it is not as intensive as the interaction of a family living together. A lack of basic legal knowledge about the use of the Internet is a common situation for many parents or grandparents as previous research suggested (Livingstone and Helsper 2008).

Gadgets such as smartphones and tablets are favorite gifts for the children and adolescents we talked to. They usually received them for birthdays, for Christmas or during the summer vacation when their parents came home to visit them. The migration background provides them with a superior economic status compared to their peers in school and they are aware of it.

Social Discourse about Risks and Norms

Some of the interviewees seemed to be aware, to varying degrees, of the risks connected to the use of digital media. For example, the fact that some people might change their identity is a phenomenon that some of them have already experienced or applied, but, «just for fun» (Claudiu, m, 17). Cyberbullying is a phenomenon that they are aware of and condemn. They are aware that this is not a practice that they should apply: «It is not ok when a friend commented rudely on one of my classmate's photos » (Denisa, f, 15).

Regarding the cyber-bullying phenomenon, there were some discussions during classes, led by one of their informatics teachers. Also, concerning data security, some of them apply the knowledge they acquired, but only when it comes to laptops or home computers, not when it comes to smartphones. No child or adolescent we talked to reported to have suffered from this type of issues, so they never talked to their parents about bullying. Cyberbullying cases related to the migration situations were not reported during our interviews. They never talked with their parents or grandparents about social norms on the Internet and in social media or about online threats.

Some of the children and adolescents mentioned the fact the parent at home or the grandmothers took their smartphone away for one or even several days when they misbehaved, as a form of punishment. It was a difficult time for them since smartphones play a very important role in their daily life taking into consideration a large amount of time they use them (between 2 and 5 hours a day based on their self-reported usage behavior). Nevertheless, the smartphone deprivation did not apply to the daily communication with the parent working abroad, for which the smartphone of the other parent or of the caregiver was used.

Awareness of Mediality

The children and adolescents we interviewed consider the Internet to be primarily a space for socializing, communicating, playing and even finding answers to different problems or even for homework. Some of them see it as an indispensable element of their daily lives, spending almost all their free time in front of their electronic devices: «I spend more than 5 hours a day from Monday to Friday and during weekends, almost the whole day» (Lenuta, f, 17). Some of them interact in groups with their close friends: «I like to update my friends about my activities by posting daily snaps on Snapchat.» (Mihaela, f, 14).

Awareness of mediality is strongly linked to evaluative and moral skills. The children often do not realize that their online actions may have consequences in real life. The Internet is seen as an important resource for learning: «I use the Internet in order to learn the lessons of life», was the answer of the 10-year-old Bogdan when he was asked about the reasons for using this type of media.

Self-competence

Evaluative Skills

Self-competence is related to the need for autonomy and identity (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2012). Almost all the interviewed children are aware that they reveal personal information about themselves when using the Internet or social media. They have some privacy settings activated on their Facebook, Instagram or Snapchat accounts but do not seem to care much about sharing private information. When they download and install the applications they do not pay much attention to the privacy settings. But, in some cases, especially the adolescents have a strategy for following and unfollowing people on the Internet, or even blocking colleagues or friends for behavior that they consider to be inappropriate. Apparently, they do not see many risks in using social media applications: «Nothing bad has ever happened to me since I started using these apps (Facebook, Instagram, Snapchat, WhatsApp, Viber)» (Andrei, m, 15). Others prefer Snapchat: «I share what I want people to know about me. I mainly use Snapchat especially for this reason: everything disappears after my friends see it». (Alex, m, 17). No parents or tutors are active on Instagram or Snapchat, just the older siblings in some cases. The former only have accounts on Facebook and WhatsApp.

Motivational Skills

The internet seems to fulfill the majority of young people's needs in terms of interaction and entertainment:, «I can find anything I want: friends, books, movies, games, news» (Alex, m, 13) They abandon their physical activities or hobbies in favor of spending more time online, sometimes discovering new hobbies, such as online gaming. Prioritizing activities is often influenced by parents or, in their absence, by caregivers. Following TV stars or influencers online is also one of the reasons to use social media, especially Instagram. Sometimes they do this for fun, only for entertainment purposes or simply because they are curious to see what other people post. Influencers and TV stars tend to be role models for them.

Communication with their parents is not the main reason they use social media, but it proves to be a relevant component. The young people are the ones that encouraged their parents to use social media applications: «before, we only used the

phone (audio calls). Now, when we have so many new social media applications, why shouldn't we use them? I made them both Facebook accounts and now it's easier» (Alex, m, 17). Media and social media applications play a very important role in our interviewees' lives, as far as communicating with their parents is concerned: «I am happy that now there are so many applications that we can use to communicate. We mostly use video calls now, instead of only audio calls, like we used to. We used Skype, but now it has some technical problems, so we use Facebook Messenger instead» (Ionela, f, 17). The children's and adolescents' perception of their parent's motivation to use the technology is mainly to communicate with them: «definitely, my father only learned to use Facebook in order to communicate with me» (Ana Maria, f, 18).

Emotional Skills

The emotional state of these children and adolescents may often be influenced by their activity on social media: «I am part of several groups on Facebook: sometimes we laugh, sometimes we have fights about different subjects and then I get angry» (Ionut, m, 14). This is why some of them, as a protective measure, prefer to stay offline: «when my friends or classmates start to have a fight on our Messenger group, I just don't join them and stay offline for a few hours until I stop receiving notifications… this being a sign that it is over» (Alina, f, 16). The Internet can provide a way to escape for our interviewees: «I tend to play online with my friends when I am tired or sick. I could play the whole day and forget about my problems» (Marius, m, 17). The Internet and social media have the function of a mood management tool and to the ability to deal with emotions online (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2012). This is the reason why sometimes they search for a funny video on YouTube.

Creative skills

The children and adolescents we talked to consider themselves to be creative in the digital media. Most of them were able to open and manage their own accounts on Facebook, Instagram or Snapchat. In some cases, they even started a WhatsApp group with more relatives that work abroad in order to see photos or videos. Some of them also created a YouTube account but only for the purposes of subscribing to some channels for access to unlimited content. They even helped their parents or caregivers to open their own accounts on social media. One of the girls started a vlog, influenced by the public figures she follows on YouTube and by her friends: «I created my own vlog after my friends encouraged me. I follow some vloggers and I thought it could be interesting to have my own vlog» (Adina, f, 16). The majority confessed that they have the knowledge to create content, which is predominantly related to creating profiles on social networking sites and on smartphone applications. Taking

pictures with their smartphones, improving them with the help of apps or filters, or hashtags on social media is a common activity for them. Some of the results of these activities are shared with their parents abroad via WhatsApp, which they consider to be the best option from the point of view of image quality.

Social Competence

Participatory Skills

Missing the parents who are not physically present in their daily lives makes young people see the need for communicating with them as a priority. They started using almost only different social media apps instead of the classical phone calls: «I like that Facebook Messenger offers us the opportunity of video calls. We can see our parents and they can see us and our grandma as well. Our grandmother is taking care of us» (Teodora, f, 17).

They use several applications in order to communicate with their parents, such as Facebook Messenger, WhatsApp, Viber, Hangouts, Skype. Their availability online is almost permanent, the Internet no longer being an expensive service: «I communicate with my father (who works in Germany) anytime I need to talk with him or when he needs to. If something happens, I call him immediately. We prefer WhatsApp video calls» (Sanziana, f, 17). Usually, it is the parents who buy them smartphones and other gadgets, sometimes also in order to substitute their presence.

Communicative Skills

As stated before, in some cases, parents are the persons they approach with the aid of smartphones when it comes to daily life problems. As we mentioned before children and adolescents call or text their parents when advice or approval for important issues is needed: «my parents play the most important role in my life. In order to have a closer relationship to them even if they both work abroad, I talk to them about my personal life. The simple act of hearing them does wonders for me» (Teodora, f, 17). There are also other not so fortunate cases in which the parent working abroad is not the first person they turn to when it comes to solving problems. One of our interviewees' explanation was the distance between them: «I don't call my father (who is in Greece) for every minor problem that I believe I can solve on my own.» (Alexandros, m, 17).

Educational Skills

The children and adolescents we talked to have developed media skills and some of them even share their knowledge with their peers, with their parents and caregivers. Adolescents consider themselves to have a high level of mastery when showing

others how to use the Internet and different applications. The reported problem is that they usually learn from their own mistakes, as they do not have specialized staff around, who could show them what they did wrong. They even use media for educational purposes, some of them using several websites and applications: «I and my brothers… we use Brainly for homework. It's free and easy» (Mihaela, f, 14). Even Wikipedia is mentioned to be an important tool for education even if it is not a reliable one. But this is something that the adolescents and children are not aware of. They had not discussed this issue in school. They were also asked about how they evaluate the quality of information they find online and use for their homework. They mentioned Wikipedia as a reliable source for this, as well as the opinions of other colleagues. This is certainly not the appropriate way of doing research for homework.

Children and especially adolescents played an important role in educating their parents or caregivers about the Internet and social media use from the technological perspective, but knowledge about a larger context is missing on both sides. The interaction with their parents via social media apps contributed to a closer bond. Video calls allowed both parents and children to express and evaluate their emotions. The parents can identify problematic situations their children are facing more easily and take action when necessary.

Moral Skills

The interviewees are aware of the moral dimension when it comes to digital media use. They talked about the immoral behavior of their friends: «I have a friend that has a fake Facebook account, but I think it's useless to have one and is not OK» (Bogdan, m, 16). They did not mention discussions with their parents or grandparents about morality on digital media. Digital media literacy means not only skills but also «an interpretative relationship with a complex, symbolically-encoded, technologically mediated text» (Livingstone 2004). This is a dimension of media literacy that is underdeveloped. Children and adolescents do not discuss the moral aspects of the Internet and social media use with their parents or with their caregivers.

Conclusions

Summarizing our findings regarding our research question, we can emphasize that young people's digital skills influence their parents' and caregivers', too. The information transfer usually goes from the young generation to the older generation. Learning is a «movement by movement» process and it is not a systematic one» (Johnson-Eilola 1998, 195). This is the usual learning pattern that is so frequent in postmodern society. The evolution of technology allows for better communication between the children and adolescents and their parents working abroad. The advantage of today's communication using audio-video calls instead of the classic phone calls was

mentioned several times during our interviews. It contributes to educational purposes in the sense that even if the parents are far away, they can still identify the problems of their children and adolescents. Bonding is also facilitated.

Facebook and WhatsApp are the top applications used by children and adolescents in order to communicate with their parents who work abroad. Technical knowledge is the dimension of media literacy that is usually transferred from children and adolescents to their parents and grandparents. Due to this particular situation, even grandparents are motivated to be active online and young people are supportive of this. Technical knowledge is much more developed than knowledge about the legal or economic context when it comes to media literacy of both children and adolescents on the one hand and parents or caregivers on the other hand. The migration situation influences the motivation dimension of media skills but probably has little influence on the legal media skills of young people.

Having one or both parents working abroad plays an important role with respect to the media literacy of their children at least when it comes to the acquisition of communication technology, but also for the motivation behind using it. The parents are trying to substitute the lack of physical presence in their children's lives by buying them expensive gifts. Smartphones and other gadgets are among their favorite presents. They are also seen as status symbols. As previous research on intra-EU children of migrants underlined (Sandu 2010), the majority of the boys and girls we interviewed have a superior material status compared to many of their colleagues. In our case, children of migrant parents are not disadvantaged. They have additional motivation to use media in order to communicate with their parents. Social media offers them technical support in order to see their parents, to share their problems and worries with them. In this particular situation, social media communication is used for educational purposes as well. Children of migrants prove not to be disadvantaged, their life situation contributing to the development of their media skills.

Children and adolescents play a very important role in the communication process between their parents and their grandparents at home. The first group mainly facilitates the use of technology (that is purchased for them by their parents working abroad), but parents or caregivers are not able to provide substantial support when it comes to legal, educational or moral skills. Our research has once again proved that media literacy of children and adolescents is developed even in the absence of explicit attempts to encourage and promote it (Buckingham 2005).

Coming back to the media skills model (Riesmeyer, Pfaff-Rüdiger, and Kümpel 2012), all the fields that define media competencies are influenced to a certain extent by the particular situation of having one or both parents working abroad. Children and adolescents tend to have high expertise in the use of digital media and especially of several social media apps, as they are strongly motivated to use them. This particular situation has a positive effect on developing digital media skills for their

grandparents and other caregivers who are motivated to communicate with their relatives abroad, while also being encouraged and supported by the children and adolescents that they are taking care of. Having one or both parents working abroad and not being able to see them for a long time is a strong additional motivation to use social media. But this is not the only motivation. There are also drawbacks to the digitally mediated relation between children, adolescents and parents that work abroad, such as using social media as a substitute for the parent that is far away.

Based on a qualitative methodology, the present research has its limits and the results cannot be generalized, nor causal relations can be established. Our research reveals only the children's and adolescents' perspective. Another limit of our study lies in the research design that includes exclusively children with parents working abroad. A control group of children whose parents do not work abroad would contribute to a comparative perspective. Our intention was to explore the relationship between children and their grandparents with respect to the media skills transfer to a greater extent, but not all the dimensions of the model that we applied reflected that relationship. Conducting interviews with parents that work abroad, with educators or policymakers can help us to draw a bigger picture of the phenomenon. This is an issue that is worth addressing in future research.

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Mediating Media Usage in Times of Migration

Family Rules and Media Repertoires of Arab Refugee Children and Teens in Germany

Liane Rothenberger, Ahmed Elmezeny, and Jeffrey Wimmer

Abstract
The use and regulation of mobile media devices of children and adolescents in refugee families is largely unexplored. Our qualitative approach utilizes in-depth guided interviews with parents and children in Arabic speaking refugee families in Germany. All interviewed families have resided in Germany from one to four years. The sample consists of both couples and single parents, while most children are in their final year of kindergarten, in primary school, or secondary school. The study explores the selection and usage of mobile media devices and content in their social context, such as the use of social media platforms and apps at home and for school. Our research highlights changes in mobile media usage after the interviewees' arrival in Germany due to the different socio-cultural environment and a changed media agency. The amount of change greatly depends on the age of the children, for example, the younger they were when arriving in Germany, the less likely they are to use mobile media to stay in touch with their former friends. Additionally, most children and adolescents tend to consume German media content more often than Arabic content. In the rare cases they do consume Arabic media content, it is in the presence of their parents, who state that they do so to bring their children closer to their roots.

Die Vermittlung von Mediennutzung in Zeiten der Migration. Familiäre Vorschriften und Medienrepertoires von arabischen geflüchteten Kindern und Jugendlichen

Zusammenfassung
Die Nutzung und Regulierung mobiler Medien von Kindern und Jugendlichen in Flüchtlingsfamilien ist weitgehend unerforscht. Einem qualitativen Ansatz folgend führten wir Leitfadeninterviews mit Eltern und Kindern in Arabisch bzw. Deutsch. Alle befragten Familien leben seit ein bis vier Jahren in Deutschland. Die Stichprobe besteht aus Paaren und Alleinerziehenden, wobei sich die meisten Kinder im letzten Jahr des Kindergartens, in der Grundschule oder der Sekundarschule befinden. Die Studie untersucht die Auswahl und Verwendung mobiler Mediengeräte, insbesondere Smartphones und Tablets, und deren Inhalte im sozialen Kontext, beispielsweise die Verwendung von Social-Media-Plattformen

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*und Apps zu Hause und für die Schule. Unsere Studie verdeutlicht Veränderungen in der Nutzung mobiler Medien nach der Ankunft der Befragten in Deutschland, was auf das veränderte sozio-kulturelle Umfeld und mediale Handlungsfähigkeiten zurückzuführen ist. Das Ausmass des Wandels hängt stark vom Alter der Kinder ab. Ein Beispiel: Je jünger die Kinder waren, als sie nach Deutschland kamen, desto weniger wahrscheinlich nutzen sie mobile Medien, um mit ihren ehemaligen Freund*innen in Kontakt zu bleiben. Ausserdem konsumieren die meisten Kinder und Jugendlichen häufiger deutschsprachige Medieninhalte als arabische. In den seltenen Fällen der Rezeption arabischer Medieninhalte geschieht dies in Anwesenheit der Eltern, die wiederum angeben, dies zu tun, um den Kindern ihre Wurzeln näher zu bringen.*

Introduction

«Yesterday the motto was: immigrate and cut your roots; today it would be circulate and keep in touch», Diminescu (2008, 568) notes from her studies with migrants. Ten years ago, the tendency to change modes of communication could already be observed. To date, this has matured into the manifold mediation processes, which play a fundamental role in today's migration situation. Fast-communicative networking through technological innovations in media has a considerable influence on the interaction of refugees. Diminescu coined the term «connected migrant» (2008, 568), which leads to the key question: How do media and communication influence the lives of ethnic minorities in new cultures?

In a qualitative study, Díaz Andrade and Doolin (2016, 409) have identified key factors in how media support the social integration of refugees: communicating effectively when participating in an information society, understanding the new host society, being socially connected, and expressing one's own cultural identity. The study of Friedrichs-Liesenkötter and Schmitt (2017, 2) shows prototypically that media and communication play an ambivalent role as agency mediators:

> «they are 'escape agents', make everyday life in a new environment easier, and link young refugees to people involved in civic engagement. Furthermore, they strengthen young refugees' possibilities to articulate themselves and to participate; enhancing media literacy of young people in media-educational projects».

The role media plays in the lives of the diaspora has since then been the subject of extensive research. Immigrants utilize old (television, radio, print) and new (Internet, social) media from both their current and original cultures for a variety of reasons. Studies show that 'ethnic' media usage by individuals from a diaspora contributes heavily to their identity construction, and that the usage of online media to establish connections to similar individuals can recreate (or strengthen) a sense of community

(Rinnawi 2012). However, from the perspective of current digital media change, the question of the role of media in societal integration processes of migrants is more relevant than ever, especially with the rising fears of extensive fragmentation processes (see Jandura et al. 2017 for an overview). Moreover, the media literacy of migrants, especially in how they navigate the digital media world, has been a neglected field in migration research. This is a serious shortcoming because the «self-determined selection of media offerings for the fulfilment of individual and social needs, as well as coping with the associated risks, are in view of the far-reaching mediatization process: a basic requirement for democratic societies» (Paus-Hasebrink and Hasebrink 2018, 6; personal translation).

Effective media literacy skills can act as protection against fake news, populism and other threats in society (e.g. Bulger and Davison 2018). Media literacy can in fact be a prerequisite to deal with media risks such as excessive usage, online bullying or shaming and phishing (e.g. Livingstone 2011). While media and their technologies are constantly changing, so is the social context of media usage, and the co-presence of actors of media socialization (parents, teachers, peers, siblings, etc.); making the establishment and maintaining of this knowledge a life-long task (Hurrelmann and Bauer 2018). A change of the media environment (migrating to another country) might lead to other dispositions towards media and media literacy, which makes refugees ideal candidates to observe changes in media preferences and literacy.

From a societal perspective, migration issues are of great relevance in Germany since it has one of the most culturally diverse populations in the world. There are various diasporas hailing from all over the globe with the largest diaspora being Turkish (1.527.118 individuals), while second and third are the Polish (866.855) and Syrian (698.950) diaspora (Amt für Statistik 2017). The number of Syrian and Arab immigrants will only steadily increase in Germany given the unstable political climate in the Middle East region. Arab culture, while diversified, still shares a lot of similarities (Hopkins and Ibrahim 2006), but is distinct from the German or European culture. This is why it can be assumed that Arab immigrants have possibly divergent media preferences and could also possibly practice distinctive media regulation with their children, based on cultural and religious values that might not be shared by European or other Western cultures (Molnàr 2008, 39f.). In the following study, we analyse how 20 refugee families, members of the Arab diaspora in the City of Erlangen (Germany), construct and regulate both their device and content media repertoires, in hopes of addressing gaps in migration research.

Theoretical framework

Until recent years, there were not many studies on the media usage of the Arab diaspora in Germany. Rinnawi (2012) conducted one study that assesses the media used by both older and younger generations of the diaspora. He finds that the older generation (or what he calls the 'first generation') primarily uses television media, while younger individuals, who grew up in Germany and are computer-proficient, tend to utilize the Internet more. Rinnawi (2012) claims that access to Arab satellite broadcasting in the 1990s has strengthened the Arab identity of individuals in a process he calls 'Instant Nationalism'. Additionally, he discusses how the Internet serves as a 'cyber-mufti' or a religious authority (ibid.). While his study addresses a large gap in knowledge about media usage, it does not analyse how this media usage contributes to the diaspora's integration into mainstream German culture. In recent years, the increase of forced migration has also led to multiple studies, however; all are focused on specific media such as the smartphone, or specific usage situations and contexts, like the escape experience, and/or specific groups: mostly young migrants (Arnold et al. 2017; Fiedler 2016; Kutscher and Kress 2018; Richter et al. 2016).

As noted in Rinnawi's (2012) research, diasporas use multiple types of media in their daily routine. For our study, we address mobile media used by children in Arab refugee families in Germany as a part of the entire spectrum of media in use. Therefore, we utilize the holistic framework of media repertoires (Hasebrink and Popp 2006; Hasebrink and Hepp 2017). This concept is based on three main principles:

- User centred perspective: the media repertoire approach asks which media a specific individual uses instead of inquiring which audiences a particular medium reaches.
- Entirety: this approach stresses the need to look at the whole catalogue of media utilized by an individual and not at a single medium, which avoids faulty information that might be extracted from particular medium usage.
- Relationality: how different media are connected to each other is extremely important as this reflects that media repertoires are premeditated and significantly structured configurations of media, not just the sum of media used.

In addition to the theory of media repertoires, we also utilize previous work on transnational migration and media usage. Studies on transnational migration, not specifically focused on Arab populations, have empathized the importance of digital/virtual media for gathering information, creating a safe space, a sense of belonging, shared experiences for migrants, or allowing freedom of expression (Gajjala 2004; Parham 2004; Wilding 2006; Hegde 2011). More recent studies have also «discussed visibility and the affordances of new technologies for strategic self-representation of migrants as networked agents and social forces» (Witteborn 2015, 1). In addition to these affordances, Witteborn (2015, 15) notes the process of becoming: «a process

through which people shift between different moments and ways of being and relating while responding to historical, sociopolitical and economic realities, and moving towards new ways of experiencing and acting in the world». She states that new media technologies have a hand in this process, and that «technologically enabled sociability can foster individual and collective ways of knowing, relating and becoming for forced migrants» (ibid).

Concerning specific media devices, Horst and Taylor (2014) find that mobile devices are essential for migrants which are constantly crossing borders. Observing migrants from Haiti and the Dominican Republic, Horst and Taylor (2014, 166) find that mobile devices enable relationships (similar to other populations); however, due to constant movement across borders, these devices take on specific properties and abilities. For individuals that are always on the move, the absence of mobile phones is felt strongly. Additionally, it facilitates the coordination and movement of goods and people, and finally, «the phone can also act as a proxy for people through negating the need for physical mobility» (ibid 166), meaning that individuals no longer need to visit their relatives or perform official functions such as paying bills.

With the increase of mobile media usage comes a need for regulation also due to their ubiquitous nature in children's lives. Regardless of where you come from, Germany, Syria, or Iraq, each set of parents have a variety of ways of regulating their children's media repertoires and consumption. Zaman et al.'s (2016) mixed-method study of 24 Belgian parents and their 36 children between the ages of three to nine highlighted a range of such strategies. The research results note the role of contextual factors in minimizing children's exposure to risks and facilitating digital opportunities. Specific parental mediation strategies can be both supportive or restrictive and contradictory in nature, they are as follows (Valkenburg et al. 1999; Zaman et al. 2016):

- Restrictive mediation: restricting access to media either through time (duration or moments of access), device (usage, number or type), content (used and consumed), location (distance from TV, etc.) and purchase (budgeting, free apps only).
- Co-use: mediations here include being a helper and directing children while using a medium or being a buddy and partaking in certain media events together.
- Active mediation: similar to restrictive mediation, however active mediation involves interactions and discussions about time, device, content and purchase issues.
- Distant mediation: the final mediation strategy involves parents being remote from children's usage of media while still being somewhat aware; it includes both deference and supervision. Deference is giving independence to children and not intervening while supervision is allowing independent usage but under direct observation.

