Digital Literacy in Primary School Education – a Question of Belief and Epistemological Awareness Results from the DoProfiL-Study about Students Theoretical and Practical Knowledge and Beliefs towards Inclusive Media Education

Gudrun Marci-Boehncke
Ricarda Trapp

Digitale Medien gehören in Deutschland immer noch nicht selbstverständlich in die institutionalisierte Frühförderung, und das trotz anders lautender Bildungsempfehlungen in den Ländercurricula. Nach verschiedenen Umfragen sehen Eltern den Umgang mit digitalen Medien auch in erster Linie als Familienverantwortung. Das scheint v. a. eine ideologische Position zu sein und nicht auf besseren eigenen kritischen

Kompetenzen zu basieren. Gerade deshalb sind die Bildungseinrichtungen für "Frühpädagogen" für eine erste, auch digitale Medienbildung verantwortlich. Sie müssen ihre Schüler auf eine kritische und konstruktive Medienbildung in Kindergarten und Grundschule vorbereiten, um eine Bildungsdiskriminierung zu vermeiden. Der folgende Artikel beschäftigt sich mit der Ausbildungssituation zur Frühen Bildung in der Lehrerausbildung zum Thema "Germanistik" an der Technischen Universität Dortmund. Im Mittelpunkt stehen Grundschulstudierende, die an Seminaren teilnehmen, die sowohl theoretische Aspekte der Medienkompetenz als auch die Praxis in der Primarstufe fördern. Diese Lehramtsstudierenden wurden im Seminarkontext über ihre Überzeugungen, Einstellungen und ihren Wissenserwerb befragt. Neben einer theorieorientierten Medienkompetenz nach dem Modell der Mediatisierung steht in der Lehre auch der Aspekt der Inklusion im Fokus, der vor allem im Zusammenhang mit a) der aktiven und möglichst umfassenden Teilhabe von Menschen mit Schwierigkeiten an gesellschaftlichen Kommunikationsprozessen und unterschiedlichen Medienangeboten und b) der Gleichwertigkeit unterschiedlicher Medienformate von Bedeutung ist. Das TPACK-Modell (Koehler/Mishra 2005) zur didaktischen Orientierung wurde daher um diese beiden Aspekte der Inklusion und Mediatisierung als Meta-Theorien auf IT-PACK erweitert (Marci-Boehncke 2018). Aufgrund des digitalen Fortschritts mit seinem Charakter als "disruptive Technologie" (Christensen 1997) und der daraus resultierenden neuen Praxeologie argumentieren wir auf der Grundlage einer multimodalen Praxis bei der Entwicklung der allgemeinen Lesekompetenz. Inklusive Medienbildung in diesem Sinne bedeutet eine Erweiterung der Zielgruppen (einschließlich aller Personen, auch derjenigen mit Zugangsproblemen) sowie der multimodalen Texte und

Technologien. Da die Erweiterung mehr als ein quantitatives Add-on ist, sollte sie zu einem qualitativ neuen Ansatz für das Lehren und Lernen von Medienkompetenz führen. Wir werten die Ergebnisse der Prae-/Post-Reflexionen der Studierenden im Rahmen einer Interviewumfrage unseres Aktionsforschungsprojekts aus. Die Studierenden sollten ihre Lernergebnisse und Lehrversuche in der Schule auf der Grundlage des Universal Designs for Learning (Rose/Mayer 2006; Wember 2013) kommentieren und selbst bewerten. Die Ergebnisse zeigen, dass die Studierenden trotz der Stärkung der Theorie in den universitären Studiengängen kaum über andere Kompetenzen als praktische Medienkompetenz nachdenken konnten und dass sie selbst eher pädagogische Überzeugungen in den Blick nehmen und weniger theorieorientierte. Über die Theorie hinaus ist es also zusätzlich ein erkenntnistheoretisches Verständnis, das für die zukünftigen Ausbildungskontexte gestärkt werden muss.

Digital media are rather excluded from institutionalized early education in Germany and this despite correspondingly contrary educational recommendations in the country curricula. According to different surveys, parents see the handling of digital media primarily as a family responsibility. That seems to be an ideological position rather than based on critical competencies. So it is precisely for this reason that educational institutions for "early educational staff" are responsible for an initial, also digital media education. They have to prepare their students for critical and constructive media education in kindergarten and primary school to prevent an "educational gap". The following article deals with the training situation within teachers' education courses related to the subject "German language and literature" at the Technical University of Dortmund. It focuses on primary