It is important to note that both co-use and active mediation are considered a form of participatory learning, which highlight parents' investment in their children's digital literacy skills (Zaman et al. 2016, 12). Drawing on this pilot study, our qualitative case study wants to initially answer the question of how forced migration influences parental mediation strategies.

Additionally, we utilize Baacke's (1997) framework on «Medienkompetenz» to assess participants' media literacy. Baacke (1997) defines media literacy as the ability to adequately assess and use media technologies and/or content by observing individual's behaviour in the following four dimensions: media critique, media knowledge, media usage and media production. Concerning media critique, this concerns participants' ability to assess both the chances and risks media are able to provide, such as invasions to privacy or opportunities for positive self-presentation. The dimension of media knowledge deals with participants' knowledge of both the mediums, content and the technology itself; as well as how to operate and make us of it. Media usage, as a dimension, covers two aspects: concrete usage, which entails an individual's ability in being able to orient him/herself in the media world; for example, finding a specific program among a multitude of those provided, and use of interactive media; which encompasses all self-determined usage, such as writing letters to the editor, or using chatting programs. Finally, the dimension of media production deals with both the creation of media content, for either financial or entertainment purposes, as well as the collaboration with media. Collaboration does not necessarily have to result in the production of content, but individuals can also collaborate and share knowledge about certain aspects of media: such as laws, or programming, etc.

To assess Arab refugee families' media literacy and parental mediation strategies, we have formulated two research questions that identify these aspects in the family setting:

- RQ1: Which media literacy skills do family members of the Arab Diaspora possess?
- RQ2: How do different parental mediation strategies manifest in Arab Diaspora families?

The design of our case study ties in with the contextualizing perspective of the media repertoire approach; providing a user-centred perspective, which takes the entire repertoire and individual use (in relation to one another) into consideration.

Methodology

Our qualitative approach combined semi-structured interviews with parents and group interviews with children. Due to different levels of language proficiency, and different subjective assessments among the participants, it was essential to conduct personal in-depth interviews instead of a standardized survey. The interview

guideline for parents and children was composed of four sections. The first section dealt with personal questions, such as language proficiency, describing their daily routine, and contact with family back home. The second section dealt with media usage in Germany compared to back home. The third section dealt with children's media usage (for children these questions were directly, while for parents they were indirectly asked). The final section posed questions regarding problems and restrictions arising from media usage, such as quarrels or family media rules. The guided interviews were conducted from 25th February to 2nd March 2018.

Separate interviews were conducted in order to reduce possible cultural or linguistic barriers and to ensure that the participants were comfortable. The parents were interviewed by an Arabic speaking researcher in their own refugee housing or apartments. All parents spoke Arabic as a first language, with Turkish, Kurdish, English or beginner German as a second. The children, on the other hand, were mostly fluent in German and therefore interviewed in German (also at home) by another researcher and separately from their parents. This was also done to enable both respondent groups to be comfortable to share private information, which would enable a comparison of data later on.

According to information given to us by the Refugee and Integration Office of the City of Erlangen, within the last five years, approximately 2000 people have taken asylum in the city, 600 of which are children under the age of 18. From these 2000 refugees, 37% are Syrian and 21% are Iraqi. Using a preliminary questionnaire distributed by the City of Erlangen, we recruited asylum-seeking families in the City of Erlangen (Germany) to investigate their media repertoires. While 20 families might not be representative of the entire refugee population in Erlangen, we used theoretical sampling until saturation was reached; meaning that once no new answers were derived from interviews, further recruitment was halted.

All our interviewed families originated from either Iraq or Syria, spoke Arabic, and have resided in Germany for one to four years. The sample consisted of both couples and single parents, with ages ranging from 20 to 53. Most children were in their final year of kindergarten, in primary or secondary school and were between the ages of four and 18. Since some families included children younger than four years of age, they were not interviewed as they were not able to participate in the group interviews with their siblings. Additionally, the sample included a significant number of disabled children; this was thought to be due to Erlangen's reputation as a medical hub in Bavaria. Finally, it is essential to note that almost all children in the sample owned personal smartphones/tablets or had access to their parents' devices.

The Arabic interview data was transcribed by an Arabic native speaker into English. The now English interview data, and German focus group data, was then coded by three assistant researchers fluent in both English and German using the computer assisted qualitative data analysis software (CAQDAS) MAXQDA 18. The analysis

followed Mayring's (2000) qualitative content analysis approach, which attempts to systemize qualitative textual analysis in a method similar to quantitative ones: «The main idea of the procedure of analysis is thereby, to preserve the advantages of quantitative content analysis as developed within communication science and to transfer and further develop them to qualitative-interpretative steps of analysis» (1). This includes utilizing a coding agenda built on both deductive and inductive categories. Our coding agenda is made up of six sections: access and participation barriers, attitudes and behaviors, selections and decisions, family media rules, media competencies, and social integration in Germany. Deductive categories are built on surveyed literature while inductive categories were built into the agenda based on repeating patterns linked to the research questions. A pre-test was conducted by all coders to establish intercoder-reliability. The pre-test also proved useful in providing a number of inductive codes and fine tuning the coding agenda to remove redundancies.

Results

To better understand and classify results regarding media rules, mediation and media literacy, some contextual information on the living and educational situation of our participants is provided. This contextual information additionally answers our first *RQ*: Which media literacy skills do family members of the Arab Diaspora possess?

Basic situation and context

The families interviewed come from various educational levels, ranging from those who had finished primary school to a rare few with university degrees. The men in the family generally had a higher education standing (middle or high school, with some even having a B.A.). Most women, aside from one widow with a university degree, had only visited primary school and some were illiterate. While many women described themselves as housewives in their home countries, as well as in Germany now, many men had been employed, e.g. as taxi driver, electrician, house painter, owner of a plastic production company or a small supermarket. In Germany, a few men had already found basic employment, mostly part time. Many were looking for work and were busy with appointments at the employment office and filling out applications.

The command of German varied between beginner levels (A1) and advanced (B2). As with levels of education and work, men were at the forefront since some women could not attend German courses due to having children or infants at home. The children already demonstrated a good command of German and attended Kindergarten, refugee integration classes or after-school child care. Some children said they did

not know (or forgot) how to write in Arabic as they had not, or only shortly learned it before their escape. For those who spent a significant time during the migration process (on boats or in transition countries), this was the time spent learning their language.

In our sample, we had four families living in refugee housing, with only one private room and a shared bath or computer room, and 16 families that had already been allowed to move into their own apartment, which also depended on legal status. Even though families knew of other Arab families (e.g. neighbours in the refugee housing), contact was scarce and limited to relatives. Regarding hobbies not involving media, parents mentioned going out for walks and shopping, while the children noted sports (football and boxing), shopping, playgrounds, swimming, drawing, reading, board games, and foosball; which was available in some after-school childcare institutions and youth clubs.

The families were well equipped with media devices; some stating that they owned more devices now than back in their home countries. The devices were often quite new, and the families were rather technology savvy, e.g. they knew the intricacies and how to operate a smart TV, tablets and smartphones. Elder children often owned personal mobile phones and younger ones had tablets, which some had to share with their siblings. Many families utilize satellite television, allowing them to watch Arabic channels not regularly available in Germany. The families that owned books sometimes had received them from educational institutions, borrowed them from the public library (of the city or school) or bought them. As there was no internet access in some of the refugee housing, they bought data packages for their phones. For that specific reason, one family noted that they did not buy a laptop for their children since they could not use the internet as long as they lived in refugee housing. Once they were allowed to move, they would then make the purchase. Overall, media spending was quite sparse. No money was spent on purchasing actual content such as movies, music or streaming subscriptions. However, families spent around 15 Euro monthly per person for a mobile phone data package, and some had to pay additional satellite subscriptions.

Independent use, barriers and restrictions

The regulation of media usage is strongly connected to the subjective feeling of autonomy and to possible barriers and restrictions. Concerning disabled children in our sample, some of them were bedridden and could neither speak nor move their hands properly, so it was the parents or the siblings that decided if (and what) they watched on TV or listened to. In the same regard, there were also wives who were dependent on their husbands or children, because it was the husband who controlled the Facebook account, or the children who were more media savvy, e.g. in operating the

PlayStation or certain apps. Actually, the children showed quite self-sufficient use of their media; having no problems with downloading apps on their mobile phones or using WhatsApp to communicate with their peers.

The most often mentioned barrier that prevented both children and adults from using media was education related. Parents have to attend various language and integration courses, while the children often go to school all day and afterwards have to study for the next day.

> Father (40 years, from Syria): «It's impossible to watch a series every day for an hour because there is so much work to do, appointments with the municipality, colleagues, ... here in Germany time planning is everything.»

Another barrier to usage is the command of language. Parents whose German is not good enough mentioned that they are not able to follow local video or audio media programming. On the other hand, children mentioned that they stopped writing their friends in their home country because they were not used to the Arabic script.

> Son (15 years, from Iraq): «So, now I've written so much in German. I write mostly in German and I can now write quickly in German. That's why, if I write in my language [Arabic] by the time I get a sentence out, which really takes long, I am really fed up with this ... That's why I do not have so much contact with them [the old friends].»

Other barriers to access include: illiteracy, preventing some refugees from reading the news (be it online or in a newspaper), or the sharing of only one room for the whole family in the refugee housings, preventing parents from watching TV when their little children are already asleep. Finally, technical barriers such as prohibition by the landlord to install a receiver, and power outages in Iraq and Syria, which limit phone communication with families at home to text messages instead.

Connectivity and routine

The connection to relatives at home is the most important one for migrants. Yet, they are also connected to other refugees in Germany or in other European countries, and also to Germans. Above all, children talked in excess about their German friends with whom they keep contact via WhatsApp (texting, voice messages, pictures) and Facebook messenger. They also call each other and take part in school WhatsApp groups when available. Adults also mentioned using apps such as WhatsApp, Messenger, Viber, Imo and Facebook for communicative purposes. They now substitute the former face-to-face communication and regular visits back in their home country.

Mother (33 years, from Syria): «If there was no internet the situation would have been difficult now, at least we could hear the family's news and how they are doing. When we came here the small boy was 1 year old and he didn't know his uncles, but [now] when we video call he sees them and he recognizes them. The internet is like a blessing to us.»

Interviewer: «And do you still communicate with your relatives in Syria?»

Father (39 years, from Syria): «Of course, they are living in a hard situation, that is why I have to keep looking through my WhatsApp every two hours to make sure they are well.»

The children mentioned that back in Iraq or Syria, they were busy with visiting relatives and spent a lot of time playing in the streets, not leaving much time for media. Now, in their daily German routine, they use the mobile phone as a remedy for boredom, such as during the ride in the school bus (listening to music, watching YouTube movies, etc.) or on days when the weather is bad. Asked about a weekend deprived of media, they said that they would be extremely bored but mentioned other replacement activities, such as sports and drawing. The refugee children's daily media routine is quite similar to that of German children. TV or iPads in the morning are mostly used on weekends, not before school. After school and dinner, some media use happens either before or after homework, and during free time until the evening. Evening media time is usually spent together with the family watching television, or separately on computers and handheld devices (especially for older children).

Media rules and parental mediation strategies

Before looking at family media rules, we have to mention that children are also subject to media-related rules at school. There were schools that did not allow mobile phones at all: the children had to place them into a box when entering the building and they were given back at 1pm after school. Other institutions asked that phones were to be turned off and placed in schoolbags at all times. During school excursions, however, mobile phones were allowed to call parents (e.g. coordinating the return schedule). Children of five families told us explicitly that they had talked at school about media use, dangers of use, and media addiction.

To answer *RQ2* – How do parental mediation strategies manifest in Arab Diaspora families? – we follow the abovementioned parental mediation strategies framework, adding an additional aspect: «non-mediated media regulations/little lies» (see below for further explanation). It is interesting to note that most mediation strategies mentioned below are created by the mothers (but enforced by both parents) who are the ones mostly home all day with the children.

Restrictive mediation (regulations relating to time, device, content, location or purchase)

Time of media use is restricted for children in almost every family. Restrictions are either regarding number of hours, or period of time. Some families' restrictions are around one to three hours of watching TV per day (after doing homework or studying), while others forbid device usage before going to bed, between the hours of 8pm and 10pm. On the weekend or during holidays, restrictions were less strict or completely lifted. One father stated he bought the children some PlayStation games during the summer holidays and they were allowed to play them all the time. However, he then took away the PlayStation when school started again. In another family, the iPad was given to the children only on weekends. For a lot of families, the TV was turned off during meals. For others, however, it was a quite central piece in the apartment and meals took place regularly in front of it. Occasionally, an extension of time allocated to media usage was awarded for good grades.

> Mother (33 years, from Syria): «Honestly, when we came here I didn't have a problem but I noticed that my children finish their food after 1 hour, and they become so focused that [sometimes] they leave the food.»

Punishment for breaking the rules includes taking the device away or deleting the unwanted program or game. For example, one family found Superman and Disney videos on the device, which are in opposition to their religious and cultural beliefs; choosing to delete them. However, they allowed the children to watch Arabic movies instead, in hopes of strengthening cultural values. Some children were required to put away their mobile phones while doing their homework, others (however only few) while they slept. Younger children (beginning of primary school) were not yet allowed to own mobile phones, or the functionality of their phones was restricted (no internet access).

> Interviewer: «Do you allow them to use social media?»
>
> Father (33 years, from Syria): «After she (12 years) comes back from school we have lunch together, and she's only allowed to use it for one hour when I am in the house, but when I am outside, she exceeds the one hour.»
>
> Father (35 years, from Syria): «Once they (8 and 5 years) downloaded the Ninja Turtles game and it contains violence, so it told them 'if I saw it one more time I will take the iPad from you.'»

Active mediation (instructive or evaluative conversations; participatory learning)
Studying was noted as the most important reason for limiting media usage by children. This was unequivocally repeated both by parents and children. If the TV, iPad or mobile phone is available, children focus too much on the device and get distracted from learning. This understanding is a result from conversations held between both parties. Additionally, parents explained to their children that they have to get enough; sleep that is why they have to stop using the devices at a certain time in the evening.

In regard to content, parents also actively discussed and instructed their children on the types of content which they should avoid. Some parents instructed their children to avoid sexual content, and for those stemming from extremist backgrounds, even kissing in cartoons was seen as a threat to their religious values.

> Father (38 years, Iraq): «For example, they show things that aren't good for kids in cartoon movies … sexual things.»

Even though in many families, sexual content was more condemned than violence, there were also parents that did not like their children to watch horror, action or excessively violent movies. Images of war or violent games, and content on Facebook was especially frowned upon since multiple families had experienced real war and did not want their children to be reminded of this, or be made aware of what their relatives might be experiencing.

> Father (38 years, from Iraq): «When the small boy (7 years) is watching I have to keep an eye on him and it's impossible for him to watch violent movies because we escaped from violence.»

Other active mediation practices included that parents ask their children about what they downloaded. If it was an inappropriate game that had to be removed; they explained why. If inappropriate content appeared on TV, the parent changed the program. One mother told us that she always accompanied her sons (primary school) to the game store so that they did not buy games unsuitable for their age. One adolescent told us that their parents had told her to notify them if she watched an inappropriate video at school so that they could talk to the teacher.

Distant mediation (supervision, deference: e.g. while housekeeping)
Many parents observed their children directly (sitting beside them) or indirectly (giving a look here and there while doing housework) during children's media time: especially younger children. Some tried to do it as unobtrusively as possible, so as to not let their children feel controlled. However, some also said they trusted their children, or at least hoped they did not use their devices for pornographic content.

Co-use with children or with parents as a «helper» was only marginally mentioned. However, watching something together with parents or siblings («buddy») was mentioned more frequently.

> Single mother (32 years, from Syria): «The situation must be controlled. So, I always try as best I can to give them advice and watch what they do and certainly within the acceptable limits so as not to make them feel restricted.»

Even though distant mediation was quite often mentioned, there were also parents that did not intervene at all in media matters:

> Interviewer: «What does your son do with the phone?»
> Father (35 years, from Iraq): «He (14 years) uses it for communication and Facebook, I don't know what he does exactly. These are private things.»

Non-mediated media rules: «little lies»

Parents' non-mediated media regulations include taking the children's devices when they were asleep or not present and checking conversations, downloads or Instagram accounts. Children told us that they knew about various restricted devices, e.g. the smart TV password, as well as telling us about clandestine media use:

> Son (12 years, from Iraq): «When my mother goes to bed at around midnight, she usually takes with her our devices. But sometimes she just takes the laptop, so my brother and I used my iPad.»

Other non-mediated issues include broken devices or technical incidents which serve as little lies to mask regulation, making it easier for the parents:

> Father (33 years, from Syria): «I cut the Internet on purpose and tell her that it's gone.»

Finally, while parents try to discourage their children from certain content, they do partake in it themselves. So, one little lie is that most parents do not partake in violent content; wanting to support the rules they set themselves. They watch these movies when younger children have fallen asleep.

On the other hand, little children sometimes unknowingly set non-mediated, media-centric rules as well. One family, who lived in a single-room (refugee housing), told us that their three-year-old daughter always cries if the iPad and TV were not turned on simultaneously to cartoon movies. While another family stated that their child only fell asleep while watching TV.

Media critique

We asked families what they think about German media laws, what were their worries and concerns regarding media usage (especially in regard to their children). Many said they did not have any concerns and considered the German media laws to be fair (if they knew of any) e.g. age restrictions for content. However, several parents critiqued inappropriate programming in the early evening (e.g. sexual relations, bare skin) and advertising, especially on YouTube, annoyed some children. Furthermore, some parents had issues with specific messages being communicated in cartoons and other content targeted to children. One participant noted that there are messages promoting unhealthy behaviours and values to children:

> Father (47 years, from Syria): «I am aware enough to differentiate between the good and the bad. But it's hard for the children especially those who are two years old. For example, there is a cartoon movie where the mother gives the baby some vegetables, the baby takes the plate and throws it, and then he takes unhealthy food. I saw many movies like these. They're not suitable for children.»

Other parents that had major media critiques did so not only due to content but also due to frequency of usage.

> Father (33 years, from Syria): «If I let the children use the phone as they please then it'll be bad for them.»
>
> His wife (33 years, from Syria): «I know that if the child uses the phone for 3 to 4 hours his IQ will reduce by 30 to 40 percent.»

Conclusion

Our study investigated the media literacy skills and parental mediation strategies in relation to media repertoires of 20 families that had fled their war-torn countries of Iraq and Syria and sought asylum in the City of Erlangen, Germany. Having resided there between three to four years, both the parents' and children's media repertoires (content/device) underwent drastic changes. This led to a variety of mediation strategies being applied.

Similar to Belgians (Zaman et al. 2016), Arab refugees in our study applied three core parental mediation practices: restrictive, active and distant intervention. Using a media repertoire perspective, we were able to observe that parents regulate both their children's content and device repertoires. This was done either through limiting the number of devices, taking them away, restricting them with passwords, or controlling the content the children were allowed to watch and use. For more lenient parents, an additional intervention strategy was found: non-mediated media rules,

or «little lies», where parents would lie to their children about devices not functioning to spare them having to restrict access. This strategy is a prototypical example of a novel media related agency. Under certain conditions, refugees are more than able to regulate their media usage effectively, and in a meaningful way (see in more detail Friedrichs-Liesenkötter and Schmitt 2017). Alternatively, younger children would enforce non-mediated, media-centric rules by acting out if not getting their way with their devices. Arab refugee parents, however, did not apply co-use mediation strategies as often as other Belgian parents in Zaman et al.'s (2016) study, which we attribute to their lack of media skills and knowledge.

The manifestation of regular mediations noted in literature (Zaman et al. 2016) is similar to European families, such as limiting time of media device usage to certain periods during the day, or to a number of hours per day, or even location, e.g. not at the dinner table. However, the reasoning behind certain interventions is influenced by religious and cultural values which might not be as common in certain European cultures. While it was not the case for every family, several of those interviewed stated that sexual content was completely inappropriate for their children; the greatest danger for them, and the most likely reason for intervention. This can usually be attributed to cultural norms, or diverse religious values. In other cases, the culprit was violence. In many refugee families, it appears that the trauma experienced during their flight was so great that they do not want to expose their children to similar events.

In addition to cultural and religious values, education plays a role in mediation strategies, both in how they are enforced and the reasoning behind them. Most mediation strategies are applied due to the children's need to study. This is either done restrictively, by having their devices taken away from them, or through conversation and explanation. Also, the reasoning for parental mediation strategies is largely due to the parent's level of education. As the examples above have pinpointed, in our sample, we observed that Arab refugee parents are either more lenient or extremely strict without distinguishing between media. For example, parents will ban device usage without considering the need of the device for homework, e.g. YouTube tutorials, school online platforms or the like. They do not see the benefit of media for productivity, learning or studying. Additionally, their beliefs of the harms that media bring are built on assumptions that are not backed by science or fact; leading to harsher punishment or stricter intervention for those who do mediate.

Coming back to Baacke's (1997) framework on users' media literacy, one thing has to be emphasized. Our results hint that most parents miss profound knowledge in the areas *critique*, *knowledge*, *usage,* and *production* concerning German media. This is due to the fact that although adults can access German-language media content (some do it to improve their language skills), most of the content they access is in Arabic. All information about the host country (and German media) is mostly

collected in Arabic. That said, young people show a greater self-confidence and self-evident handling of media and its contents. However, this is not necessarily accompanied by a more critical and reflected media practice.

Looking further at the question of how media and communication could contribute to the integration of ethnic minorities, we suggest that enabling children and adolescents to competently make use of various media devices and content should be part of any integration effort. Language cartoons in which the social system (values, refuse collection, school routines, etc.) is explained, and which are sent via a town's YouTube channel, might be a first step.

Limitations

In the end, it is important to critically reflect on our study. What does it say about the agency of media as well as of the refugees? This study is based on the subjective perception of the interviewees, not on observed real-world practices per se. It is possible that there is a level of social desirability and that parents only wanted to relay qualities which would reflect well on them. Hence, their mediation strategies could be far less lenient than stated here. Also, the socioeconomic status of those interviewed in our study is of a specific level, so, it should be stated that Arab migrants of other socioeconomic levels could have completely different parental mediation practices; ones that might reflect different values and are not restricted as much by cultural and religious issues. However, we would expect similar findings in towns that are similar in size, region, and technological (e.g. net coverage) as well as public service equipment (e.g. public libraries).

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The family rules. The influence of parenting styles on adolescents' media literacy

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Abstract

The paper examines the relationship between parenting styles concerning media and the ability of young people to criticize media. It is based on 28 qualitative interviews with each parent and their children. Young people use social networks such as Instagram extensively, while their parents use them much less often. Nevertheless, they are the first instance of media socialization. They should communicate norms for media use and inform about opportunities and risks. Instagram fulfils adolescents' desire for social interaction with others or participation in the life of others, documentation of everyday life and the possibility of self-expression through its visual characteristics. The paper develops a typology of young people depending on parenting styles and illustrates their relevance for media criticism. The dimensions of parenting styles heat and control characterize this ability. The higher the warmth of parenting, the higher the children's ability to criticize the media. The influence of control is less clear. It is advantageous to a certain degree and helps the children. If it becomes too strong, control unfolds a rather negative potential that inhibits young people's media literacy.

Die Familie zählt. Der Zusammenhang zwischen elterlicher Medienerziehung und Medienkritikfähigkeit Jugendlicher

Zusammenfassung

Der Aufsatz untersucht den Zusammenhang zwischen der elterlichen Medienerziehung und der Medienkritikfähigkeit Jugendlicher. Basis sind je 28 qualitative Interviews mit einem Elternteil und ihren Kindern. Jugendliche nutzen soziale Netzwerke wie Instagram extensiv, ihre Eltern hingegen deutlich seltener. Dennoch sind sie erste Instanz der Mediensozialisation. Sie sollen Normen für die Mediennutzung vermitteln und über Chancen und Risiken aufklären. Instagram erfüllt den Wunsch Jugendlicher nach der sozialen Interaktion mit anderen bzw. die Teilhabe am Leben anderer, die Dokumentation des alltäglichen Lebens sowie die Möglichkeit zum Selbstausdruck durch seine visuelle Charakteristik. Der Aufsatz erarbeitet eine Typologie der Jugendlichen in Abhängigkeit der Medienerziehung und verdeutlicht deren Relevanz für die Medienkritikfähigkeit. Die Dimensionen elterlicher (Medien)erziehung Wärme und Kontrolle prägen diese Fähigkeit. Je höher die

Wärme der Erziehung, desto höher ist die Medienkritikfähigkeit der Kinder. Der Einfluss der Kontrolle ist weniger deutlich. Sie ist bis zu einem gewissen Grad vorteilhaft und hilft den Kindern. Wird sie zu stark, entfaltet die Kontrolle ein eher negatives Potenzial, das die Medienkompetenz Jugendlicher hemmt.

Introduction

Adolescents are «always and everywhere accessible» as well as «constantly connected to each other on the 'net» (Palfrey and Gasser 2008, 5; see also POPC, Vorderer et al. 2017). They use social media such as Instagram for posting, sharing, commenting, and connecting with peers. Half of all youths between the ages of 12 and 19 use Instagram regularly (JIM 2018). Given the platform's rapid increase in users, Instagram even «out-shadowed the growth of Facebook and Twitter» (Aßmann and Röbbeln 2013, 26), which exemplifies its importance in the social media realm. With its visual characteristics, Instagram seems to be designed for self-representation and for fulfilling adolescent's desire (according to their developmental tasks) for social interaction with others or participation in the life of others, documentation of everyday life and the possibility of self-expression through its visual characteristics (Havighurst 1972; Lee et al. 2015; Sheldon and Bryant 2016). Using social media platforms like Instagram, people classify and evaluate received content – skills that adolescents acquire during the media-socialization process. Various actors and groups are involved in this process, with parents playing a central role (Arnett 1995a, b; Süss 2004). The importance of parents in media education stems from the fact that the family remains the most important socialization place for adolescents (Albert et al. 2015; Arnett 2007; Belsky 1984; Hurrelmann and Bauer 2015, 2018). However, parents use social media much less often than their children and regularly have difficulty fully grasping this media world's complexities (Wagner and Gebel, 2014). In addition to different uses, parents' and children's personal characteristics influence the media socialization process (e.g., such as gender, age and socio-economic status, SES; Livingstone, Haddon, and Görzig 2012). Often parents struggle with the possibilities and risks social media platforms offer (Blum-Ross et al. 2018).

Nevertheless, parents have the task of creating an environment which provides the best circumstances for their children to acquire media literacy skills (e.g., for the social media use), as well as they have to accompanying the adolescents during their learning process. To meet this challenge parents must adapt their educational methods to the times to address the digital world's challenges and potential dangers. Furthermore, parents' demanding media-education task recently has expanded amid the progressive social processes of medialization (Wagner and Gebel 2014). The family atmosphere offers adolescents needed positive, emotional support on their way to adulthood, and this is an optimal growth stage when parents could help their

children to learn how to use media appropriately, and set limits and regulations to their media use. Particularly because media increasingly penetrate areas of everyday life and open up new possibilities for interaction within the family, they hardly can be kept out of family life (Wagner and Gebel 2014). Socialization takes place in the family context through different parenting styles, which is, according to Maccoby and Martin (1983), is a process that happens somewhere between the dimensions of warmth and control and can be differentiated through the educational measures used (Parental Mediation Theory, Clark 2011; Jiow, Lim, and Lin 2017; Peterson and Hann 1999). One aim of parental education and socialization of adolescents is the acquisition of media literacy, which unfolds within the context of family and its inherent media activities. How can the connection between parenting strategies concerning media and adolescents' media literacy best be characterized?

This paper focuses on the ability to reflect media content critically, i.e., evaluative media literacy, and on the social network Instagram. Based on qualitative interviews with parents and their children, this research presents a typology of adolescents' evaluative media literacy depending on the parenting style.

Theoretical background: Media socialization within families

Socialization aims to shape an individual into a socially capable subject (Hurrelmann 1990; Wagner 2011, 2013a) who is a morally upright member of society (Bachmair 2006; Lüscher and Liegle 2015). It is a process in which «individuals are assisted in the acquisition of skills necessary to function as members of their group» (Grusec 2002, 143). These individuals learn to regulate emotions, thoughts, and behaviors; to acquire cultural values and norms for integration into society; to resolve conflicts; to evaluate social relationships; and to take on active roles. In this process not only the result counts, but also the «genesis of skills for social action» (Wagner 2013a, 273), which also takes place on the adaptation of media content.

Part of this socialization process entails the acquisition of skills and the mediation of norms for media use, «the media are integrated in a variety of ways into the everyday lives of individuals and their actions» (Wagner 2013a, 276). This process takes place through self-socialization and external socialization (Arnett 1995a, b, 2007; Süss 2010). Self-socialization emphasizes the individual's active role in the socialization process and comprises self-directed media and content choices, as well as a biased reception in which one's own developmental tasks and everyday references serve as orientation (e.g., media appropriation, Wagner 2013a). External socialization focuses on the role of external instances in the media-socialization process (e.g., family, teachers, peers). These instances and adolescents' socialization goals determine how they deal with the media (Süss 2010). According to Hurrelmann and Bauer (2015, 2018), the family is the most important and primary socialization instance,

communicating external reality to adolescents and helping them filter and interpret it. In addition, the family, as youths' first conduit with media, provides impulses to create inner reality. Parental socialization, along with that of others, can be deemed media education. However, it depends on the general education concept (Süss 2010).

Parenting Styles

Pedagogical approach, which determines how parents raise their children, representing a «pattern of parental behavior and attitudes in the upbringing of [the] children» (Walper, Langmeyer, and Wendt 2015, 369). Following Maccoby and Martin (1983) distinctions between parenting styles are made based on the warmth and control dimensions. Originating from the discipline of child psychology, this categorization belongs to the most pervasive concepts within education. Warmth is used synonymously in extant literature with acceptance, love, or support (Weber 2015) and refers to parents' affection for their children. However, control includes «the regulation of childlike behavior or (...) the behavior of parents who are supposed to modify childlike behavior or the formation of the 'inner state' (attitudes, values ...)» (Peterson and Hann 1999, 333). Following Maccoby and Martin (1983), four parenting styles result from these dimensions:

- *Authoritative-democratic*: Characterized by high warmth levels and clear rules. These parents usually communicate openly with their children, discuss rules, and reach compromises. They view their children's independence as important, although they take responsibility for their children's actions, thereby creating a safe environment in which adolescents have the opportunity for self-socialization. To maintain the balance between autonomy and restriction, these adolescents are granted more freedom with increasing age (Seel and Hanke 2015).
- *Negligent*: Characterized by low warmth levels and little control. These parents minimize time and effort in interacting with their children and act partially oblivious. They know neither about their children's whereabouts nor about their activities and attach little importance to their opinions (Seel and Hanke 2015).
- *Authoritative*: Characterized by pronounced control and medium to low warmth levels. These parents attach great importance to obedience and conformity. Through strong control, they limit their children's independence, thereby preventing the development of independence and consciousness (Gugel, Ritzi, and Heuss 2013).
- *Permissive*: Characterized by high warmth levels and little control. These parents grant their children a great degree of freedom in connection with few behavioral requirements. Therefore, this style can be described as pampering (Walper et al. 2015). Active steering of the child takes place to a very limited extent. Rather, parents see themselves as a resource that their children can turn to when needed (Seel and Hanke 2015).

A broad consensus exists that the authoritative-democratic educational style creates the best conditions for positive development of adolescents, while the negligent style is considered the most negative. Permissive and authoritarian styles move between the two extremes, with the permissive style seeming to exert rather positive effects on children's development (Seel and Hanke 2015).

The four parenting styles also can be distinguished with regard to parenting styles concerning media education. The focus here is on whether parents control their children's media use, define rules, or create freedom and to what extent they support them.

Parental mediation

Parental mediation theory's starting point is parental media education on childhood TV consumption (Nathanson 1999, 2001; Valkenburg et al. 1999). A distinction is made between three forms of parental mediation (Lemish 2015):

- *Restrictive* measures include rules and regulations that parents institute, including sanctions for non-compliance (Nathanson 2004, 2010; Mares et al. 2018).
- *Active* measures rely on parent-child discussions to interpret and classify media content (Gentile et al. 2012; Warren 2001).
- *Accompanying* measures are sometimes referred to as co-using and refer to parents and children's common use of media (Clark 2011; Mendoza 2009).

Those measures are educative decisions and practices by the parents. According to Jiow et al. (2017), these three measures serve as overarching strategies differentiated by four further dimensions – gatekeeping, discursive, investigative, and distracting dimensions – and are applied in various combinations. For example, restrictive-investigative measures serve to determine the extent to which established rules are followed. Active-investigative measures are used to provide parents with discussion topics, thereby promoting dialogue with their children. With the help of these differentiations, the degree of parental control can be determined. For example, particularly restrictive gatekeeping measures indicate a high level of control, while active-discourse measures indicate moderate control and are an important prerequisite for a relationship at their children's level, in which media communication is a media-socialization task.

Evaluative media literacy

Media literacy is regarded as a key qualification for «finding one's way around and acting in a media-influenced world» (Aufenanger 2006, 118; Groeben 2004; Potter 2010). A media-literate individual acts media-responsible (Lampert 2006). Media literacy

is essential for sovereign, independent, and socially responsible handling of media (Sowka et al. 2015), and it is normatively perceived as an objective. Schorb (2005) defines media literacy as a learnable bundle of partial skills, such as media knowledge, media action, and media evaluation, whereas this paper is limited to media evaluation only, which is viewed as a central dimension of media literacy (Sowka et al. 2015). Developing young people into responsible individuals requires approaching media critically and reflectively. Therefore, the ability to review the media is an often-discussed dimension of media literacy (Lemish 2015).

These skills are important in processing inner and outer realities. On the basis of the evaluation of previous environmental incidents and experiences, recipients are enabled to «orient and structure their own actions in a targeted manner» (Hurrelmann and Bauer 2015, 149). This discussion leads to an individual action guideline to interpret and evaluate media (content). Media evaluation consists of six dimensions (Sowka et al. 2015; Treumann et al. 2007):

1. *Analytical dimension*: Recognition of staging (fictional vs. non-fictional media content). Analytical skills help ensure that the recipient's thinking, feeling, and acting are based on realistic world assessments (Potter 2013).
2. *Reflexive dimension*: Recognition of intentionality, which is closely linked to the analytical dimension. The recipient who is capable of criticism should recognize intentions that are not openly communicated and pursued in connection with media content (e.g., commercial interests behind advertising messages).
3. *Credibility*: Assessment of the message's reliability and classification, e.g., regarding commercial or non-commercial intentions. A self-determined formation of opinion and life function is made possible through a truthful picture of reality (Rozendaal et al. 2011). In this respect, the second and third dimensions are related directly to each other. Only recognizing communication intention enables the recipient to assess senders critically regarding their credibility.
4. *Reflection of personal media use*: Focusing on one's own media use and critically examining it. This dimension focuses not only on communication outlets, but also on one's own media use. It includes «[...] the ability of young people to make themselves and their media activities the object of analysis» (Treumann et al. 2007, 33). This requires that a balance be struck between one's own aspirations and the (normative) demands placed on appropriate forms of media representation.
5. *Ethical dimension*: Moral critical evaluation that considers human dignity, part of the self-revelation of personal value standards. It is decisive to what extent «[...] young people can make value judgments about media and their contents» (Treumann et al. 2007, 33). For example, this is expressed by whether the social consequences of media content are factored into the judgments.

6. *Recognition of threats and opportunities*: Connections between inner and outer realities. Which chances/risks are connected with one's own and others' media use? Awareness of danger increasingly is expressed, e.g., whether the reflected recipient protects his or her privacy on social media and how attentive he or she is when dealing with external data.

Youths' individual ability to criticize media influences behavioral patterns, experiences in the online world, and perceptions of online dangers and opportunities. If one combines this with the fact that media evaluation is a decisive prerequisite for acquiring individual guidelines for action, the ability to criticize media is of central importance. As a core element of media evaluation, it is an indicator of young people's media literacy.

However, how do young people know how to use media literately and evaluate them critically? Teaching these skills is a central task in the media-socialization process and is taught through various agents, including parents – the most important socialization agent. This paper contextualizes extant research on parents' socialization and upbringing in the context of youths' media education and literacy development. Particular attention is paid to the extent to which the warmth and control dimensions – which are regarded as decisive parenting style characteristics – are related to adolescents' media literacy. The research question is:
RQ: What is the relationship between parenting style and youths' media literacy in terms of assessment and reflection?

Method: Qualitative interviews with parents and adolescents

Research design and interview guidelines

To answer the research question, we conducted 28 qualitative interviews with parents and their children in summer 2018 (interview dyads). In addition, parents and adolescents were given a primary task (think aloud). Two printed Instagram images were presented, showing the extent to which parents and adolescents can reflect other people's – in the case of adolescents, their own – self-representation, the importance they would attach to it, and the evaluation of such content. The shown pictures differed in the staging of the representation. A picture was consciously chosen as a staged representation of a young woman showing an advertising cooperation with a cosmetics manufacturer. The other picture showed a young woman after sports or a young man in nature (depending on gender, the picture of the woman or the man was shown). All pictures were real representations of public profiles on Instagram.

Qualitative interviews were chosen because this methodological design is well-suited for examining attitudes, opinions, and behaviors, and because relevant aspects of media literacy and parenting styles are hardly observable. Thus, letting the "test objects" themselves talk about their experiences and specific world views helps make information relevant to research accessible (Vogl 2012). By means of these guidelines, the course of conversation is structured throughout the interview, and a basis of comparison for the interviewees is established. However, as this approach is only half-structured, enough space remains available for open-ended questioning (Keuneke 2017). Regarding the rising trend toward visual realms on social media sites, which led to the rise of platforms like Instagram (Faßmann and Moss 2016), the qualitative approach was applied on the latter.

We developed different interview guidelines for adolescents and parents, but they contained the same constructs. Both focused on adolescents' media use and literacy. Following the theoretical assumptions, the guidelines contained dimensions of evaluative media literacy that were realized as the ability to recognize and reflect other people's self-representation, as well as the importance that they would attach to it. Furthermore, interviewees were asked to reflect on the consequences of their actions, how they value the risks and benefits of Instagram, and how they evaluate others' actions. We included questions on everyday life as well, concerning the relationship between parents and children. To detect parenting styles, the adults also were asked how they mediate values, which rules and restrictions they establish concerning media, and what kind of expectations they place on their children's media use. All parts corresponded with the guidelines; therefore, the whole interview had to be analyzed. The interviews were conducted face-to-face, recorded, and transcribed into written form.

Sample

To understand the link between parenting styles and adolescents' evaluative media literacy, interview dyads with fathers or mothers and their children were conducted to gain a valid impression of the respective situation. Due to this conceptualization, the statements that each interviewee made can be put into perspective to reduce subjectivity. Most of the interviews took place at respondents' homes and lasted 21 to 28 minutes each. The dyads were recruited through personal contacts. In total, 18 girls, 10 boys, three men, and 25 women were interviewed. Ages varied from 14 to 17 and from 40 to 55 years (see table 1). Using a personal Instagram account and being between 14 and 17 years old occasionally was viewed as a basic requirement for the interviewed children because this age group makes particularly intensive use of Instagram (JIM 2018). Other recruitment criteria (e.g. with regard to education or the SES) were not defined for young people. Conversely, the parents did not have

any restrictions concerning their participation on Instagram. For privacy matters, all respondents were given pseudonyms.

Adolescents				Parents			
Pseudonym	Age	Sex	Education status	Pseudonym	Age	Sex	Education status
Anton	16	m	High school	Anna	55	f	University
Bea	14	f	Secondary modern school	Beate	49	f	Secondary school
Cora	15	f	High school	Carmen	53	f	High school
Diana	15	f	High school	Dagmar	42	f	Secondary school
Elena	16	f	Technical college	Eva	46	f	Apprenticeship
Franziska	15	f	Secondary school	Fiona	47	f	Apprenticeship
Bastian	16	m	High school	Gina	54	f	Unknown
Carsten	15	m	Secondary school	Heidi	51	f	University
Daniel	15	m	Secondary school	Inge	49	f	University
Nils	16	m	High school	Judith	51	f	Apprenticeship
Gloria	17	f	Secondary school	Kerstin	47	f	Apprenticeship
Hannah	16	f	Secondary school	Lydia	48	f	University
Ina	15	f	Secondary school	Maya	48	f	High school
Felix	15	m	High school	Nora		f	University
Gustav	17	m	High school	Olga		f	Unknown
Jana	15	f	Secondary school	Pia	50	f	University
Klara	16	f	Technical college	Albert	49	m	University
Lilli	14	f	Unknown	Ruth	50	f	University
Mia	15	f	High school	Sabine	40	f	Unknown
Nina	14	f	Secondary school	Thea	49	f	University
Olivia	17	f	High school	Boris	48	m	University
Paula	17	f	High school	Ulrike	45	f	Apprenticeship
Henry	17	m	Secondary school	Christian	51	m	Apprenticeship
Ilias	16	m	High school	Vera	45	f	Apprenticeship
Rosa	16	f	High school	Waltraud	51	f	University
Jonas	16	m	Secondary school	Agathe	43	f	Secondary school
Steffi	14	f	High school	Chiara	53	f	University
Tina	14	f	Secondary school	Doris	44	f	University

Tab. 1.: Sample characteristics.

Analysis

All interviews were analyzed following a theory-driven approach (Meyen et al. 2019). The theoretical constructs named above were adapted and partly redefined, leading to the final category system. The categories turned out to be suitable for grasping similarities and differences between types (Kluge 2000). The first category is evaluative media literacy, i.e., the ability to reflect on media content critically. This skill comprises the six aforementioned dimensions: the analytical, reflexive, and ethical

dimensions; assessment of credibility; critical reflection of personal media use; and recognition of threats and opportunities. For simplification purposes, this category will be called “evaluative media literacy” henceforth. The second category, parenting styles, focused on control in the sense of prohibitions and restrictions, as well as warmth manifested through the respective parent-child relationship (Wagner 2013b). Other indicators concerning the extent of warmth included interest that parents show in their children’s lives, including their knowledge of life’s realities and their children’s emotional world, and the importance that they attach to mutual activities. As control and warmth build the main axes of our typology and a simple derivation from their linguistic meaning would have been too blurry, we integrated different “activities”, deriving from the Parental Mediation Theory, in our approach. Those – here termed – measures were, therefore, used as a means to make our main indicators measurable. Generally, restrictive measures were seen as a sign for control, whereas active and accompanying measures mostly stood for a warm parenting style. Moreover, the rough distinctions of warmth and control – from low to high – used by Maccoby and Martin (1983), turned out to be too undifferentiated. That’s why their theory only functioned as a framework and was further established due to this research. Accordingly, there might be deviations from theory regarding parenting styles in this paper. The third category considers the personality of each individual interviewee. To get an exact idea of something so complex, everyday life and media use, as well as (the conformity between) the values of parents and children, were among the principal focus points. This category is highly important for the final classification and interpretation of the findings.

The analysis was conducted based on these three categories. First, the interviews were examined with a view towards the given categories, so that only crucial areas in the responses were marked and paraphrased. Then the comments containing research-related information were organized into a table in which direct comparisons of extracted aspects of the two interviews per dyad were made. To generalize this information and make it comparable, two more compression steps were taken with the aim of condensing the material and thus recognizing similarities and differences between the dyads (Meyen et al. 2019). In the last step, the second category was broken down into the extent of warmth and control. Additionally, the individual dimensions of media literacy were portrayed briefly and supplied with a positive or negative sign. Along with the different steps, the coders exchanged their initial dyads to guarantee the findings’ comparability.

Based on the interview compressions, the dyads were assigned to the parenting styles outlined before. Because the line between an authoritative-democratic and a permissive parenting style is quite blurry, the dyads were incorporated into a table with four fields containing the axes «warmth» and «control». For means of precision, the latter dimensions were specified due to a continuum reaching from small to large

extent. Thus, in the first step, the compressed information was used to locate the parenting style that the respective children experienced, referencing the extent of warmth and control. In the second step, the resulting point then was transformed into a cross. By using different-size crosses (conveying very low to very high), media literacy – as the third factor – could be integrated into the image. Thus, in the overall view, several agglomerations became apparent. The parenting styles (indicated through the extent of warmth and control) were linked directly to adolescents' media literacy. Finally, this led to four cohorts that turned out to be suitable for meeting the objectives for a typology: high internal homogeneity within the type and high external heterogeneity compared with other types (Kluge 2000). Based on that, the following process focused on analyzing the dyads' similarities within different cohorts, building the basis for the four characteristics in the following results section. The most striking characteristic in each type eventually reflects the type name (see figure 1).

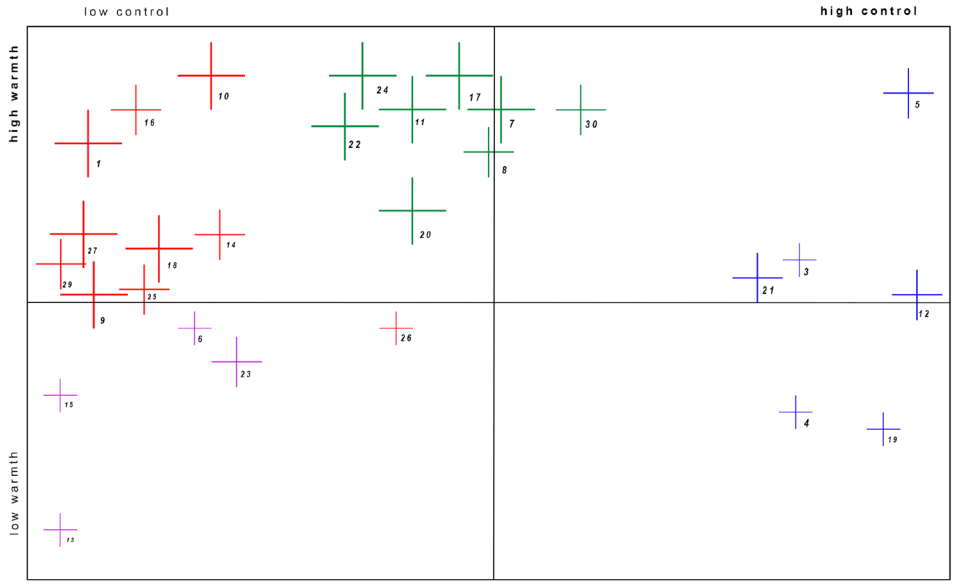

Fig. 1.: Development of types.[1]

1 + Type I: Reflected self-presenters
+ Type II: Authentic free spirits
+ Type III: Hazard-aware poseurs
+ Type IV: Transfigured imitators

Results: Typology of adolescents based on their evaluative media literacy – combined with parenting styles

The typology evolves around the evaluative media literacy of adolescents. To give a holistic image of how this competence is composed, the parenting styles that children experience – as main indicator – are being taken into account. Thus, the following type descriptions do not solely focus on the characterizing features of the evaluative media literacy, but also stress the respective parenting style.

Type I: Reflected self-presenters

The first type is characterized by high evaluative media literacy on the one hand and authoritative parenting style on the other. This style of parenting – underlying Type I – comprises high warmth in combination with low to moderate control. Instead, parents' objective is to pose as a dialogue partner rather than control their children explicitly. To achieve this, mostly active-discursive activities are used.

> «What we always talk about are the risks, of course. I think it's important to talk about it, basically that I, as an adult, can sharpen her awareness for them and see how much she can handle by herself. Of course, I supervise that» (Pia, parent).

Parents also demonstrate very strong interest in their children's social media activities and use a variety of investigative measures. This interest, in combination with low control, comprises a positive relationship between parents and children, one that adults describe as dialogue-based and characterize as mutual trust: «Because we have a two-way trust, I think I know what she's doing in the virtual realm. I don't control her, but I know it anyway because she shows me often herself» (Fiona, parent). Restrictive activities are applied only in borderline situations in which parents anticipate that a situation has overwhelmed their children. Nevertheless, discursive activities are used primarily: «If I get the feeling that she has a problem, then we talk about it and think of solutions together» (Judith, parent). In combination with this style of parenting, adolescents exhibit high evaluative media literacy, with an outstanding analytical dimension. The adolescents' ability to distinguish reality from virtuality is remarkably developed, and they can detect self-production easily. What is striking about this is that they do not see it as negative. Indeed, they even adopt this and try to present it in a very positive light. Consequently, aesthetics is most important to them concerning their Instagram content, even more important than authenticity: «On Instagram, I always feel like if I post something, it should be a good post, where I look good» (Bastian, child). This need is strongly connected to adolescents' awareness of risks: They know that once content is posted, they can never erase it from the web.

> «It's not only on Instagram, though, but everywhere if you upload it and everyone can see it. I think also, especially for me, if I want a job someday, then I shouldn't post pictures when I go to a party or something like that because that wouldn't be so well-received somehow» (Nils, child).

According to this awareness adolescents tend to represent themselves in a very positive way, so that their profile won't cause any unforeseen consequences for them in the future. This positive self-presentation might be one reason why many of the adolescents have a public profile, or tend to accept all «following» requests since – in their judgement – no harm can be caused when strangers are able to see their profile.

This type's abilities in the other dimensions of evaluative media literacy are also well-established. Adolescents detect ads very quickly as well, as they have monetary aspects in mind and judge the advertiser's credibility on that. Furthermore, they view hate speech and negative comments on social media as shameful. Consistently, the most important value reflected is respect. Generally, most of the children and parents' values correspond with each other, punctuating the close relationship between them, the parents asserted.

Compared with other media types, social media are of particular importance: «I couldn't do without, then I wouldn't notice anything anymore. So, Instagram is very important to me» (Tina, child). Nevertheless, they can reflect on their own media use critically. Under the precondition of guidance and freedom that parents afforded them, the adolescents have developed high evaluative media literacy, with an outstanding ability to detect self-promotion. In addition, Instagram is very important to them, and sometimes, they even ignore risks that they anticipated to satisfy their own desire for self-presentation.

Type II: Authentic free spirits

The authentic free spirits live under a rather permissive parenting style, with lower, but still decent, warmth levels compared with Type I and nearly no control at all. However, these youths' evaluative media literacy is still high. Parents sporadically make use of active-discursive or investigative measures whenever they see the need to intervene: «If we feel like it would be nice that the cellphones are put away during dinner, then you could consider saying something. But otherwise they are all grown up and I don't have the impression something is out of control» (Albert, parent). As the parents have high trust in their children and their media-related abilities, they afford their children many freedoms. Moreover, the adolescence phase elicits a laissez faire approach: «I believe that control in this age doesn't have a positive effect» (Anna, parent). Apart from this, many of the parents consider themselves unable to establish rules regarding Instagram, as they lack the required knowledge to deal with

the platform. Generally, this type has a good, balanced relationship with parents, emphasizing medium to high warmth in the parenting style.

Compared with other types, authentic free spirits consume media less often and also attach a moderate meaning to Instagram: «I know that if I didn't have [the app], I would also be satisfied» (Carsten, parent). Correspondingly, this type's members are best described as passive users: «Most of the time, I only watch the posts of others. [...]. Very rarely, I upload a photo myself, but that's once in a blue moon» (Steffi, child). The striking point about the authentic free spirits is that when they decide to post something, authentic presentation is the principal focus: «The people who are following me are mostly my best friends. Why should I deceive them by pretending something to be nice? Or that something looks especially good, if they know me anyways» (Anton, child)?

This particularity easily can be connected to the strong analytical dimension to which this second type is attributed. Most of the authentic free spirits can distinguish reality from virtuality precisely. Therefore, in almost all cases, they can recognize staging connected to Instagram. However, most importantly, they stand out because they directly link the analytical to the reflexive dimensions, and through this, they go beyond pure perception. Thus, they take a closer look at the intentions behind a post and assess staging in the context of profit-making, fake self-portrayal, and status enhancement as negative. Authentic free spirits mainly are critical about products that influencers advertise and tend not to follow their recommendations. However, half of the members of this type did not detect the ad at first glance. Moreover, they were only partly aware of Internet dangers to which they are exposed on a daily basis. Nevertheless, the authentic free spirits consider Internet anonymity to be highly risky, especially «[…] because many people just write something, what they would never tell others in real life» (Klara, child). This is why those of this type declare kindness as their highest value: «I believe that you should deal with one another in a friendly way» (Klara, child).

Authentic free spirits develop from the influence of high parental warmth and few or no restrictions, and they have high analytical skills that – in connection with the strong reflexive dimension – lead to a fundamental skepticism toward Instagram in general and influencers and their advertised products in particular.

Type III: Hazard-aware poseurs

Hazard-aware poseurs are the most controlled adolescents in this typology. The type's parenting style is characterized by regulations and restrictions when it comes to media access and use. «No cell phones at the table – that's our rule. At night, it has to be in the kitchen. It doesn't come to the (bed)room to prevent them from beginning to 'gamble' at night» (Thea, parent). This high control comes with moderate

warmth when referring to juveniles' media use. These parents are very concerned with social media risks in particular, yet they do not understand the importance of it for adolescents, and the potential benefits often are overlooked: «It's like that … (this) new media and this influencer, where we as adults know absolutely nothing about, is just normal and that's not my world. That's why I'd limit it» (Beate, parent). Consequently, parents' interest in their children's social media activities is rather low, which leads to a relative lack of warmth in this regard. Investigative measures, which often are utilized, are not meant to satisfy parents' curiosity about their children's activities. However, to ensure their children follow their rules, conformity is of great importance to the adults: «I expect that if I tell her something or ask her, and she gives me an answer, we come to an agreement or I give an order that she adheres to; I don't stay with that» (Beate, parent). If adolescents do not follow the rules, strict consequences occur. «Then I take the device. I restrict the usage,» Beate (parent) said. This parenting style with media usage can be identified as authoritarian. This style has various effects on the relationship between parents and children. It seems, that with more restrictions and regulations, children feel less motivated to discuss their thoughts and concerns with their parents. They become more like an opponent than a confidant. Following this, high control leads to a less trustful relationship.

In addition, hazard-aware poseurs' media use is moderate in terms of evaluative media literacy. The reason for their lower consumption is less about a lack of interest and more about strict rules to follow. If the adolescents get the chance, they widen their media use extensively. If asked, parents claim active mediation is useless: «But then the addiction is always bigger, especially with Instagram. I see that there are messages popping up at one-second intervals» (Ruth, parent). Instagram is very important for most adolescents, and even the few who claim that it is not feel like they must use it to stay up to date: «They all talked about it, how great it is and what is the newest trend. I found it silly because everyone laughed at me because I didn't have Instagram. Yes, I didn't want to download it at first, but then I thought like I don't care. Then I downloaded it» (Nina, child). The high level of appreciation for Instagram is linked to an inability to distinguish real life from the online realm. For these adolescents, it is difficult to recognize staging. Due to this, they develop envy for influencers and other Instagram users, as well as a desire to show the world an equally perfect picture of themselves: «Probably most people post pictures of themselves where they look perfect; mine don't always look that perfect, but you try to make it as perfect as possible» (Bea, child). However, this type has an outstanding ability to detect online risks, an ability related closely to parenting style, which is based on adults' focus on risks. Privacy issues and data security seem most important to these adolescents. In the other dimensions of evaluative media literacy, their abilities are low to moderate.

This type shows moderate evaluative media literacy compared with the others. They idolize influencers and try to achieve a similarly perfect self-portrayal online. Parents' tight control indicates a strong vigilance toward online risks to their children but this vigilance seems to fuel the high importance that their adolescent children place on social media, as they were never allowed to experience such media themselves and develop evaluative media literacy.

Type IV: Transfigured Imitators

Transfigured imitators have the lowest media literacy out of all four types. Given the low warmth and lack of control that these youths experience regarding their education, their parents are often described as careless. A certain ignorance often accompanies this low parental involvement: «She goes to school. I hope she goes to school. Afterward, she hopefully does her homework […]» (Lydia, parent). This sort of parenting style is viewed as negligent in extant literature. The reasons for this apathy usually can be found in difficult parent-child relationships often linked to the adolescent life stage. Particularly stubborn behavior by youths leads to differences of opinion with their parents: «If she has set her mind on a routine or a special date, then she won't deviate a millimeter from that» (Ulrike, parent). Moreover, this unruly behavior results in no restrictions or rules being applied because «her daughter doesn't care what she [the mother] says; that would end up in a serious fight» (Lydia, parent). In the end, this also can affect parents' support and warmth toward their children, as their behavior is just not «family-compatible» (Ulrike, parent). However, if parents make use of education measures, they most likely will apply investigative methods, particularly for their own sake: «[My husband] could even pursue all their chat messages online […]. Actually, it was just interesting to hear, when he [the son] chatted with girls» (Nora, parent). Finally, a break in the child-parent relationship becomes evident when the youths fail to adopt the values that parents communicate to them: «Back in the days, just looking good wasn't very important. But confidence, career and equality were important» (Lydia, parent). Hannah, the daughter of this interviewed mother, embodies exactly what Lydia distances herself from. She idolizes certain persons on Instagram based on their looks, because «that would also be nice to be as photogenic» (Hannah, child).

The transfigured imitators live up to their own ideals, reflecting superficial striving for perfection, which social media platforms like Instagram promote. Considering that the members of this type use media intensively and place much value on self-portrayal, their low evaluative media literacy leaves them vulnerable to many threats. Particularly because the youths belonging to this cohort struggle to differentiate between virtuality and reality, they are prone to becoming stuck in an alternative reality that Instagram creates. To approach this ideal of a perfect world, they

first search for inspiration on the platform, then adapt strategies of representation that they see influencers use: «If I know a person whose feed I like, then I get inspired by that. Hence, I look, how it looks like on her account, then I think if it would also fit for me» (Paula, child). By this, an unrealistic perspective on the world is fostered because for the adolescent, the virtual world functions as a fundamental measuring tool that drives actions. Furthermore, the blurry line between virtuality and reality leads to dangers from Internet use being ignored and privacy becoming a secondary matter. Accordingly, Paula (child) said she also has posted photos of herself in a bikini because «bikinis are meant to be seen in.» Given the struggles that youths have distinguishing real from virtual worlds, they also do not understand the circumstances surrounding product placement. If the reflexive dimension is not notably strong, product placement stimulates relevant buying impulses: «If I like it and if I have enough money to buy it – because I'm rather following people in the high-end section» (Felix, child). Obviously, if intentions are not being detected, it is hard to make a differentiated assessment of the advertised product.

Under the terms of low warmth and low to no control, transfigured imitators have relatively low media literacy compared with other types. The lack of evaluative media literacy can take on an undesirable dynamic of its own if media use and striving for perfection are not regulated in some way.

Discussion

Results show the relevance of parenting styles in their children's evaluative media literacy. It becomes clear that first, the two criteria of warmth and control exert a decisive influence on adolescents' evaluative media literacy, and second, that adolescents differ in terms of their media literacy depending on parenting style concerning media. Table 2 provides an overview:

Type characteristics		Type I: Reflected self-presenters	Type II: Authentic free spirits	Type III: Hazard-aware poseurs	Type IV: Transfigured imitators
Attributes		5 girls, 3 boys	5 girls, 6 boys	6 girls	2 girls, 1 boy
Parenting	Warmth	High	Medium to high	Medium	Low
	Control	Low to medium	Low to none	High	Low to none
	Measures	Strongly active-discursive, sometimes investigative	To some extent active-discursive, to some extent investigative	Extremely restrictive and investigative, seldom active	Hardly used
Evaluative media literacy Strength		Very high recognition of opportunities and risks & reflection of personal media use	High distinguishing virtuality and reality	Medium recognition of risks	Low none

Tab. 2.: Typology of adolescents' evaluative media literacy depending on parenting style.

The described findings indicate that warmth in terms of media education strongly benefits adolescents' evaluative media literacy. The higher the warmth, the higher their media literacy. One of the supposed factors is that warmth comes from parents' high sensitivity to their children's abilities and needs. Through active-discursive mediation, adults create and improve that sensitivity so that parenting styles can be adjusted individually. According to extant studies, an individual parenting style is positively related to high social abilities and high independence (Belsky 1984). Our findings underline this, given that adolescents who experienced a warmer parenting are less likely to imitate influencers or follow their recommendations. Furthermore, these youths tend to have higher social abilities, which shows through the high importance of respect and affability toward juveniles.

Another factor might be that warmth seems to create a positive parent-child relationship, which is characterized by mutual trust. This allows for open discussions, which again enable parents to support juveniles in superior ways. With a less authoritarian structure, parents become more like confidants, making it easier for their children to accept parental advice. This kind of supportive parenting has been proven to exert a positive effect on children's development in a wider context, but when applied to media literacy, our results support this theory (Weber 2015). Although warmth exerts an undeniably positive impact on evaluative media literacy, when adolescents grow up, this warmth needs to be combined with freedom progressively, or else their development might be suppressed in terms of autonomy. Hence, the

perfect environment for development of evaluative media literacy can be provided through a parenting style that comprises high warmth, but still provides enough latitude for children to develop individually.

Based on the typology, we state that evaluative media literacy decreases with ascending control. Simultaneously non-existent control shows the same effect. Reasons for this can be found in various contexts. One aspect might be that with more restrictions and regulations, parents are less likely to be confidants for children, providing advice and help. Consequently, it becomes more difficult for parents to provide guidance. If no control, for example in terms of regulations exists to the contrary, the adolescents could feel abandoned by their parents and will not turn to them likewise. Furthermore, if parents mostly utilize restrictive measures, children's potential for self-socialization is reduced. During adolescence, children should experiment in a sheltered surrounding to learn how to be a responsible member of society. Consequently, the grade of external control should decrease steadily while the grade of individual responsibility should rise until the juveniles are fully independent. Without that, children cannot tap into their full potential for self-socialization, which leads to lower-level abilities compared with their contemporaries, who can improve theirs through constant trial and error, which is an important factor in developing media literacy, not only in the context of self-socialization, but also for evaluating and classifying media content. If, for example, youths already tried to use certain strategies of self-portrayal themselves, these strategies might get easier to detect, and more important, the ability to evaluate them will be developed. In this way, juveniles will gain a more realistic perspective on content and improve their analytical abilities to prevent idealization of media offers.

Furthermore, a relationship appears to exist between the high value of media to youths and high control, constituted through restrictive measures by parents. A lack of knowledge about media leads to more curiosity about it, especially in this life stage, when restrictions only seem to increase attraction, as well as elicit resistance. During this phase of life, adolescents are likely to ignore rules and restrictions, and even break them on purpose. Accordingly, parents must pay attention and avoid turning their list of limitations into a hit list (Süss 2004). And yet, this life stage may explain why adolescents still need a certain amount of control and restrictions to create supporting circumstances that help develop their evaluative media literacy. To accomplish developmental tasks, juveniles still need their parents' guidance for orientation and support, especially in the tangle of media offers. Therefore, parents' task is to create a supportive, balanced environment through steady adaptation of control over adolescents' abilities and needs, so that they have the freedom they need to master self-socialization, particularly in terms of media socialization.

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Parents' online self-disclosure and parental social media trusteeship

How parents manage the digital identity of their children

Thorsten Naab

Abstract

Although parents consider online privacy important, they insouciantly include personal information about their children. Reviewing research on the privacy paradox and online self-disclosure, this article suggests the concept of media trusteeship as an additional theoretical perspective to understand how parents shape the digital identity of their children. The results of 46 in-depth interviews indicate that parents are largely unaware of the described role duality and are only partially able to foresee the consequences of their activities. The analysis identifies three distinct types of parental media trusteeship: While some parents shield their offspring from social media, others appear unable to respond adequately to the risks of social media activities or seem to ignore them completely. Finally, it became clear that the parents surveyed had no idea how to teach media literacy and guide their children to a safe and careful use of social media.

Zwischen Selbstoffenbarung und elterlicher Social-Media-Treuhänderschaft. Wie Eltern mit den digitalen Identitäten ihrer Kinder umgehen

Zusammenfassung

Obwohl Eltern versuchen ihre Privatsphäre zu schützen, offenbaren sie in sozialen Medien oftmals persönliche Informationen ihrer Kinder. Der Beitrag untersucht das «privacy paradox» und die Selbstoffenbarung in sozialen Medien und schlägt das Konzept elterlicher Medientreuhänderschaft als ergänzende theoretische Perspektive vor, um zu verstehen, wie Eltern die digitale Identität ihrer Kinder verwalten. Die theoretischen Überlegungen werden durch Ergebnisse von 46 Tiefeninterviews ergänzt. Sie zeigen, dass sich die Eltern der Verantwortung ihrer Treuhänderschaft kaum bewusst sind und die Folgen ihrer Social Media-Aktivitäten nur mit Einschränkungen abschätzen können. In der Analyse der Interviews lassen sich insgesamt drei unterschiedliche Ansätze elterlicher Medientreuhänderschaft identifizieren: Während (1) einige Eltern versuchen ihre Kinder weitgehend von sozialen Medien abzuschirmen, scheinen (2) andere nur eingeschränkt in der Lage zu sein, angemessen auf Risiken sozialer Medien zu reagieren oder (3) blenden diese weitgehend

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aus. Schliesslich wird mit Blick auf die elterliche Vermittlung von Medienkompetenz deutlich, dass die befragten Eltern keine konsistente Vorstellung davon haben, wie sie ihren Kindern einen achtsamen und verantwortungsvollen Umgang mit sozialen Medien vermitteln können.

Introduction

Living in a world of deep mediatization (Hepp 2016), media users' feelings, thoughts, and daily activities shape the contents of diverse Internet applications including social network sites, picture and video sharing platforms, blogs, and wikis (Walrave, Vanwesenbeeck, and Heirman 2012). Users frequently share personal and intimate information within globally spread communication networks: They usually disclose personal information (e.g. name, address) during registration processes of internet applications (Taddicken 2014; Qian and Scott 2007) and utilize personal and intimate information in social networks to form their online identity (Taddicken 2014; Qiu et al. 2012) as well as gain and maintain social capital (Lo 2010; Tufekci 2008). In this context, the social media behavior of parents of infants, toddlers, and preschoolers is a special case. Since an essential part of parents' everyday routines is concerned with aspects of parenthood, their social media activities not only affect their digital identity, but also passively disclose (personal) information about their children. This mediated parent-child entanglement is at the core of this article that aims to establish a link between parents' online self-disclosure and the challenges they face considering the responsibility for their children's digital identity. It reviews the theoretical framework of online self-disclosure and suggests media trusteeship as an approach to understand and describe parents' social media practices with regard to their children's digital identity. The theoretical considerations are augmented empirically by 46 in-depth interviews, which explore the different approaches of parents' media trusteeship.

Online self-disclosure and the privacy paradox

Like all people, parents disclose personal feelings, thoughts, and actions in all kinds of communicative acts to establish social ties and coordinate with other members of society. Against the background of this societal function (Wheeles and Grotz 1976), self-disclosure and privacy exist in a relation of tension between one another, where individuals need to balance risks and utilities of self-disclosure and privacy (Choi and Bazarova 2015; Dienlin and Metzger 2016; Petronio 2002; Sawyer et al. 2011). However, the conditions of this tension field differ in the context of online communication. In online contexts, users actively «write themselves into being» (boyd 2007, 12) and develop their digital identity through adjusting frequency, intimacy, contextual

broadness, valence and authenticity of their self-disclosure (Niemann 2016). Furthermore, users perceive the situation of disclosure to be anonymous and controllable (Schouten, Valkenburg, and Peter 2007), which leads them to be more willing to share personal information than in offline contexts. Therefore, the Social Web intensifies the causes and consequences of self-disclosure. Users' digital identity does not equal its offline counterpart (Gosling et al. 2011; Marriott and Buchanan 2014). For instance, social media users select photos that praise their physical merits (Siibak 2009) and emphasize positive aspects and emotions of their lives (Qiu et al. 2012). With regard to privacy, the nature of digitalized information intensifies the consequences of self-disclosure: Online content is persistent, searchable, and reproducible over space and time (boyd 2007, 2008; Taddicken, 2014). Therefore, self-disclosure is subject to continuous re-contextualization, which leads to a problematic «context collapse» especially in heterogeneous user groups (Marwick and boyd 2011, Vitak 2012). Self-disclosed information that is intended to stay, e.g., in the context of family and friends, can easily be transferred to other communicative settings, e.g., to colleagues. This situation might occur as accidental self-disclosure by the user himself or herself, but could also happen through the reckless dissemination of confidential content by others (e.g., grandparents, who forward pictures of their grandchildren to their friends). Furthermore, self-disclosed information is potentially searchable for third parties that can reproduce the content in communicative settings that are not intended originally (Taddicken 2014).

Social media users seem to be aware of the risks of self-disclosure and their responsibility regarding disclosed information (Qian and Scott 2007). They also know that their data could be aggregated to digital dossiers and utilized for targeting by social network services and security authorities as well as being the source for data-mining of third-party companies or the object of a potential data or identity theft (Niemann 2016). Consequently, users that worry about self-disclosure risks or that highly appreciate online privacy show a more conscious or less intensive self-disclosure (Chen 2013; Dienlin and Trepte 2015; Krasnova et al. 2009; Krasnova et al. 2010; Nemec Zlatolas et al. 2015; Walrave, Vanwesenbeeck, and Heirman 2012). Nevertheless, a vast body of research indicates a «disconnection between users' desire to protect their privacy and their actual behavior» (Acquisti and Gross 2006, 50–51). This so-called «privacy paradox» describes that users' self-disclosure behavior does not reflect their attitude towards privacy (Acquisti and Gross 2006; Barnes 2006; Taddicken 2014; Tufekci 2008). Arguably, users' perception of privacy risks declines against the perception of the potential benefits of self-disclosure (Ariyachandra and Bertaux 2010; Debatin et al. 2009; Tufekci 2008; Krasnova et al. 2009). For example, Hollenbaugh and Ferris (2014) show that users provide lots of information during the registration processes of social network sites due to the belief that this lets them appear more friendly and likable to others. Furthermore, users that generally trust social

media are more likely to disclose personal information (Lin and Liu 2012). Finally, the possibility of being able to countermeasure privacy risks technically through restrictive privacy settings might give users a false sense of security (Brandimarte, Acquisti, and Loewenstein 2013). While privacy concerns result in more restrictive privacy settings (Acquisti and Gross 2006; Tufekci 2008), they do not affect users' self-disclosure (Christofides, Muise, and Desmarais 2012; Dienlin and Metzger 2016).

Parental media trusteeship and the disclosure of child-related information

In contrast to users without children, parents' social media behavior is characterized by the duality of being responsible for their own and their children's digital identity. While extensive research corpus already deals with people's personal social media behavior, taking up the trusteeship concept helps to theoretically understand parents' responsibility for the digital identity of their children. Originated in socio-economic, political, and legal literature, the trusteeship concept deals with the idea of a «relationship in which a natural person or a legal person is responsible for the general well-being of one or more persons who are deemed to be incapable of directing their own affairs» (Bain 2016, 61). Following this consideration, parental media trusteeship describes a state, where parents take responsibility for their children's media-related affairs. It includes the management of their children's digital identity and associated possessions (such as image rights), and all media-related activities parents undertake on behalf of their children (e.g., setting up a social media profile). Moreover, parents' duty as their children's media trustee is «to preserve and enhance the value of the assets under his control and to balance fairly the various claims to the returns which these assets generate» (Kay and Silberston 1995, 92). It includes parents' explicit socialization mandate to impart to their children the skills that enable them to participate in a mediatized society. Furthermore, analogous to processes of parental mediation (Shin and Li 2017), parents try to foster possible positive outcomes of their social media activities for their children and aim to moderate negative effects.

However, the scope of parental media trusteeship is limited by three aspects: Analogous to the trusteeship of statehoods (e.g., Lake and Fariss 2014), parents exercise their authority on a temporal basis until their children can reflect and communicate their media-related needs and actions (Naab 2018).

Additionally, parents' subjective beliefs about the functioning of social media, about the valence of potential media effects, and social media's future development determine the specific nature of their trusteeship. Research indicates that parents reveal information about their children to foster relationships in their social network: Regarding this process, parents maintain the bonding capital of close relationships that depend on high degree of trust, intimacy and emotional support

with closer contact to their family of origin (Belsky and Rovine 1984). Furthermore, parents engage in networks of weak ties, developing bridging social capital to cope with the new challenges they meet in parenthood (Belsky and Rovine 1984; Madge and O'Connor 2006). They develop a network of peers who are in a similar situation and may provide resources that are not available among their close friends and relatives, including «parenting advice, child-care recommendations or commiserations about the difficulties of having an infant» (Bartholomew et al. 2012, 457). Particularly within networks of weak ties, self-disclosure positively affects the perceived quality of these relationships (Kwak, S. Kyoung Choi, and B. Gyou Lee 2014; Wang et al. 2014) and leads to higher support from maintained relationships (K.-T. Lee, Noh, and Koo 2013; Vitak and Ellison 2013). Finally, parents' engagement in social media compensates for a loss of relationships that were based on the conditions of their lives before their parenthood. It is most likely that information about their children is the currency that strengthens the ties within these networks, as it is the shared contextual bond. It might lead to parents to be more willing to disclose their children's personal information despite potential privacy concerns.

Finally, parental media trusteeship finds its limits in the doubtful ability of parents to reflect their role duality with regard social media activities. In this respect, it must be questioned whether new parents, in particular, succeed in distinguishing between themselves and their child when presenting themselves online. Caplan (2013), for example, states «that the mother continues to relate to the child as an extension of herself […] [as if the] child has no real personality of his own» (p. 107). Closely linked to this argument, parents might be unaware of their trusteeship. Both may lead to a passive disclosure of child-related information: since new parents, in particular, are experiencing a dramatic change in their daily routines, a significant portion of their social media activity revolves around challenges concerned with their parenthood (Bartholomew et al. 2012, 455).

In sum, two main arguments can be put forward against each other: On the one hand, the transition to parenthood could lead to further sensitization with regard to the protection of privacy in social media. Following this argument, parents would be aware of their role as trustees of their children's digital identity and therefore limit their social media activities for the benefit of the child. On the other hand, it could be argued that parents are either unaware of their trusteeship role or that, analogous to the privacy paradox, this awareness has no consequences for their actions.

Research Questions and Research Strategy

This paper's previous sections outlined that social media play an essential role in everyday life of young people, including new parents. In contrast to users without children, parents bear a double responsibility in balancing privacy and self-disclosure. They act as trustees of their children's digital identity. However, the findings of research on self-disclosure and the privacy paradox cannot be fully generalized to describe how parents approach their responsibility of media trusteeship. The present study therefore adds an empirical perspective on this issue addressing the following guiding research questions:

- RQ1: What contents do parents share about their children in social media?
- RQ2: What motivates parents to share child-related contents online?
- RQ3: What risks do parents perceive regarding the online communication about their child?
- RQ4: What strategies do parents apply to face perceived privacy risks with regard to child-related contents?
- RQ5: What factors influence parents' media trusteeship?

These questions were inspected by investigating parents' child-related social media behavior on the microscopic level of individual media practices. The study aims to reconstruct the considerations that form parent's attitudes (RQ2 and RQ3) towards privacy and lead to specific social media behavior (RQ1 and RQ4). It attempts to evaluate parents' awareness of their role as trustees, the sustainability of their trusteeship and potential influence factors that help to distinguish different trusteeship models (RQ5).

Method

Design

The study's procedure focuses on qualitative face-to-face in-depth interviews with 46 selected parents with at least one child aged between zero and ten years old. This approach allows the detailed reconstruction and understanding of parent-specific social media considerations and behavior. A first series of 32 face-to-face interviews was carried out from December 2016 to August 2017. A second series of 14 interviews was conducted from May to July 2018 to deepen the insights gained in the first series of interviews.

Participants

All participants were permanent residents of Germany at the time of the interviews and had at least one child in the age between zero and ten years. This rather wide age range was chosen to consider parents' role development in different stages. Literature indicates that parents' role perception changes substantially, when their children enter elementary school at the age of six (Mowder et al. 1995). A further important break in the child's development can be situated at the time of leaving primary school at the age of 10, when the children's reading ability allows them to access texts independently (Graf 2011). In order to include parents with different social backgrounds and different social media behavior, potential interview partners were recruited via posters and flyers that were displayed on the notice boards of 29 kindergartens in the social service region Augsburg Central in Southern Germany, with a total of 1909 childcare places for children aged one to six years. Furthermore, posters and flyers were distributed in post-natal care courses of seven midwife practices in the same social service region. All posters and flyers contained a summary of the research topic, a call for participation, and contact information (email and telephone). This rather non-invasive procedure was applied for two reasons: First, while kindergartens and midwife practices seem to be good places to contact parents of newborns, infants, and preschoolers, they allowed the contact only via notice board due to privacy reasons. Second, from a research ethics perspective, the immediate environment of participants should be touched as least as possible – especially in the case of children. However, due to this approach, the overall response of 136 replies was rather low. 32 interview partners were selected for the first interview series based on the principle of theoretical saturation. A total of 102 potential interview partners were excluded: 14 persons were excluded as (1) they had no children within the specific age group (eight persons) or (2) they were no permanent resident in Germany (six persons). In further 57 cases, potential interview partners did not respond to our messages or could not realize an interview appointment. Finally, we excluded 31 parents with regard to the already achieved theoretical saturation of the previous interviews. For the second interview series, those 31 parents and 19 parents who could not realize an interview appointment in the first series were contacted again. From these, an interview appointment for the second interview series could be realized in 14 cases.

Procedure and Interview Guidelines

The interviews were conducted at a place of the dialogue partners' choice to ensure their comfort within the interview situation: Three interviews were conducted in a Kindergarten, ten interviews were carried out in a public coffee shop, and 33 conversations have been held at participants' homes. The interviews lasted between 22 and

105 minutes. All sessions were digitally recorded and transcribed. The names of the dialogue partners were replaced by aliases.

Parents' social media postings about children, their personal experience and their behavior concerning these topics were each interview's entry point, since these issues were specified as study topics on our posters and flyers. During conversations, we utilized an interview guideline that based on the mentioned research questions. We further refined the research questions into sub-dimensions and corresponding guiding questions:

Shared Contents (RQ1)
In addition to parent's social media postings about their kids that were utilized as the entry point of our interviews, participants described typical situations that lead them to share child-related content in social media and the response they obtained to their actions. Furthermore, interview partners with children aged five years or above were asked whether their kids perform own postings in social media.

Motivations (RQ2)
Considering parents' motivations, the interviewees were asked to talk about perceived gratifications of child-related social media postings for themselves, their children as well as their audience. In addition to that, the interviewer guideline included the question about whether other parents have different motivations for social media postings.

Risks (RQ3)
With regard to the perceived risks for their social privacy, participants were asked whether they have received negative response to their postings and whether they have perceived losses of control over the flow of their communication. Considering risks for their institutional privacy, the interview guideline encourages participants to report on whether they ever have experienced a loss of control over the further spread of their initial postings or other provider related problems with the protection of personal data. Furthermore, the interviewer asked about perceived threats to the social and institutional privacy of their infants and newborns in general that may have been caused by the interviewees' postings.

Strategies (RQ4)
As previous research suggests that social media users have developed cognitive and behavioral strategies to cope with the privacy risks of social media postings, this study aims to reconstruct these strategies' key elements. Therefore, the interview guideline included questions about participants' current measures of privacy protection and requested their processes of consideration with regard to perceived risks and specific postings.

Influence Factors on Parents' Trusteeship Role (RQ5)
Factors that influence the specific characteristics of parents' media trusteeship were not asked directly in the interviews. Instead, they were reconstructed analytically based on their statements with regard to the dimensions above.

Data Analysis
The interview transcripts were analyzed utilizing inductive category development (Mayring 2000). In this process, we used the dimensions of our interview guideline as an analytical starting point and conducted repeated rounds of coding to develop and refine the categories with each round (Kelle and Kluge 2010). «This method provides direction for the analysis and increases the likely conceptual relevance of the resulting coding scheme to the research questions» (Agosto and Abbas 2017, 353). During the first round of coding, the relevant statements of the participants were identified on the basis of the guide's categories and supplemented by those aspects, which were highlighted as particularly important by the participants during the discussions. The statements collected in this way were assessed in terms of subjective importance, valence, degree of reflection (in the sense of a disclosed rationalization in the statement context) and intrapersonal consistency (degree of contradiction to other statements of the person). Subsequently, the participants worked out argumentative links between their individual statements. This made it possible to reconstruct the central argumentation chains for each interview. In a final analysis step, these chains of argumentation were condensed into essential types of argumentation.

Results
The interviews provided a comprehensive pool of information about parents' social media behavior, their privacy concerns, and their strategies to cope with perceived risks. They provided insights into the mechanisms of parents' media trusteeship associated with their social media behavior. However, although each dialogue partner substantiated the trustee role differently, the following section can only reflect a selection of particular findings in the light of the main argument made in this article. Since parents demonstrated similar argumentative patterns, interviewees' perspectives were summarized to three main types of trusteeship roles that parents tend to take: cyberwall hermits, re-activists, and social media optimists.

Cyber-Wall Hermits

The colloquial term «cyber-wall» refers to a situation of absolute control of digital communication, while the term «hermit» describes a person that withdraws from social interaction. Considering this meaning in the context of parental media trusteeship, it is associated with parents who possess a comprehensive knowledge of privacy issues as well as the technical and social correlations of the Social Web and use this knowledge to shield themselves and their family from any privacy threats that may arise from social media. In addition to technical countermeasures, they intensify their hermitage by minimizing social media use in general. Most of the cyber-wall hermits work in an academic context or are professionally concerned with information technology. Considering their profound knowledge, these parents have developed a rather restrictive approach to social media activities with regard to themselves and her children. They justify this behavior with their belief that

> «once posted, the content lands up at a server located in America. It stays there forever and will be rolled out at some point in the future for whatever reason. I do not know; maybe I am too paranoid» (Patrick)

This need for control leads to a significant inequity between consuming and sharing. While cyber-wall hermits access other users' content with great interest, they disclose only limited information about themselves and their family. Furthermore, some of them invest considerable time and effort to realize electronic data security by themselves as well as to select persons that are allowed to access their data:

> «Although there exists a gallery with numerous digital photos, it is not accessible from a public network. Instead, I have set up my web server with a physical storage unit that I own. The picture gallery is self-programmed and secured with a password that is only known by close relatives – e.g., the kid's grandparents – or close friends. That is under my control» (Caroline).

Considering their trustee role, two aspects seem especially noteworthy: Cyber-wall hermits are aware of the temporal limitation of their responsibility. Regarding their children's future development of social media activities, some of them

> «consider it normal today if my son wants to share information via social networks at some point in the near future» (Pascal).

To promote their childrens' self-determined social media use, cyber-wall hermits try to maintain their restrictions as long as possible. However, they have to admit that their protective measures are critically questioned by school-aged children in particular. Furthermore, although cyber-wall hermits are fully convinced of their approach to social media privacy, they have not yet developed a strategy to pass on their beliefs and responsibilities to their offspring gradually. Although they hope that their children understand the meaning of the restrictions, they are also afraid that their children will test ways to cross the boundaries over time. Therefore, it seems arguable whether they can transform their comprehensive media knowledge into educational measures during situations of parental mediation.

Re-Activists

Different but similar is the case of how the majority of the dialogue partners substantiates a re-activist role of media trusteeship. In contrast to cyber-wall hermits, the parents in this group have no explicit professional reference to the media. Expertise in this group is rather expressed by an adept user knowledge in the area of media use. They share a substantial amount of child-related content via different social media applications. The essential motivation for this is to preserve memorable childhood moments for different audience groups as well as to maintain and further develop their social network. It is particularly important for them to let the immediate family participate in the child's growth. In addition, the disclosure of information about one's own child is unconsciously used to obtain new information oneself (e.g. for advice on illnesses) or to coordinate one's own actions with other parents. In this context, child-related reasons for participation or non-participation are equally cited. Re-activist parents' child-related social media activities strongly revolve around one specific application. While most parents named either Facebook or WhatsApp as their main application, others share child-related content directly on a baby-homepage or blog that they maintain since pregnancy with regard to childhood documentation and socializing with peers. However, the handling of the respective application has made a significant transition over the last years. At the time when parents initially started sharing child-related content, they did not restrict the access to the contents as

> «you have these 'mother feelings' that define you at this moment. This feeling is what I want to share» (Louise).

Furthermore, the openness of personal information about their children helped them to befriend with other parents. Re-activist parents started to reflect problems of data accessibility and loss of control over data only after incidents that occurred to either them or in their circle of acquaintances. E.g., Nadine reported that she limited the access to her homepage with a password after discovering that someone had copied and re-published family photos from a friend's Facebook account. Furthermore, in another instance, she

> «was shocked as I found a picture of my sick child visible for anyone using a regular online search engine. Anyone could have accessed this photo although I posted it in a secured area of a baby-forum» (Nadine).

As an immediate consequence, she quitted her forum membership and demanded deletion of the photo from the search engine operator. Even though each of the re-activist parents outlined several of such cases, they seem unable to combine these pieces of a privacy-puzzle into a whole: Despite their worries about data accessibility and the experienced loss of control, they believe that

> «there isn't much you can do wrong if your child is dressed and you cannot see embarrassing details that are embarrassing in the future» (Martha).

Furthermore, the interviewed parents ensured that they would delete certain publications in later life if their children disagree with them. This reactive perspective on their children's privacy rights exemplarily indicates the main problem of this rather common type of parents' media trusteeship: Children's digital identity is neither actively shaped nor consistently controlled. Instead, parents deploy countermeasures to repair or conceal the damage of possible incidents of trusteeship violations. Not surprisingly, those interviewees that share the re-activist concept of media trusteeship with Nadine have demonstrated only insufficient considerations about how they assign those responsibilities which they currently take care for to their children. Against this background, it is not surprising that parents with older children at the same time report more blatant cases of social media problems and a lack of reference to their own social media actions and those of their children. In addition, an older sibling effect can be observed: While parents of single children or their firstborn reflect more intensively on the consequences of social media use, this is decreasing among younger siblings. In spite of the rapid change in the range of services, the parents concerned refer to the older child as evidence that «everything has been done correctly» (Nadine).

Social Media Optimists

At first glance, the social media optimist-type of privacy trusteeship appears similar to those of re-activist parents. Both groups have no professional relation to media and share a substantial amount of child-related content in the Social Web. Considering their motivation, the optimists focus above all on their own benefit. They consider their child as part of their own life, which they want to express through social media. Consequently, social media optimists seemingly neglect the responsibility for their children's digital identity instead of counter-measuring potential consequences of privacy threats.

> «I believe there are so many children out there, why should my child be affected?» (Manuela)

Although they have personally experienced critical privacy incidents (e.g., unwanted accessibility to her data, loss of control over posted content) and should be aware of at least some privacy risks of social media use, they seem to blind out any privacy concerns due to excessive demand:

> «I do not want to be worried because this can drive you crazy because you cannot completely protect yourself. If you would follow this line of argument consequently, then you would end up not taking any photos at all – and I take many photos. To be quite frank, I do not know whether it is good or bad, but I trust the Messenger. How else should I share photos of my daughter?» (Andrea)

At this point, it may be alternatively argued by following the privacy-calculus model that social media optimistic parents might value their benefits higher than the need to protect their children' s digital identity from privacy risks, describing a willful default of media trusteeship. The finding that parents often withdraw their reasoning to a seemingly future-oriented position supports this argument:

> «I put up a Facebook account for my son because he will definitely grow up with PC, Facebook and so on» (Alexander)

Furthermore, these parents argue that their children should decide later in life on what specific contents should be posted or not and whether existing content should be deleted. However, most of the social media optimistic parents do not seem to be able to substantiate this consideration. Instead, e.g., Andrea points out that

> «I would shout all the things that I have posted in Facebook and WhatsApp across the street. I do not care if people want to hear this. […] Maybe [my daughter] will become a famous actress and would question my decision to share a picture of her sitting in the bathtub, for example. I mean, people will find these things anyway» (Andrea).

Finally, social media optimistic parents' privacy considerations tend to emphasize an online privacy specific biased optimism. Although they have encountered negative privacy incidents, they tend to believe that privacy dangers will not apply to themselves and their children.

Discussion

This paper makes a significant contribution to the analysis of parents' online self-disclosure with regard to the digital identity of their children. The literature review suggested that online self-disclosure is part of people's everyday routines. Particular reference was made to the privacy paradox: Even though people consider the protection of personal data to be important, they nevertheless disclose a considerable amount of personal information about themselves. Taking this consideration into account, it was argued that parents' social media behavior passively shapes children's digital identity, since a significant part of their daily activities is associated with their children. In order to better differentiate the dual role of parents' social media behavior, the article proposed the concept of parental media trusteeship. It was elucidated that parents act as trustees of their children's media-related claims and take care of their digital identity. In the overall view of this paper's theoretical considerations, parents' rather liberal online self-disclosure is contrasted by their privacy concerns and their role as media trustees of their children. While the literature on the privacy paradox suggests that parents' concerns about privacy rarely affect their online behavior, the trusteeship concept substantiates their responsibility for their children's digital identity. The empirical contribution of this article shows

that this dilemma cannot be solved in principle: Parents' media trusteeship roles range from a strongly restrictive use of social media by social media hermits to the liberal behavior of the social media optimists, who appear to largely ignore possible consequences of social media actions for the digital identity of their children. This is also reflected in the type of content shared (RQ1). While social media hermits try to reveal as little of themselves as possible, social media optimists let a broad audience participate in their activities and thus in the world of their children. These two groups, thus, represent the possible extreme points of child-related social media behavior, whereas most of the surveyed parents position themselves within the third group of re-activists in between.

The motives behind this gradation of social media behavior (RQ2) reflect the dilemma of the private sphere paradox. While the desire for social participation and social self-expression predominates among the social media optimists, the behavior of social media hermits is determined by their desire to protect the private sphere. In this context, interviews with parents who apply a re-activist type of media trusteeship suggest that the step-by-step gradation in behavior is not due to a theoretical weighing of arguments, but to negative practical experiences that parents themselves experience or their environment makes in the sense of a proxy.

Accordingly, clear differences can be observed in the risk perception (RQ3) and coping strategies (RQ4) of the three trustee groups: The risk perception of social media hermits is essentially based on their comprehensive, mostly professional knowledge of the functioning of media. They cope perceived risks with restrictions which, in the following, largely exclude their own practical experience or only make it tangible in their social environment. In contrast, the risk assessment of re-activists is essentially based on negative experiences in their social media practice, which subsequently lead to the introduction of situation-specific behavioral changes. In most cases, however, it must be questioned whether further reflection and rationalization of what has been experienced takes place and leads to a more differentiated social media strategy. The situations described by the interviewed parents rather suggest that the measures taken serve to solve or conceal the specific problem and to prevent the recurrence of this specific event. For example, one's own social media behavior is not fundamentally questioned due to an experienced or observed violation of privacy, but only the activities of the specific provider are reduced or discontinued. The social media optimists, on the other hand, seem either not to perceive existing risks or to appear largely to ignore them. This group focuses on the positive aspects of social media. For the interviewed parents, the (lack of) personal involvement with negative consequences seems to be the frame of reference for their argumentation. A part of these parents, for example, do indeed address the fact that negative social media experiences from their environment are certainly negative, but relativize their significance by referring to the low probability of occurrence for themselves. In the

overall view on risk perceptions, it cannot be reconstructed – at this point – to what extent re-activists are former social media optimists who have been converted to a certain extent through a personal experience in their trusteeship.

In light of the previous arguments, the observed variation in parental media care seems to be mainly due to the interplay of three factors (RQ5): The existing knowledge about the functioning of media, the personal experience of negative consequences, and the children's age. The results are, thus, in line with the existing research on the privacy paradox. With regard to the importance of media care in this context, the results suggest that the perception of media care is essentially determined by the subjective convictions of the parents about the specific benefits or harms of social media activities. What is interesting here, is the low degree of penetration in the rationalization of this responsibility. Almost all parents surveyed stated that the rules they set only apply until their children can decide for themselves. However, none of the three groups seems to think much about teaching their children how to deal adequately with social media. The age of the children is the third influencing factor. However, two aspects have to be separated. On the one hand, the fiduciary relationship between parents and child changes with increasing childhood, since the child can express its wishes and, also, improve its abilities in dealing with media, and thus also social media. Parents with older children in particular point out that their social media behavior and especially restrictions are critically questioned and, if necessary, renegotiated. In contrast, however, most of the parents surveyed equate their children's participation in social media activities with the end of their trusteeship, i.e., the point in time when their children can decide for themselves. This contradiction cannot be resolved from the interviews conducted. Rather, it makes it clear once again that parents are aware of their responsibility, but do not have a consistent strategy for the development of a planned social media education.

Conclusion

There is no question that social media play a central role in the everyday lives of young people. Moreover, one generation is currently experiencing the transition to parenthood, which itself can hardly if at all, remember a time without the Internet. This article thus provides important insights into the interplay between digital media experienced parents and their offspring against the background of parental social media activities.

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Who needs teachers?

Factors associated with learning ICT skills from teachers in a multilevel analysis of the ICILS data

Priscila Berger

Abstract
While great responsibility is placed upon schoolteachers for educating children and adolescents in media and technology, the increasing access to technology offers opportunities for youngsters to develop information and computer technology (ICT) skills informally. Thus, they do not depend solely on the school to develop computer and information literacy (CIL). Conversely, studies confirm that in some countries students report that they have learned specific ICT skills mainly from their teachers. However, little is known about the conditions under which students rely on teachers to develop CIL skills. This study explores the characteristics of students, schools, and countries that are associated with the incidence of learning CIL from teachers. Based on previous studies, a model was developed and tested employing a three-level analysis with data from 14 participant countries of the International Computer and Information Literacy Study (ICILS). The model reveals significant associations with students' socioeconomic conditions, students' self-efficacy in advanced ICT tasks, students' gender and countries' ICT Development Index score. The schools' characteristics do not contribute significantly to the model. Furthermore, implications for the involvement of both students and teachers regarding media education in schools are discussed.

Wer braucht Lehrkräfte? Einflussfaktoren auf die Vermittlung von ICT-Kompetenzen durch Lehrkräfte am Beispiel der ICILS-Daten

Zusammenfassung
Bei der Vermittlung eines kompetenten Umgangs mit Medien und Technologien tragen Lehrkräfte eine grosse Verantwortung. Jedoch bietet die wachsende Verfügbarkeit unterschiedlicher Technologien Jugendlichen die Möglichkeit, Fähigkeiten im Umgang mit Informations- und Computertechnologien (ICT) auch ausserhalb der Schule zu erlernen. Folglich ist die Schule nicht alleine verantwortlich für die Vermittlung von Computer- und Informationskompetenzen (CIL). Dennoch zeigen Forschungsergebnisse, dass Schülerinnen und Schüler in einigen Ländern angeben, dass sie ihre Fähigkeiten im digitalen

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Bereich hauptsächlich von ihren Lehrkräften vermittelt bekommen haben. Unbekannt ist jedoch, welche Faktoren (z.B. Eigenschaften der Schülerinnen und Schüler, der Schulen und Bedingungen in den einzelnen Ländern) dafür verantwortlich sind, dass die Lernenden sich verstärkt auf die Lehrkräfte verlassen. Das Ziel der vorliegenden Studie ist es, diese Faktoren systematisch zu untersuchen. Ausgehend von vorhandenen Studien wird ein Model entwickelt und mittels Mehrebenenanalyse anhand von Daten aus 14 Ländern (alle Teilnehmer der letzten International Computer and Information Literacy Study) getestet. Die Ergebnisse zeigen den signifikanten Einfluss der sozioökonomischen Rahmenbedingungen, der Selbstwirksamkeitserwartung und des Geschlechts der Schülerinnen und Schüler sowie des ICT Development Index. Eigenschaften der Schulen hingegen beeinflussen die Vermittlung der Kompetenzen nicht signifikant. Abschließend werden die vorliegenden Ergebnisse im Hinblick auf das Zusammenwirken von Lehrkräften sowie Schülerinnen und Schülern bei der schulischen Medienerziehung diskutiert.

Introduction

Initiatives in several countries have led to the inclusion of media education in their formal school curricula. Although there are a variety of media education proposals that emphasize specific competencies, most of them agree that pupils must learn how to access and analyse information and how to create and use various forms of media (Buckingham 2010; Baacke 1996; LKM 2015).

In many countries, the availability of information and communication technologies (ICT) in households is widespread. For instance, in Germany, 98% of the youngsters between 12-19 years old that participated in the «JIM Studie» [Youth, Information, Media Study] in 2018 report having a smartphone, a computer/laptop and an internet connection available at home (Feierabend, Rathgeb, and Reuther 2018). This easy access to ICTs offers new possibilities for youngsters to develop some media-related skills autonomously and in their exchanges with family and peers (Claro et al. 2012). However, this informal learning is unlikely to cover all areas of media literacy required to prepare youngsters sufficiently for the challenges of the digitalized world. In consequence, a significant part of the responsibility for this is attributed to schools (Buckingham 2007; Vanderlinde, van Braak, and Hermans 2009; Wilson et al. 2011), and especially to teachers (Brüggemann 2013; Dias-Fonseca and Potter 2016; UNESCO 2008).

Shin and Lwin (2017) argue that due to the expectations placed upon teachers, their roles in youngsters' development of media and technology skills deserve empirical and conceptual investigation. Previous research has indicated that secondary school students recognize teachers as relevant agents in their development of skills in safe internet use (Livingstone et al. 2011; Shin and Lwin 2017), suggesting that the fostering of students' digital protection skills is an area that deserves attention in the

school curriculum. However, it is unclear how the school is perceived as a source of youngsters' ICT skills in other areas. For instance, the area of computer and information literacy (CIL) consists of skills in knowing about and understanding computer use as well as accessing, evaluating, managing, transforming, and creating information (Fraillon et al. 2014). The International Computer and Information Literacy Study (ICILS) pointed out factors associated with students' CIL level, for instance, their socioeconomic status, gender, parental education level, and parental occupation level. However, the mediation of CIL has not yet been discussed, and therefore little is known about which characteristics and circumstances make youngsters count more on the school rather than on other agents or their own autonomous learning, when it comes to developing CIL.

Moreover, the previous results of the ICILS data reinforce that some children have an advantage in developing skills demanded in digital environments because of their greater access to ICTs and through having parents who are experienced with computers and technology (Buckingham 2007). In this sense, media education at school should be an opportunity to alleviate the digital divide among students created by external factors. Knowing under which circumstances youngsters rely more on teachers for the development of diverse media-related skills is useful for schools to adjust their priorities in media education, improve their chances of bridging gaps and meet the students' demands.

While learning ICT from teachers may depend partly on the learner, i.e., on the characteristics of the individual level, it is also to some extent a result of the media education practiced in schools, i.e., the components of the institutional level. Besides, media-related initiatives in education happen in a specific national context, and so the characteristics of a country may shape their implementation and outcomes. Based on this, the present analysis aims to explore the aspects of students, schools, and countries that are associated with the incidence of learning ICT skills from teachers. Therefore, the study applies a secondary analysis of data from 14 countries, which took part in the first ICILS. The study, thus, aims to improve understanding about the circumstances in which teachers' mediation plays a relevant role in youngsters' CIL, and discusses possible implications for the practice of media education in schools.

Influence of different levels on media education and its outcomes

According to Kozma (2003), the process of introducing technology-related innovations in education passes through three different spheres, namely (1) the macro level, which refers to the economic, political, educational, and media context of a region, (2) the meso level, which consists of the processes that happen in the organizational sphere, e.g. schools and institutions involved in media education, and (3) the

micro level, which corresponds to individual agents involved in the media education process, namely teachers, parents, peers, and students. Research has investigated the influence of different aspects in these levels on the implementation of technology for instruction and media education in schools as well as on its outcomes, such as students' ICT competence, self-efficacy, and reported learning.

Micro level

On the micro level, a few studies have presented associations between student characteristics and the role of teachers in media and technology education. Livingstone and colleagues (2011) pointed out that older teenagers as well as those with lower socioeconomic status (SES) tend to receive advice on safe internet use primarily from teachers. Independently from the role of teachers, parental SES was also found to have a positive correlation with students' CIL (Fraillon et al. 2014; Hatlevik et al. 2018). A possible explanation for this finding is that parents with lower educational and occupational levels are less likely to be digitally literate themselves and, therefore, less able to instruct their children in ICT-related matters (Hatlevik et al. 2018). Moreover, youngsters with lower SES tend to have less access to ICT at home, and access to computers and the internet is a relevant factor considered to contribute to youngsters' CIL (Fraillon et al. 2014).

Research also points towards gender as an important aspect associated with the role of teachers in youngsters' ICT self-efficacy. Vekiri (2010) identified that students' perception of receiving support from teachers to learn ICT was more strongly associated with girls' ICT self-efficacy, whereas boys' self-efficacy had a stronger association with parental support. Previous research has also revealed that boys tend to receive more stimuli to develop ICT skills from parents than girls (Vekiri and Chronaki 2008). Thus, girls might rely more on teachers as a source for their CIL development (Vekiri 2010).

In addition to gender, autonomous ICT learning has been found to have a positive influence on students' ICT efficacy (Hatlevik et al. 2018). However, studies have also considered the possibility that students might overestimate their own computer and information skills (Hatlevik et al. 2018; Rohatgi, Scherer, and Hatlevik 2016), perceiving their teachers to have low computer-related competences (Herrero Martínez 2014; Siqueira and Rothberg 2014). Even though associations between students' ICT self-efficacy and receiving ICT instruction from teachers have not been directly tested in previous literature, it is likely that students with high ICT self-efficacy might be critical about their teachers' ICT skills, and, thus, not rely so much on teachers as the primary source of their CIL development.

The associations between ICT use at school and learning CIL from teachers have, to the best of our knowledge, not been investigated yet. It is reasonable to expect that higher learning of ICT from teachers might coincide with more intense use of ICT at school. Nevertheless, studies point to a negative association of ICT use at school with students' overall ICT skills (Claro et al. 2012) or show inconclusive results (Hatlevik et al. 2018). This might be explained by the measure of use: Instead of frequency, some studies suggest adopting the quality of use (Hatlevik et al. 2018; Rohatgi et al. 2016).

Meso level

In addition to the possible influences on the micro level, students' perceived learning of ICT skills from teachers should also be a result of school teaching practices. On the meso level, research has found that the specific characteristics of the school environment, culture and infrastructure influence the extent to which teachers promote education with and about media in their lessons. For instance, positive associations were found with the time available for teachers to prepare classes that integrate media in a meaningful way, support from school principals and colleagues, and teachers' positive attitudes toward media and technology in education (Lorenz, Endberg, and Eickelmann 2016; Wolling and Berger 2018). While some results also point to positive associations with school ICT resources (Petko 2012), other studies did not find significant relationships (Lorenz et al. 2016; Wolling and Berger 2018).

Macro level

When it comes to the macro level, the context in which media education happens shapes its processes. For instance, a country's development level can be expected to affect the conditions for schools to develop media education. Buckingham and colleagues (2006, 9) draw attention to how the relationship between media and education differs depending on a country's context, so that teachers' media education training must take into consideration «cultural and societal differences as teachers in the different countries are not a homogeneous body. Their level of awareness of the importance of media education varies from country to country. Their relations and their use of media in the educational context may differ dramatically». Hence, factors such as the level of a country's technology penetration indicate the access to media technology both on the individual and the institutional levels, which might affect the priority given to the topic and the conditions of media education in schools. In general, a country's socioeconomic conditions will probably affect aspects such as school equipment, teachers' training, and curriculum priorities, which may influence the emphasis given to media in formal education. For instance, the ICILS reports a significant positive correlation between students' mean score in the CIL test and countries'

ICT Development Index score, and a significant negative correlation with countries' computer-student ratio (Frailon et al. 2014). On the other hand, Areepattamannil and Khine (2017) did not find significant results when testing countries' Gross Domestic Product and Gini coefficient of inequality as predictors of students' ICT use for social communication, referring to the data of 20 participant countries in the ICILS 2013 study.

Research question and hypotheses

Based on previous research findings, this study addresses the lack of investigations into learning ICT from teachers by exploring associations with characteristics of students, schools, and countries, as outlined in the following research question:
RQ. To what extent is the incidence of learning CIL from teachers influenced by student, school, and country characteristics?

Based on the reviewed literature, on the micro level four hypotheses are presented below regarding the characteristics of students. Although Livingstone and colleagues (2011) also found associations with age, the ICILS targeted adolescents in the 8th grade or equivalent, therefore the variance in age of the sample is minimal, and consequently not adequate to be part of the model tested in the present study.

H1. Female students report a higher incidence of learning CIL from teachers than male students.
H2. Students with higher socioeconomic status report a lower incidence of learning CIL from teachers than students with lower socioeconomic status.
H3. Students with higher ICT self-efficacy report a lower incidence of learning CIL from teachers than students with lower ICT self-efficacy.
H4. Students who use ICT at school more intensively report a higher incidence of learning CIL from teachers than students who use ICT at school less intensively.

Regarding the meso level, two hypotheses are presented involving the characteristics of schools.

H5. Students who attend schools that place a stronger emphasis on teaching ICT report a higher incidence of learning CIL from teachers than students in schools whose emphasis on teaching ICT is lower.
H6. Students who attend schools that give stronger support to teaching with and about ICT report a higher incidence of learning CIL from teachers than students in schools that do not support teaching with and about ICT.

Finally, one hypothesis refers to aspects of the macro level, i.e., the country level.

H7. Students who live in countries with better socioeconomic conditions report a lower incidence of learning CIL from teachers than students in countries with inferior socioeconomic conditions.

Figure 1 presents the student, school, and country level aspects that are included in the research model, addressing the aforementioned research question and hypotheses.

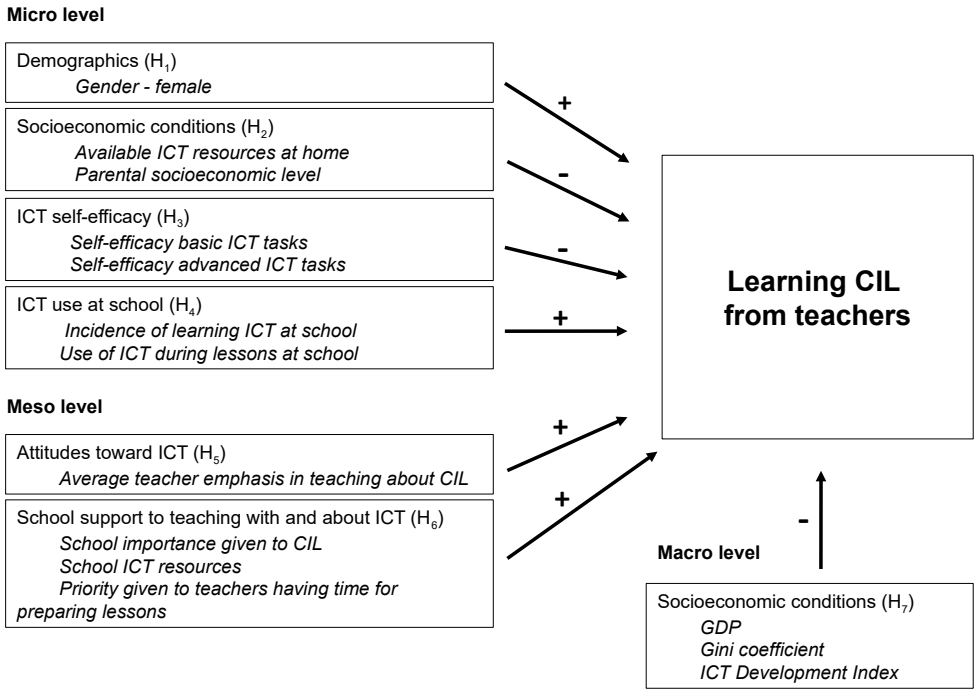

Fig. 1.: Research model.

Method

To investigate the influence of the different levels on youngsters' perceptions of teachers as media educators, large-scale studies are necessary to collect data that cover the different levels involved. The International Computer and Information Literacy Study (ICILS) follows a multilevel approach and includes the three levels we have outlined. The study conducted in 20 countries in 2013 targeted grade 8 or equivalent students to measure their abilities to use computers for gathering, managing, and communicating information. A main advantage of a secondary analysis of data from large-scale studies such as ICILS is the access to an extensive amount of data and its high quality. Data in such studies are usually professionally collected, frequently using quality sampling and weighting methods, and providing clean and well-structured datasets (Cheng and Phillips 2014; Sautter 2014). Thus, high quality existing data can be explored to answer new, upcoming research questions. Even though the ICILS data covers different levels, most previous studies analyzing it have focused on single-level and single-country analyses (e.g., Rohatgi et al. 2016; Scherer, Rohatgi,

and Hatlevik 2017; Scherer and Siddiq 2015; Siddiq, Scherer, and Tondeur 2016). To the best of our knowledge, the incidence of learning ICT from teachers has not yet been investigated either with single or multilevel analyses of ICILS data. The present study employs the latest available ICILS data (2013) to explore this issue. ICILS data (IEA 2018), as well as rich documentation of data collection processes, data operationalization, quality procedures, and instructions for further analyses are all publicly available (Fraillon et al. 2014; Fraillon et al. 2015; Jung and Carstens 2015).

Sample

The ICILS drew representative samples of both teachers and students via systematic random sampling in all countries (Jung and Carstens 2015). School principals and ICT coordinators were additionally surveyed in the participant schools. The ICILS makes available the data of students, teachers, and schools by country. For the present study, student data were combined with school and country data. Given the nature of the data collected in the ICILS, «student and teacher data must not (and cannot) be merged at the level of individuals» (Jung and Carstens 2015, 19). Consequently, aggregated teacher data were included at the school level. The total ICILS student sample consists of over 60,000 pupils from about 3,300 schools. From the total of 20 countries that participated in the ICILS 2013, five were excluded from the present study for not meeting sampling requirements on the student level, besides Canada[1] (Jung and Carstens 2015). Consequently, the sample of this analysis was reduced to 44,143 students (age M = 14.44, SD = .70; 49.30% females), from 2497 schools in 14 countries (Australia, Chile, Czech Republic, Germany, Croatia, South Korea, Lithuania, Norway, Poland, Russia, Slovakia, Slovenia, Thailand, and Turkey).

Measures

The measures included in the present analysis are described below. Some measures were operationalized especially for this study, while most measures were adopted from the ICILS datasets. The scales operationalized in the ICILS were developed using confirmatory factor analysis, Cronbach's alpha (α) coefficient by country, and item response modeling, and were standardized with a mean of 50 and a standard deviation of 10 (Fraillon et al. 2015). In all measures, higher values indicate a higher incidence of the measured phenomenon, unless specified otherwise.

1 Canada did not have a national sample. Instead, only two provinces participated. Therefore, it was excluded from the analysis.

Micro level

Learning CIL from teachers. In the student questionnaire, respondents were asked «Who mainly taught you the following things?» regarding the items (1) communicating over the internet, (2) creating documents for school work, (3) changing computer settings, (4) finding information on the internet, and (5) working in a computer network. Students could choose only one answer for each item. The response options were: «I mainly taught myself», «my teachers», «my family», «my friends», and «I have never learned this». For the present study, the number of «my teachers» was summed to create a composite scale of «student CIL learning from teachers», with values from 0 = student learned none of the five skills primarily from teachers, up to 5 = student learned all the five skills primarily from teachers (M = .98, SD = 1.21).

Gender. Participants indicated whether they were 0 = male or 1 = female (49.30% female).

Parental socioeconomic level. Two variables were summed to represent the parental socioeconomic level: First, parental highest occupational status was measured, which corresponds to the higher score of either parent or of the only available parent according to the International Socioeconomic Index of Occupational Status (ISEI). Second, parental educational status was indicated, which corresponds to the higher educational level of either parent according to the International Standard Classification of Education (ISCED). The variables are positively and significantly correlated (r = .55, p < .001). For this study, these variables were standardized with a mean of 0 and a standard deviation of 1, and were summed to build a composite scale of the parental socioeconomic level (M = .02, SD = 1.75).

Student home ICT resources. For the present study, two items have been summed to build one single variable that measures the number of computers, either desktop or portable, that students have at home. The values have been recoded into a binary scale of 0 = no computers at home, and 1 = at least one computer at home. Further, a variable regarding students' type of internet connection at home was used distinguishing between 0 = students without internet access at home, and 1 = students with any type of internet connection at home. Finally, the variables of computers and internet connection have been summed, resulting in a composite scale (M = 1.87, SD = .43) indicating 0 = students without computers or internet at home, 1 = [2]students with either computers or internet connection at home, and 2 = students with both computers and internet connection at home.

Student ICT self-efficacy. Two separate scales operationalized by Fraillon and colleagues (2015) were used, one corresponding to self-efficacy in advanced ICT tasks (α by country between .64 and .84; M = 49.79; SD = 10.10) and the other in basic ICT

2 Students were asked about the availability only of computers, not other ICTs at home. Therefore, it is possible that by indicating value «1» in the scale, students have internet access but not necessarily a computer available at home. In this case, it is implied that the access to the internet would occur via other devices such as smartphones or tablets.

tasks (α between .75 and .84; *M* = 48.10; *SD* = 11.01). These measures derived from the question «How well can you do each of these tasks on a computer?», with response options 1 = I know how to do this, 2 = I could work out how to do this, and 3 = I do not think I could do this. The advanced tasks correspond to (1) use software to find and get rid of viruses, (2) create a database, (3) build or edit a webpage, (4) change the settings on your computer to improve the way it operates or to fix problems, (5) use a spreadsheet to do calculations, store data, or plot a graph, (6) create a computer program or macro, and (7) set up a computer network. The basic tasks refer to (1) search for and find a file on your computer, (2) edit digital photographs or other graphic images, (3) create or edit documents, (4) search for and find necessary information on the internet, (5) create a multimedia presentation, and (6) upload text, images, or video to an online profile.

Student use of ICT at school. Two separate scales operationalized by Fraillon and colleagues (2015) were adopted, namely the reported incidence of learning ICT at school (α between .70 and .91, *M* = 49.74, *SD* = 9.96), and reported use of ICT during school lessons (α between .71 and .92, *M* = 50.60, *SD* = 10.64). The former derives from the question «At school, have you learned how to do the following tasks?», with response categories 1 = yes or 2 = no for the following items: (1) providing references to internet sources, (2) accessing information with a computer, (3) presenting information for a given audience or purpose with a computer, (4) working out whether to trust information from the internet, (5) deciding what information is relevant to include in school work, (6) organizing information obtained from internet sources, (7) deciding where to look for information about an unfamiliar topic, and (8) looking for different types of digital information on a topic. The latter scale corresponds to the question «At school, how often do you use computers during lessons in the following subjects or subject areas?», with the items (1) mother language, (2) foreign languages, (3) mathematics, (4) sciences, and (5) humanities. For these items, the response options were 1 = never, 2 = in some lessons, 3 = in most lessons, 4 = in every or almost every lesson, and 5 = I don't study this subject.

Meso level

School average emphasis on teaching ICT. The scale operationalized by Fraillon and colleagues (2015) is based on the following question within the teachers' questionnaire: «In your teaching of the reference class in this school year how much emphasis have you given to developing the following ICT-based capabilities in your students», with response categories 1 = strong emphasis, 2 = some emphasis, 3 = little emphasis, and 4 = no emphasis. The items that compose the scale (α between .94 and .99, *M* = 49.16, *SD* = 10.25) are: (1) accessing information efficiently, (2) evaluating the relevance of digital information, (3) displaying information for a given audience/purpose, (4) evaluating the credibility of digital information, (5) validating the accuracy

of digital information, (6) sharing digital information with others, (7) using computer software to construct digital work products, (8) evaluating their approach to information searches, (9) providing digital feedback on the work of others, (10) exploring a range of digital resources when searching for information, (11) providing references for digital information sources, and (12) understanding the consequences of making information publically available online. To aggregate teachers' data to the school level, averages of this scale were calculated per school and incorporated as a characteristic of the school in which students are enrolled (2nd level). The number of participant teachers per school varied between 1 and 32 (M = 12.68; SD = 3.54).

School importance given to CIL. The scale (α between .62 and .91, M = 52.35, SD = 8.86) operationalized by Fraillon and colleagues (2015) stems from this question in the principal's questionnaire: «In your opinion, how important is the use of ICT in this school for each of the following outcomes of education», with response categories 1 = very important, 2 = somewhat important and 3 = not important. The items that form the scale are: (1) using ICT for facilitating students' responsibility for their own learning, (2) using ICT to augment and improve students' learning, (3) developing students' understanding and skills relating to safe and appropriate use of ICT, and (4) developing students' proficiency in accessing and using information. In the present analysis, this variable is treated as a characteristic of the school in which students are enrolled (2nd level).

School ICT resources. The scale operationalized by Fraillon and colleagues (2015) is based on this request in the ICT coordinator's questionnaire: «For each of the following technology resources please indicate their availability for teaching and/or learning». Respondents were asked to indicate either 1 = available or 2 = not available for the following items, which formed the scale (α between .49 and .72, M = 47.82, SD = 10.62): (1) interactive digital learning resources, (2) tutorial software, (3) digital learning games, (4) multimedia production tools, (5) data logging and monitoring tools, (6) simulations and modeling software, (7) graphing or drawing software, (8) space on a school network for students to store their work, and (9) a school intranet with applications and workspaces for students to use. In the present analysis, this variable is treated as a characteristic of the school in which students are enrolled (2nd level).

School priority on time for teachers to prepare lessons. Principals were asked «At your school, what priority is given to the following ways of facilitating the use of ICT in teaching and learning», with possible responses «high priority», «medium priority», «low priority» and «not a priority». This variable refers to the item «providing more time for teachers to prepare lessons in which ICT is used». For the present analysis, low priority and not a priority were assigned a value of 0, and medium and high priority were assigned a value of 1 (76.85% = 1). It is incorporated in the data as a characteristic of the school in which students are enrolled (2nd level).

Macro level

Country demographics. On the country level, the following indicators were adopted as characteristics of the country where students live (3rd level): (1) Gross Domestic Product – GDP per capita, (2) Gini coefficient of inequality, for which a higher coefficient corresponds to a higher level of social inequality, and (3) ICT Development Index - IDI score, for which a higher score corresponds to a higher level of access to technology. In the present analysis, the values of these measures were standardized with a mean of 0 and a standard deviation of 1.

Analysis

To answer the research question and test the previously stated hypotheses, a multilevel analysis was conducted. Initially, a model without predictor level was developed to verify the proportion of variance within the outcome due to between-student, between-school, and between-country differences. Subsequently, predictor variables were inserted hierarchically in the model, starting with the variables of the student level and finishing with the country level. In the process, only variables that showed a significant effect ($p < .05$) were maintained in further steps of the model.

Findings

Variation partition coefficients (VPC)[3] indicate that in terms of learning ICT from teachers, 10% of the variance in the sample can be attributed to differences between schools, 12% of the variance to differences between countries, and 78% of the variance to differences between students. Although VPC statistics show that there is a degree of clustering in the data, the majority of the variation in students' learning ICT from teachers lies at the student level.

Table 1 presents the results of the three-level hierarchical modeling. Findings show that on the student level, students with more ICT resources at home ($B = -.27$, $SE = .02$, $p < .001$), and whose parents have a higher socioeconomic level ($B = -.07$, $SE = .003$, $p < .001$) report a significantly lower incidence of learning CIL from teachers. In addition to this, self-efficacy in advanced ICT tasks ($B = -.02$, $SE = .001$, $p < .001$) also predicted the incidence of learning CIL from teachers significantly and negatively. On the other hand, a positive and significant association has been found with incidence of learning ICT at school ($B = .02$, $SE = .001$, $p < .001$). Furthermore, female students indicate more learning of CIL from teachers than male students with equivalent characteristics ($B = .11$, $SE = .01$, $p < .001$). Although significant associations

3 Calculation VPC (Leckie 2013): VPC schools = variance between schools (.14)/total variance (1.45); VPC countries = variance between countries (.17)/total variance (1.45); VPC individual = variance between student (1.14)/total variance (1.45).

were found with self-efficacy in basic tasks (B = -.007, SE = .001, p < .001) and with use of ICT at school (B = .004, SE = .001, p < .001), these predictors contributed very little to the explained variance (less than 0.03%), and for this reason, were dropped in the subsequent steps of the model.

On the school level, only average emphasis on developing students' ICT skills delivered a significant association (B = .005, SE = .002, p < .05). However, as its contribution to the explained variance was minor (less than 0.03%), it has been dropped in the final model. Finally, on the country level, a significant negative association has been found with the ICT Development Index score (B = -.18, SE = .08, p < .05) – i.e., students in countries with a more developed ICT penetration report learning less CIL from teachers.

Discussion

This study aimed to investigate what student, school and country characteristics are associated with the incidence of learning CIL from teachers, as reported by participants of 14 countries in the ICILS 2013. Based on the results of previous studies, hypotheses were stated concerning the influence of aspects on the micro, meso and macro levels of analysis.

On the micro level, i.e., the student level, the first hypothesis was confirmed, since findings indicate that female students reported a higher incidence of CIL learning from teachers than male students. As discussed previously, teacher support for learning ICT has a stronger effect on girls' ICT self-efficacy than on boys' (Vekiri 2010). Interestingly, the ICILS reports that girls on average scored better in the CIL test than boys but showed lower confidence in their advanced ICT skills in comparison to male students (Fraillon et al. 2014). A similar phenomenon is observed in the research about gender and STEM education, in which the most critical point of gender difference lies in the self-confidence in these fields (Rittmayer and Beier 2009) rather than in the performance (Hyde and Mertz 2009). Literature about the gender gap in STEM careers recommends teachers to invest in building students' confidence in the topics related to the field, and to be aware that this might be particularly critical for female students (Kosuch 2010). Such a recommendation can also be applied to the technical aspects involved in media education.

	Model 0	Model 1 *B*(*SE*)	Model 2 *B*(*SE*)	Model 3 *B*(*SE*)
Intercept	.95	1.31	1.10	1.34
Variance within schools	1.14	1.07	1.08	1.07
Variance between schools	.14	.10	.10	.10
Variance between countries	.17	.10	.10	.08
Explained variance#		12%	12%	14%
Student level				
Gender		.13** (.01)	.11** (.01)	.11** (.01)
Parental socioeconomic level		-.07** (.003)	-.07** (.004)	-.07** (.004)
Home ICT resources		-.26** (.02)	-.27** (.02)	-.27** (.02)
Self-efficacy advanced tasks		-.01** (.001)	-.02** (.001)	-.02** (.001)
Self-efficacy basic tasks		-.007** (.001)	----------	----------
Learning ICT at school		.02** (.001)	.02** (.001)	.02** (.001)
Use of ICT at school		.004** (.001)	----------	----------
School level				
Average emphasis on teaching CIL			.005* (.002)	----------
School importance of CIL			n.s.a	----------
School ICT resources			n.s.a	----------
Time for teachers to prepare lessons			n.s.a	----------
Country level				
GDP				n.s.a
Gini				n.s.a
IDI				-.18* (.08)

Tab. 1.: Linear hierarchical modeling analysis of learning CIL from a teacher.[4]

Second, a negative association between students' socioeconomic status and their learning of CIL from teachers was hypothesized and can be confirmed by the present analyses. This finding reinforces the view that school is probably the space with most potential to generate equality so that youngsters, independently of their socioeconomic background, can develop sufficient competencies to function adequately in the digitalized society.

4 Notes: * = p <.05; ** = p <.001; a = predictors were not significant when inserted individually in the stepwise process. The figures displayed correspond to model versions that exclude nonsignificant predictors. Excluded predictors are indicated with «----------». # Calculation explained variance (Leckie 2013): Total variance model 0 = 1.14 + .14 + .17= 1.45; model 1 = 1.07 + .10 + .10 = 1.27; model 2 = 1.08 + .10 + .10 = 1.28; model 3 = 1.07 + .10 + .08 = 1.25. Explained variance model 1 = (1.27 – 1.45)/1.45; model 2 = (1.28 – 1.45)/1.45; model 3 = (1.25 – 1.45)/1.45.

The third hypothesis assumed a negative association between students' self-efficacy in ICT tasks with their incidence of learning CIL from teachers. The results confirm this assumption, as students with higher self-efficacy in advanced ICT tasks reported less CIL learning from teachers. The relationship was weaker for self-efficacy in basic tasks than for self-efficacy in advanced tasks, but still in line with the hypothesis. On the one hand, this finding may indicate that when students are very confident about their ICT skills, especially more complex ones, they might dismiss the teacher as a source of CIL development. From another perspective, students who had the opportunity to develop ICT skills by other means or with other agents do not recognize the teacher as the primary contributory agent to their CIL. However, the teacher might still be an agent that reinforces and further develops the skills that students already have. Furthermore, students highly skilled in ICT can allow the classroom to be turned into a space of exchange, where teachers and students develop their skills together through peer-peer and student-teacher projects (Jageer Singh, Raja Harun, and Fareed 2013). Thus, media and technology education can still be a part of the school, even when teachers do not feel completely capable of the topic (Ramírez-García and González-Fernández 2016; Roig-Vila, Mengual-Andrés, and Quinto-Medrano 2015; Siqueira and Rothberg 2014), in such a way that the knowledge and experiences of students are actively used and valued in class (Freire 2011).

The positive associations found with reported learning of CIL at schools and with the use of ICT at school are in line with the fourth hypothesis, although the fact that use of ICT at school delivered a minimal effect suggests that the sheer integration of technology in class may be a fundamental condition for teaching about ICT, but does not guarantee the learning of CIL. When ICT is employed in class to achieve the goals of other school subjects, students can develop ICT skills as a side effect, at best. Therefore, it might be necessary to plan opportunities in the school curricula in which ICT skills are learning goals rather than side effects.

On the school level (meso level), it was expected that the teachers' emphasis on fostering students' CIL would reflect positively on the incidence of CIL learning from teachers reported by students. Even though a positive association was found with average teachers' emphasis (in line with hypothesis 5), its contribution to the explained variance was minimal. This may be a consequence of the nature of ICILS data, which make it impossible to assign teachers' data directly to students since there is no guarantee that participant teachers taught participant students of the same school (Jung and Carstens 2015). Therefore, only school averages of teachers' emphasis on teaching CIL were taken, which hinders a more objective test of the influence of teachers' attitudes and practices.

The sixth hypothesis regarding the support that the school gives to teaching with and about ICT was rejected, since no significant results were found. Although the results of previous studies identified a positive influence of school support on

teachers' implementation of media use and media literacy initiatives, this is not necessarily reflected in the perception of students learning CIL from teachers. This learning seems to be a matter of students identifying an opportunity to fill a demand that they do not have the chance to fill elsewhere. Therefore, schools should offer quality media education but be aware that the demand among students may vary.

Finally, the last hypothesis presupposed that students in countries with better socioeconomic conditions would report a lower incidence of learning CIL from teachers. As it was only countries' ICT Development Index score that delivered a significant negative association, the hypothesis is partially confirmed. It is noticeable that greater access to ICT, both on the individual and on the country level, was negatively associated with the incidence of learning CIL from teachers. Thus, in regions where the access to ICT is limited, the relevance of the teacher and the school in fostering ICT skills becomes more critical.

In summary, students' backgrounds offer uneven opportunities to develop CIL, and so the level of opportunity they identify to learn ICT skills at school also varies. Consequently, teachers need to ensure they meet the demands of those students who rely on the school to learn CIL, and thus help to alleviate the digital divide, as well as involving the ones who do not perceive the school as a fundamental source of ICT learning. Regarding the latter group, it is pertinent to consider what Buckingham (2007) calls «the new digital divide» – when the media education offered at school is not compatible with students' media experience outside the school. To overcome the new digital divide, schools need to become better acquainted with their students' media habits and develop approaches that relate to their media experiences and gratifications, while giving them the opportunity to employ skills they already have. National representative studies into youngsters' media behavior, such as the JIM (Feierabend, Rathgeb, and Reuther 2018) in Germany and the MIKE (Genner et al. 2017) in Switzerland, might be a good starting point for schools to evaluate their students' media profiles and demands.

Limitations and future studies

This analysis could not identify aspects on the school level that predict students' learning of CIL from teachers significantly. Nevertheless, instead of denying the role that school characteristics may play, further analyses should be conducted to explore it in more depth. For instance, future studies should collect data from teachers and students in a way that enables them to be merged at the individual level. Path analyses may then help to identify possible indirect effects of school aspects on students' perceptions of learning ICT skills from teachers.

As a secondary data analysis, the research model of this study was limited to the measures available in the datasets. Future studies should extend the measure of the incidence of learning media literacy from teachers by including further skills, for example, safe internet use, and critical evaluation of media content. The ownership of and access to ICT should be measured in greater detail, i.e., to also include smartphones and tablets, among other devices. Moreover, when this study was conducted, the latest available data were collected in 2013. Therefore, a future replication of the study with the data from the ICILS 2018 could offer further contributions. Notably, access to ICT at home might have increased considerably in recent years in the countries included in the study. In addition, a future analysis could investigate the associations between students' CIL levels and learning CIL from different agents.

The final model in the analysis was able to explain only 14% of the variance, which shows that the contribution of teachers to youngsters' media and digital literacy is a complex phenomenon to investigate. To gain more understanding of factors that might be associated more specifically with the learning of media competency at school, qualitative studies with students at different school levels might offer constructive contributions.

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Mobile media practices of young people in «safely digital», «enthusiastically digital», and «postdigital» schools

Annekatrin Bock and Felicitas Macgilchrist

Abstract
How do schools today engage with mobile media? Drawing on ethnographically oriented research at German Schools Abroad, this paper teases out three sets of practices regarding young people's mobile media use: «safe», «enthusiastic», and «postdigital». Presenting vignettes from three schools to illustrate each set of practices, the paper demonstrates how students are differently controlled, guided, and given space to shape their worlds through the practices. The paper highlights that these practices exist simultaneously. They enact different (not better or worse) institutional priorities and different (not better or worse) understandings of young people's mobile use. The paper also highlights the tensions when schools aim to control young people's mobile use, arguing that each set of practices undermines itself. It ends by reflecting on the implications for future research and practice if we see increased mobile media use in schools not, as often assumed, as a mark of «progress», «improvement» or «modernity», but instead as emerging from different understandings of school and young people.

Die Medienpraktiken von Jugendlichen in «geschützt-digitalen», «enthusiastisch-digitalen» und «post-digitalen» Schulen

Zusammenfassung
Wie gehen Schulen gegenwärtig mit mobilen Medien um? Ausgehend von ethnografisch orientierter Feldforschung an Deutschen Auslandsschulen, arbeitet der Beitrag drei Muster schulischer Praktiken im Umgang mit der Smartphone-Nutzung von Jugendlichen heraus: «geschützt-digitale», «enthusiastisch-digitale» und «post-digitale» Praktiken. Anhand von Feldforschungsvignetten aus drei Schulen beschreibt der Beitrag die jeweiligen Muster anschaulich, um nachvollziehbar zu zeigen, wie unterschiedlich Schülerinnen und Schüler durch die Praktiken kontrolliert, geregelt oder befähigt werden, ihre Welt im Bildungskontext zu gestalten. Der Beitrag zeigt, dass die beschriebenen Praktiken gleichzeitig existieren. Sie setzen unterschiedliche (nicht bessere oder schlechtere) institutionelle Prioritäten und unterschiedliche (nicht bessere oder schlechtere) Verständnisse der Mediennutzung

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von Jugendlichen um. Der Beitrag macht die Spannungen sichtbar, die entstehen, wenn Schulen die Nutzung mobiler Medien von Kindern und Jugendlichen kontrollieren wollen und argumentiert, dass jedes Muster schulischer Praktiken sich selbst untergräbt. Der Beitrag endet mit einer Reflexion der Implikationen der Studienergebnisse für zukünftige Forschung und schulische Praktiken: Die zunehmende Nutzung mobiler Medien in der Schule ist nicht zwingend als Ausdruck von «Fortschritt», «Verbesserung» oder «Modernisierung» zu sehen, sondern wird vielmehr durch die unterschiedlichen Verständnisse von Schule und jungen Menschen hervorgebracht.

Introduction

Children and adolescents today arguably live in a «mediatized» world, spending their time «in» rather «with» media (Bird 2013; Couldry and Hepp 2017; Deuze, Blank, and Speers 2012). Their engagement with digital technology is, however, far more «varied and often unspectacular» «than the urban myth of digital natives» suggests (Kirschner and van Merriënboer 2013, 171; see also Boyd 2014; Selwyn 2009; Twenge 2018). In this media world, schools – as places where young people spend much of their waking lives – must also decide how to engage with mobile media, and how to encounter these varied and unspectacular media practices. This paper presents findings from ethnographically oriented fieldwork which explored how mobile media are being used in schools today. More specifically, drawing on an understanding of «discourse» as sociomaterial practice, the paper asks which discourses on mobile media are being enacted in schools, i.e. which configuration of sociotechnical imaginaries, infrastructural resources, institutional priorities, power relations, and understandings of the subject and sociality are being (re-)produced.

The paper observes three sets of practices in schools today: «safe», «enthusiastic», and «postdigital». It highlights marked differences among these three sets of practices: Students are differently policed, guided and given space to shape their worlds; they are introduced to entirely different perspectives on the powerful role of mobile media in today's world. After outlining relevant research, the paper sketches its methods and theoretical framing, before presenting the three sets of practices through vignettes from the field. It concludes with two reflections: First, on how each set of practices «backfires» to a certain extent, creating the conditions for its own subversion. Second, on the implications of these practices for popular models of technology integration in schools which posit a «development» from less to more use, or from «substitution» and «augmentation» to «modification» and «redefinition». In line with other ethnographic and critical approaches to education and technology, we argue that more – or more relaxed – use of mobile media in schools is not inherently a sign of progress or improvement. Instead, the findings illustrate how strongly school practices are connected to particular discourses about mobile media, with all the «messy» power relations such discourses entail.

Children and Adolescents using mobile media in and out of school

The increasing digital media uptake by children and adolescents (Ito et al. 2013; O'Mara and Harris 2016; Ólafsson et al. 2014) has been accompanied by a large body of research that examines the rise of children's and adolescents' mobile phone use around the world (Feierabend, Plankenhorn, and Rathgeb 2017; Australia: Johnson and Oliver 2014; or Griffiths and William 2018; Tanzania: Joyce-Gibbons et al. 2018; Turkey: Nuray Zan 2015; or internationally: OECD 2015). More specifically, studies have turned their attention to the role of mobile phones in education (Keengwe, Schnellert, and Jonas 2014). While previous research on children's and adolescents' mobile phone use in education has tended to focus on the quantity of media use or the different uses of media in and out of school, this paper draws attention to the entanglement of practices and institutional setting.

Four contemporary strands of research are of particular interest for this paper: (1) developmental models of how to effectively integrate mobile media into education, (2) effects of mobile phone use in educational settings, (3) advantages/disadvantages of media use in the classroom, and (4) media practices.

1. Much popular writing on educational technology adopts a developmental approach to mobile media. Schools and educators that are hesitant to adopt technologies such as mobile media are criticized and encouraged to be more like those schools and educators that are (note the positively connotated words) «embracing» change, «freeing» themselves from the «constraints» of paper-based learning and achieving «digital normalization» (Lee and Broadie 2016). Well-known models such as SAMR (Puentedura 2012) describe possible uses of mobile media, including substitution, augmentation, modification, and redefinition, where the latter (modification and redefinition) are more positively valued than the former (substitution and augmentation). This literature reverberates on social media and in professional development workshops. It also echoes in research on teaching practices (e.g., McKnight et al. 2016). In the enthusiastic uptake of digital technology, there is little to no critical reflection on institutional contexts, the differing needs of teachers, students, learning, teaching, schools, or the legacies of inequitable educational policy.
2. A long tradition of quantitative research and large scale studies has investigated children's and adolescents' everyday, out-of-school media use (Bos et al. 2014; Feierabend, Plankenhorn, and Rathgeb 2017; Feierabend, Rathgeb, and Reutter 2018). This research is generally interested in the *effects* of mobile phone use in educational settings (Nuray Zan 2015; Griffiths and William 2018) with (quasi)experimental approaches identifying the potential for technology to improve learning outcomes (see for instance Sung, Chang, and Liu 2016; Wu et al. 2012). What these stimulus-response oriented studies cannot address is the complexity and messiness of everyday media practices.

3. Turning more explicitly to the use of media are studies investigating the advantages and disadvantages of mobile phone use in the classroom. These have foregrounded two arguments. First, students are not as enthusiastic about mobile media use in school as is often assumed. In interviews, students express a desire for rules that regulate smartphone use in school, limit the time spent with devices in class, and disconnect personal and school use of apps (Friedrichs-Liesenkötter and Karsch 2018; Livingstone and Sefton-Green 2016). Second, particular schools, while not explicitly encouraging the educational use of mobile media in class, tend to restrict mobile media use and/or set specific rules about where and when «phones can be used». Many educators forbid mobile phones (Katz, Felix, and Gubernick 2014) or feel strongly that mobile phones should not be used in educational contexts, assuming it to be an «inappropriate tool for the classroom» or considering it to be «distracting and harmful» (Thomas and Muñoz 2016). These studies, however, have strongly focused on teachers' and students' *perceptions of, and reflections on, likely usages* in school (Thomas and Muñoz 2016; Joyce-Gibbons et al. 2018; Ott et al. 2018; Friedrichs-Liesenkötter and Karsch 2018), they have not yet aimed to observe actual ongoing media use and practices in school.
4. Most closely related to the approach of this paper are ethnographically informed studies interested in mobile phone practices in learning contexts (Pimmer 2016; O'Mara and Harris 2016). These studies tend not to investigate positive or negative «learning outcomes», but instead stress the complexity and uncertainty of sociotechnical practices in schools (Sims 2018; Breiter, Welling, and Schulz 2012; Wiesemann and Fürtig 2018). They investigate the complex disruptive/reproductive practices, identity work, and governance functions in which mobile media are entangled (Livingstone and Sefton-Green 2016; Selwyn et al. 2018). Studies have explored, for instance, transformations of traditional roles and power relations in formal education (Garcia 2012) or how mobile technologies serve as a cultural resource that young people use for meaning-making or for challenging classroom practices (Ranieri and Bruni 2013; Bock and Probst 2018). These studies have primarily examined schools which enact what we below call «enthusiastically digital» practices. Their findings could thus be interpreted, often against the authors' aims, as supporting the perspective in the first set of studies, cited above, that «more» digital is «better» or at least «inevitable» as schools reform and transform their practices. What is, however, happening in schools which take up digital technology in other ways? Which competing discourses on digital technology are being enacted in schools which are less enthusiastic?

Contributing to this emerging field of ethnographically informed studies, this paper takes an in-depth look at media practices in selected schools in order to explore how divergent discourse on mobile media is being enacted in schools. We pick up various

strands of previous research by orienting our analysis not only to schools' infrastructure and overall approach to technology integration, but also to the way key educational actors imagine young people to «be», their imagined needs, desires and forms of sociality. Moreover, crucially, we orient to schools' institutional priorities.

Theoretical and methodological underpinnings

We look at school as a public space where young people spend much of their waking lives. We focus on «media practices» – not learning – with an understanding of practices in line with practice theories as those routinized types of material, bodily, mental, affective, technological, tactical, social, unbounded, mundane and often inadvertent behavior in which media are entangled in today's sociotechnical everyday (Schatzki 2008). We understand «discourse» not simply as speech and writing, but as systems of signification that include institutions, infrastructure, and other forms of materiality (Wrana and Langer 2007; Laclau and Mouffe 1985). With an approach to «discourse ethnography» or «ethnographic discourse analysis» (Macgilchrist and Van Hout 2011; Krzyżanowski 2011), we are thus interested in observing how discourse is enacted *through* sociomaterial practices, i.e., the norms, common-sense understandings, power relations and ideas of the subject and sociality that emerge when sociotechnical imaginaries are enacted in the school (drawing on, e.g., Jasanoff and Kim 2015; Haraway 1991). Focusing analytical attention on the enacting of discourse through practices enables us to tease out surprising, unexpected or inexplicable «rich points», ruptures and ambivalences in the data (Macgilchrist, Ott, and Langer 2014; Agar 2006).

This paper draws on data generated in two research projects (2016 – 2018), which observed young people's media practices in nine German Schools Abroad (DAS): in Africa, Asia, Europe, North America, and South America. DAS are international schools that orient to German curricula and are part of a network of schools that shares equivalent educational, structures, routines, institutional frames, rules, and agents.[1] An interdisciplinary team of eight researchers collected field data from September to December 2016 and June to December 2017. The fieldwork was comprised of three-week research stays, with one researcher at each school. Each researcher conducted classroom observations, interviewed school leaders, teachers, librarians, and edtech coaches (individuals employed to keep up to date on new educational technology [edtech] developments, and to provide in-service teacher training) and led group discussions with students.

1 For more information on the German Schools Abroad system, and the two research projects, see (Szakács-Behling et al. 2020) and the project blogs: http://digitale-medien-und-deutsche-auslandsschulen.gei.de, http://globaldas.gei.de. These schools are well-resourced schools, partially private and partially state-funded. We draw on these schools in this paper not to make specific argument about German Schools Abroad but to highlight patterns which resonate more broadly with different forms of formal schooling.

We collected, analyzed, and interpreted our data as a team through a focused ethnographic approach. Understanding data collection as an «iterative, recursive and abductive» practice, this orients to the processual character of data interpretation (see also Agar 2006). During fieldwork the team met via digital technologies, constantly reflecting and problematizing the researchers' roles, their positionality and their co-producing role in interpreting the data (Bartlett and Vavrus 2017; Bikker et al. 2017; Burawoy 2003).

> «Thus, comparison was enabled from an early stage of research and continued throughout via critical exploration of moments of surprise – known as 'rich points' (Agar 2006) discussed within the team, allowing for productive possibilities of irritation and disruption.» (Szakács-Behling et al. 2020).

To explore the discourses on mobile media that are being enacted in schools, this paper selects «vignettes» from three focal schools (Mohn and Amann 2006). Although no school could ever coherently enact only one discourse, each school we observed had a tendency towards one discourse. In line with ethnographic and discourse-analytical epistemologies, our goal here is not to describe a typology or identify prototypes, but to present compelling in-depth accounts of situated practices. The vignettes do not aim to support a model or a claim to universal truth. Instead, they aim to be recognizable and to resonate with other schools in other locations.

Vignettes from the case study schools

(1) «Safely digital» practices

Three observations from what we will call the Purple School (pseudonym) illustrate the first set of practices identified in this research. In the first, the school's headteacher explains the school policy of banning mobile phone use during the day; in the second, we collate a series of classroom practices; in the third, students tell us about their subversion of the policy.

In an interview, the headteacher describes the new policy:

> «We had a policy up to last year where they were allowed to use their phones during break time. […] But last year, […] I noticed they weren't talking to each other. They were all on a device; they were all playing games, that was one aspect of it. The other aspect was that sometimes issues that were arising outside of school through social media were coming into the school environment. And they were proliferating around the school community through the mobile phone. Not that the kids were sending things, but that they were showing things on them. And so we decided, no, this has got to be a safe environment for kids and at least there is a zone whereby nothing/ or there is a time of the

> day from 8:15 in the morning until 4:15 in the evening, when they finish, nothing is sent. Nothing comes in. Or they're not aware of it, you know? And that it's a zone, a mobile-free zone or a device-free zone for that time.»

The headteacher reflects on how bullying has changed with the widespread use of mobile phones:

> «And fear is the impact that they have outside of school because you can't control it. And they can be devastated, you know? For children who are particularly vulnerable, you know, to that kind of behavior, they have no respite. There is no time which is not happening to them. When I was growing up, you know, bullying was somebody calling you names, but when you went home that was it, you know? You were safe. Now, there is no respite; there is no time at which you cannot be affected by it. And that to me is very concerning, you know? And it is there, and we have limited control over it outside of the school. But we can control it here. And that's what we say, once it begins to encroach on the school environment, then we will act. And it was/ I expected greater resistance when we introduced that policy.»

In fact, parents were very supportive of the new policy banning mobile phones, and the student council only voiced limited displeasure. The head continues:

> «But, you know, it is one way of us protecting them in here from all of the, I suppose, the unpleasant stuff that happens on social media, you know, that they have or may have to deal with, you know?»

These extracts illustrate the keywords that produce a *discourse of safety, protection, and control*. Students here need a «safe environment», where they can – for a time – have «respite» from social media. They need to be «protected» from «the unpleasant stuff that happens on social media». A «mobile-free zone» or «device-free zone» is the school's response to these perceived needs.

During the fieldwork, this discourse was enacted in classroom practice. We observed, for instance, official posters warning about cyberbullying, and of a project week dedicated to cyberbullying, which included informational events on bullying, and project work designing posters. There were professional development courses for teachers on ensuring well-being for teachers and students, and on dealing with online violence. Moreover, we observed a discussion in the Philosophy class on ethical online behavior and ethical interactions in WhatsApp peer groups. The school-wide policy is enacted in pedagogical choices which prioritize school control, safe zones, and a protective approach to students' (and teachers') perceived needs.

Students, however, unsurprisingly, exhibited behavior which contravened the formalized school policy. They did not simply put their phones away at 8:15 am and retrieve them at 4:15 pm. Instead, they developed hidden ways of using their mobile phones to break the rules. In an informal chat on the way to the interview room, when the interviewer took out her phone to check the time, the students told her

how they smuggle their phones into the school toilets to check WhatsApp and the push notifications from their social media accounts to remain up-to-date on what is happening outside the «safe environment» the school aims to create. As generations of students before them, they use the classic space within the school building (the toilets) to maneuver themselves beyond the school's control; but they update these practices of escaping control to our current media age.

These three sets of observations from the Purple School highlight this particular school's approach to developing and enforcing a school-wide ban on mobile devices during school hours. We believe they will resonate with a broad range of other schools in Germany (and possibly beyond Germany).[2] The school practices enact several dimensions of the discourse of safety, protection, and control:

First, *the school's infrastructure and approach to technology integration*: These schools are likely to have interactive whiteboards and projectors that enable the teachers to continue traditional teaching practices in a digitally assisted teaching scenario. They are less likely to introduce 1:1 models, since requiring each student to have a tablet or notebook would thwart attempts to create a safe, device-free zone.

Second, *the view of young people*: In this scenario, students are seen as vulnerable, at-risk, and in need of protection by adults (see Craft 2011). Since students are thus considered less capable of making decisions about their own mobile media use, teachers, administrators, and school leaders decide what is «good» or «bad» media use (see Sims 2014). Quality peer communication is seen as face-to-face interaction. Losing that face-to-face communication is seen as detrimental to students.

Third, *institutional priorities*: These schools enact an understanding of formal education as protective of young people. It should create a cocoon, a safe environment where students can find respite from pressures outside the school walls. Even if not all students are vulnerable to cyberbullying, the school sees its role as caring for the most vulnerable. It does this by controlling and regulating media use. Schools, in this understanding, are responsible for setting and enforcing coherent school-wide policies regulating media practices. Networked connections to spaces beyond the school boundaries are seen as risky. Mobile devices signal uncontrolled, unfiltered, potentially inappropriate practices. Although not observed at the schools in our fieldwork, there is space here for a related discussion of the role of schools in protecting young people from their exploitation by technology corporations primarily interested in harvesting data (see Watters 2017; Williamson 2018). This «data care» is institutionalized across schools in Germany, with broad awareness of the implications of using Google products for student privacy.

2 Further research that we are currently conducting on media practices in schools supports our assumption that this school is not an isolated instance, but an illustration of how one discourse on mobile devices is enacted in schools. Each school, of course, enacts the discourse in its idiosyncratic way, blending it with other discourses.

Fourth, *ruptures*: The observations demonstrate, however, how the policy «backfires» in practice. Not all students see themselves as vulnerable and in need of protection. They enact themselves as agentic and capable of controlling their own mobile and communicative practices. By finding zones in which they can use prohibited devices privately, they subvert attempts to regulate their online communication.

(2) «Enthusiastically digital» practices

In the second school we present here, the Yellow School, we experienced an atmosphere of enthusiastic support for, and celebration of, the possibilities of using mobile media during the fieldwork. This school has been thinking about introducing novel technology for about the same length of time as the Purple School but has made significantly different decisions about what and how to integrate mobile media into school life. As above, three sets of observations ground our account of «enthusiastically digital» practices. In the first, we summarize teachers' accounts of the advantages of working with new technologies. In the second, we describe three parallel classroom situations. In the third, we report, as above, on students' subversive use of digital technology to achieve their goals.

In interviews, teachers mentioned a host of advantages of working with the new technologies. They particularly enjoyed the new possibilities of sharing work with their colleagues. The school had developed a very open mode of collecting and making available lesson plans across the subjects. They listed the benefits for novel group communication practices, creative and collaborative ways of working together and using mobile phone apps, e.g., a calculator or language apps, as learning tools in the classroom. One teacher stressed the opportunities for digital participation by using mobile media:

> «I see a great opportunity in this. In the availability of the same information, at any time; that everyone can inform themselves on anything and accordingly make an informed decision themselves.»

In these examples, teachers' enthusiasm for mobile media arises from two primary functions of the media: as «tools» for digital education and as «sources» for gaining information.

These priorities enact an *enthusiastically instrumental discourse* (not in a negative sense, but in the sense of technology being instrumental to achieving educational success). Mobile media here are novel «instruments» to help solve a host of pedagogical challenges. Many of the goals reflect the classic aims of progressive educational reform movements, i.e., empowering students, encouraging their independence, facilitating collaboration, critical thinking, creativity, and a love of learning. Mobile media are seen as technological tools to support these pedagogical goals.

Individual teachers had leeway in the Yellow School to decide when and how they wanted to use which (old or new) technology. Most of the classrooms had an interactive whiteboard; each student had a tablet (iPad). We observed, for instance, students working in three German classes. In one, the teacher worked with the blackboard, starting her lesson with a paper-pencil Hangman game. The game was the analogue «opening» for the lessons' exercise that introduced the students to QR-Codes. In the second class, the teacher started the lesson with a quiz and used a shared Google Classroom document to collect the students' answers. In the third class, the teacher explained to the students that they were going to make a news clip with their iPads. Previously, she had asked classes to write a newspaper text. This year, with the iPads, they emulated the TV news instead.

There was no school-wide policy mandating that teachers should use technological tools. Teachers could decide the pedagogical benefit on a case-by-case basis. What becomes clear, however, is that across the fieldwork, it was consistently the teachers who decided which media to use for which specific task. Students were, in a sense, consumers of their teachers' decisions.

Students did, however, also subvert the enthusiastically instrumental orientation to mobile media. They subverted the generally teacher-led approach to media use in classrooms, for instance, by suggesting to teachers how their iPads could be integrated more seamlessly into tasks. In one case, students took out their phones in the history lesson to take photos of what the teacher wrote on the blackboard, though he explicitly asked the students to write down the final remarks of the lesson by hand. This teacher admitted to us in an interview that he also knows that the students secretly forward the photos, and that he is still undecided whether to support these practices or to forbid them. In another case, the students explicitly requested their teacher to upload the assignments and classroom notes to the school cloud. The teacher was initially skeptical about the purchase of doing this but was then pleasantly surprised at how well it worked and how enthusiastically the students used the notes to prepare classroom lessons and tests. A moment that young people may not have parsed as «subversive» but which we noted with interest arose during a group discussion: When asked if anything had changed in the roles of students and teachers since getting individual iPads, students responded:

> Student 1: «Yeah. That's more like, the teacher is more like the helper. And not the one who says it is done this way and that way and the only source of information, because if the teacher says something and nothing else, then you have to believe him. Whether it's right or not because you don't know. But then, when you have iPads, and so on, the teacher is not just your source of information, he helps you and gives you information on the side and he explains that.» (Girl, 13 years old)

> Student2: «Or you can explain things to him if you know more information about it.» (Girl, 13 years old)

Students reflect on how the teacher shifts from being the singular source of information in the classroom to being an «assistant» (a «helper»), facilitating their knowledge acquisition. Moreover, the students begin to explain things to the teacher, i.e., it is clear that they sometimes know more than the teacher does. These shifting roles arguably unsettle the traditional knowledge hierarchies of formal schooling.

As above, these observations highlight one particular school's approach to mobile media, which potentially resonate with other schools today. The practices enact several dimensions of the enthusiastically instrumental discourse:

First, *the school's infrastructure and approach to technology integration*: These schools aim to secure funding in order to ensure that the basic infrastructure (hardware, software, connectivity) is available to all teachers who plan to use it. If possible, these schools employ dedicated IT admins or use decentralized IT support systems. While school leaders often express a desire for all teachers to use mobile media as much as possible, they acknowledge individual differences and the need to respect teachers' autonomy and professionalism. A teacher's motivation, inspiration, and experiences determine the extent to which he or she will use mobile media. Overall, rather than foregrounding anxiety, here, technology is embraced as «exciting and enabling» (Craft 2011, xvii), as a way of improving schooling.

Second, *the view of young people*: This approach acknowledges that young people live «in» media. It aims to connect with young people's everyday lived experience in order to make the most of their interests and informal capacities in learning contexts. Young people are seen as differentially capable of engaging critically, creatively, collaboratively, and independently with mobile media and networked connections beyond the school. Teachers, however, still make decisions *for* young people in schools. The goal is to foster their capacity to use technology as a tool to achieve legitimized ends (e.g., learning, critical thinking, collaboration, media production; not playing).

Third, *institutional priorities*: The priorities of these schools map well to the priorities of educational policy-makers today, and to the vibrant online communities advocating innovative forms of digital education, including such disparate sites as, e.g., EdSurge, global edtech conferences, or Twitter (e.g., #twitterlehrerzimmer, #edtechchat). The institution aims to prioritize the pedagogical ('Primat des Pädagogischen', e.g., KMK 2016, 9) rather than blindly purchase and use digital technology simply because of a «coolness factor» or its status as new technology. Mobile media are, in this sense, folded into pedagogical principles, i.e., teacherly decisions. Teachers and other adults are seen as curators of the media which young people should use during the school day. Since the institution of formal schooling prioritizes learning and educational success, mobile media are primarily used as instruments to achieve

these goals. Although student-led activities are desirable within this enthusiastically instrumental discourse, these tend to be embedded within the institutional requirements of formal education, similar to policy discourses on education in a digital world (KMK 2016, Macgilchrist 2017).

Fourth, *ruptures*: Students generally welcome innovative, productive, motivating use of mobile media, such as collaborative writing and making news clips. Some acknowledge matter-of-factly their subversion of traditional power hierarchies when they explain their superior knowledge of a topic to their teacher. Although the role of teacher-as-facilitator is lauded as a transformative goal of progressive education, it arguably remains quite unusual (and perhaps disorienting) for many teachers today.

(3) «Postdigital» practices

The third set of observations stem from the Blue School, a school which has been using laptops and other mobile devices for almost 20 years. The school is very well-resourced. During the fieldwork, Grades 5 and 6 were working with Surfaces. The school employs several «edtech coaches» who are responsible for keeping up to date on new hardware and software. They inform and support teachers, project work, and students. The observations in this section focus first on young people and adults discussing the ambivalences of mobile media in school; second, on activities we observed during the school day; and third, on a teacher-librarian reflecting on how technology can (or cannot) help transform formal education.

In extensive group discussions, young people talked about how they engage with mobile media during their school day. Their comments were balanced and nuanced. They reflected on how some of them prefer to learn with the laptop or on paper, with one student noting that he finds studying with the laptop strange because it is so easy to get distracted. Another student comments that she used to print out documents from Moodle to study with them, but since they use OneNote more often, and it is very difficult to print, it is easier to work with those materials on the laptop. How one prefers to study, she reflects, is a matter of taste.

Reflecting on the changes to student and teacher roles when students now may know more about a specific issue than teachers if they have accessed information online (see Yellow School above), these students continue the discussion by reflecting on the need to nevertheless align their answers to what the teacher thinks is the right answer, because «the teacher grades you». The students discuss several teachers who insist they are right, despite students' questioning. In these cases, the students take the teacher's position despite their conviction that the information they found online was more accurate than the teacher's position. They also mention one teacher, in Sports Science, who was prompted by the students to do some more research on the topic himself and changed his mind, agreeing that the students had found valuable new information.

The school librarian reflected on the role of education in the post-industrial future. Since so many middle-class jobs are going to be replaced by technology, she says, we need to rethink what school is about:

> «We need to stop making students feel stupid and start making them feel clever. The reverse («das Umgekehrte») of what school has been. [...] Of course, they are digital natives, but they still need a lot of interpersonal skills. They need to know how to use their time sensibly («sinnvoll») and they need to be able to interact humanely («intermenschlich agieren»). [...] And that is, of course, a contradiction, because we do that with technology. We defamiliarize, yes, and somehow find a balance».

In each of these observations, technology is tied up in ambivalences, contradictions, and forms of sociality. Our interview questions asked about «digital» technology and «digital» practices, but the answers invariably folded «the digital» into multi-faceted sociotechnical configurations, far more so than the other schools. Unlike the Purple and Yellow Schools, for the Blue School, the digital is not at the forefront of attention. Instead, these students and librarian are producing what could be called a «*postdigital*» *discourse* on mobile media. The «post» highlights the backgrounding of digital technology in these schools (Jandrić et al. 2019; Macgilchrist 2019; Taffel 2016). Here all sorts of media (mobile devices, apps, clouds, paper, pencils, 3D printers) live alongside one another. «Postdigital schools» do not draw mobile media into the rhetoric of progress, novelty, and innovation.

This postdigital configuration was also enacted in school activities we observed throughout the fieldwork. Young people hand out flyers with the QR code for a podcast they had made for Pink T-Shirt day (on cyberbullying, a topic they had chosen). In the school's Digital Technology Lab, students document their progress on OneNote as they use CAD software to design storage items they then physically build. A class turns off all the lights, projectors, computers in their classroom so that the teacher can read aloud a Christmas story (from his iPad, so he needs no light), creating a warm and cozy auditory experience. Students co-author a story using collaborative writing tools. It is set in the past, and when one student includes a phone call in the story, two fellow students whisper together, check on Wikipedia and then raise their hands to say that phones had not yet been invented in that period. Students in a German class finish their task, the teacher opens one of the students' documents on the interactive whiteboard and reads it aloud. Picking up on one issue from the text, she writes some modal verbs on the blackboard; the class discusses modal verbs for a while. In each of these instances, various technologies from various «ages» are woven together to inform passers-by, craft an object, create an atmosphere, co-create a story, or learn grammar.

What happens to schooling in this postdigital configuration? Innovation is a word often used in relation to technology. We asked teachers in each school what «innovation» meant to them. Whereas in other schools, they usually replied by noting specific technologies, teachers in the Blue school reflected more broadly. One, for instance, said that innovation for him means «first of all a certain amount of thinking otherwise» («Querdenken und Andersdenken»). He compared the school structure, which remains fairly teacher-centered, even in the most innovative of moments, and the 45-minute classes, where a radical change is to move to 90-minute cycles:

> «Yes, of course, we are innovative when it comes to digital media. You get there, at least in the average of what can be done, I think this school is very, very far. But to think school as a whole innovatively, as an overall model in its structures, in its togetherness, in what we actually want, what we actually are, that is where we are still very far from, even abroad.»

The teacher from the cited interview was interested in structural change, and in getting students more involved in their learning. He was excited by transformative models such as in a Swedish school he had heard of, where students no longer have regular subject-specific classes, but work on larger scale projects and seek out the specific knowledge as they need it. Ironically, the school's design lab that won a prize for innovation could rarely be used by students in the higher years. They had no time. They had to fulfill the requirements of the formal curricula.

The schools in which we observed postdigital practices had longer histories of working with digital technology than the protective or enthusiastic schools. Mobile media were no longer new and disruptive, but part of the everyday. Returning to the dimensions noted above:

First, *the school's infrastructure and approach to technology integration*: These schools integrate mobile media into teaching and learning routines and «build» classrooms that are open to mobile media use, for example by connecting different devices, allowing unrestricted WiFi access, and making personnel available as edtech coaches. Different technologies are given equal weight, from pencil to 2-in-1 device; from interactive whiteboard to blackboard.

Second, *the view of young people*: Is more difficult to pin down in this third approach. Some teachers espouse the classic hierarchy of knowledge, whereas other teachers are more likely to take their own learning forward by following up on information that students have found online. Cyberbullying is still an issue that crops up, but students are also given free reign of their mobile devices. There is little policing in classes of what students might be doing on their devices. In turn, students express nuanced reflections on which kind of technology (paper or mobile device) is better for which kinds of tasks. They show a keen awareness of the potential for distraction.

Third, *institutional priorities*: The priority lies on innovative forms of learning, on using appropriate technology (light switches, collaborative tools, podcasts, design labs, chalk) to make learning interesting and meaningful. Students shape, to a certain extent, how they use mobile media throughout their school day.

Fourth, *ruptures*: But precisely herein lies the main rupture we noticed at postdigital schools, highlighted by the teacher above: Innovation stands at the forefront of attention, and innovation can certainly be seen in small changes in these schools, but school structures are not fundamentally transformed. Young people shape some of their own media use throughout the day. However, they also remain firmly positioned within the temporal and informational modes of traditional, formal, legitimized state curricula. These more fundamental transformations can be aided by the ease of using mobile media, but they are largely based on pedagogical/policy/political decisions that are independent of technology.

Concluding thoughts

Exploring how discourses on mobile media are being enacted in schools, this paper has teased out three bundles of school-based mobile media practices. Although no school will enact a single unified approach to mobile media, we observed shared repertoires in each school, i.e., a shared school culture of engaging with mobile media. The paper presents vignettes from three focal schools, suggesting that the practices in these schools are recognizable in other secondary level schools in the German school system, and potentially beyond: (1) «Safely digital» practices enact a discourse of safety, protection, and control. They limit the use of mobile devices to create a safe environment for students. (2) «Enthusiastically digital» practices enact a discourse of innovation and novelty. They integrate new (often mobile) media to support students' creativity, critical thinking, and collaborative communication practices and to achieve teacherly objectives. (3) «Postdigital» practices enact a discourse of techno-ambivalence, backgrounding «the digital», and foregrounding the sociality of schooling and the contradictions of focusing on mobile media as a solution. They use divergent media for divergent purposes, without being too concerned or too enthusiastic about any particular medium (old or new; static or mobile). «Innovation» in postdigital schools does not refer to technology integration, but to fundamentally transforming the institutional structures of formal schooling.

Further research could explore the extent to which these three sets of practices resonate more widely in other schools, paying more attention to the contexts of each school, and the extent to which discourses of risk, creativity, student-centeredness, data care, etc. are circulating and/or have become common-sensical. In addition, to understand more fully how mobile media can be used in schools, e.g., for digital literacy, subject-specific teaching, or project work, we need further research that relates students' out-of-school mobile media practices to in-school practices.

We end this paper with two reflections. First, on how each set of practices provides the «seeds of its own subversion» (Hepburn 1999, 641): The stated goal of a «safely digital» school is to create a safe environment by minimizing mobile media use. Yet students find ways to confound this, such as taking their mobile phones to the toilets. By prohibiting mobile phone use, the school closes the space to openly discuss and reflect on how students can best engage safely with mobile devices. The ostensible goal of «enthusiastically digital» schools is to embrace the transformational pedagogies and possibilities of the digital. Yet teachers remain the decision-makers, deciding which kinds of (mobile) activities students will do, and thus undermining a core goal of transformative pedagogies that students take charge of their own learning. In «postdigital» schools, transformational innovation stalls precisely because mobile media are not drawn into the rhetoric of progress, novelty, and innovation. Schooling is still regulated from the top down and remains fairly teacher-led, fulfilling formalized state curricula. Although technology is no longer seen as a means of overcoming the institutional constraints of schooling, nothing has replaced technology's utopian promise.

Our second reflection turns to the implications of these findings for popular models of integrating technology in schools. Overall, the vignettes support critical arguments about the inability of institutional or teacherly decisions to determine, plan, restrain, or orient young people's mobile media use. The effects of policies on technology use are invariably indeterminate and indeterminable in practice. The difference between a cautious uptake of mobile media is not, as is often assumed (in policy, practice, and scholarship), a developmental step «behind» more widespread or faster uptake of media. Instead, each approach to mobile media enacts a societal discourse on mobile media. The practices exist contemporaneously; they are the enactments of differing (not incremental) discourses.

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