schools students, who attend seminars promoting theoretical aspects of media competence as well as practice at school. These students were interviewed about their beliefs, attitudes and knowledge acquisition. In addition to a theory-oriented media competence based on the model of mediatization (Krotz), the courses also focus on the aspect of inclusion, which is particularly important in the context of a) participation in media offerings and b) facilitating social participation through technical-media alternatives. The TPACK model for didactic orientation (Koehler/Mishra 2005) was therefore extended by these two aspects to IT-PACK (Marci-Boehncke 2018). Due to digital progress with its character as a "disruptive technology" (Christensen 1997) and leading to new praxeology we argue based on a multimodal practice in the development of overall reading competences. Inclusive media education in this understanding means an enlargement of the target groups (including all persons, even those with access difficulties) as well as of the multimodal texts and technologies. Being more than a quantitative add-on, the extension should lead to a qualitatively new approach to media literacy teaching and learning. We evaluate the results of the students' prae-/post-reflections within an interview-survey of our action research project. Students should comment on and self-evaluate their learning output and teaching-attempts in school based on the Universal Design for Learning (Rose/Mayer 2006; Wember 2013). The results show that despite the strengthening of theory within the university courses, the students were hardly able to reflect on competencies other than practical media skills and that they themselves are more likely to have educational convictions. So beyond theory it is additionally an epistemological understanding that has to be strengthened for the future courses.

1. The meta-theory of mediatization as the background of current research media competencies

The IEA/ICILS 2013 Study (Fraillon et al. 2014) about teachers media use in school (Bos et al. 2014: 126) shows that (1) compared to international results German students are only in the midfield of the CIL (Computer Information Literacy-Level) and (2), there are still high differences between schools, and it seems that not school but rather the socioeconomic background of the students is responsible for explaining these differences (ibid.: 137). Internationally, the use of digital media in German schools is the lowest (Eickelmann et al. 2014: 204). German teachers do not seem to appreciate the potentials of digital media. Less than their international colleagues they encourage students to use digital resources to find information, to think about the relevance and reliability of digitally found information, to quote adequately or to prepare presentations for defined target-groups (ibid.: 208). For all these tasks, Germany lacs 20–30 percent points behind the international, the OECD as well as the European median. So, if German students find themselves nevertheless in the average of European students, it was not the school and not the teachers who were responsible for that result. German teachers do not value digital media for students individual support, nor for the sustainability of the learned, neither for participation purposes. They are mainly afraid that the use of digital media would encourage students to work with "copy and paste" (Gerick et al. 2014: 179). German teachers beliefs seem to be influential on their use of digital media in class – and it is easy to recognize that the image of the digital media in the eyes of German teachers is not good at all.

If we ask different studies of coming-up teachers media habitus, we can find positive results for the variety of students' personal use of digital media (Marci-Boehncke/Delere 2018; Marci-Boehncke/Wulf 2016; Kommer/Biermann 2012). Although they are intensive media users themselves, they want to protect their students from the digital media world as part of an media-educational habitus (Friedrichs-Liesenkötter

2013, 2015). Blackwell, Lauricella and Wartella (Blackwell et al. 2014) have studied the factors that influence the use of digital media in educational contexts. The attitude of teachers has proved to be the most critical factor, followed by the expectation of self-efficacy. The teaching routine at work is also influential – albeit with a negative sign. Lack of flexibility and adaptability to new teaching and learning challenges also prevents the willingness to engage in digital learning conditions. As a prerequisite for the integration of digital media into the classroom, teachers often demand proof of efficiency.

With this contribution, we would like to make it clear that this demand is only very limitedly appropriate because of social development. Therefore, we will first briefly refer to the meta-theory of the mediatization of Krotz (2007, 2012) and discuss its meaning in the context of the epistemic consciousness of teachers. Regarding our project at the Technical University of Dortmund in the context of the quality offensive of teacher education (DoProfiL), I would like to draw a parallel to the epistemic awareness of teachers for inclusion. Both – mediatization and inclusion – must be acquired by students as theoretical epistemic backgrounds and reflected in their influence on their attitudes to achieve openness for teaching behavior oriented towards current social conditions.

Digitality has changed social action; it can be called a "disruptive technology" (Christensen 2012). It is not only new technology but has fundamentally changed action processes and society at all levels. Without digital literacy, one cannot use digital media sensibly. Just as human communication is always mediated through the media, digital communication also requires media literacy skills. That is based on an "extended text concept" (Kallmeyer et al. 1974). Although media have ever existed for people and their orientation in the world, the systematic scientific reflection on the complex social, institutional and communicative changes that the media are continually bringing about is new and manifests itself in the concept of mediatization (Krotz 2007, 2009).

With Krotz, we understand mediatization as a meta-process that attempts to describe the changes in society in the context of its contemporary mediality. On the one hand, Krotz develops Uri Bronfenbrenner's (1979) ecosystemic approach, which dates back to the 1960s, and on the other hand, he combines it with various communication models.

"Mediatization" means a concept "to understand changing everyday life, culture, and society in the context of media development" (Krotz 2014:72). It is thus something other than "medialization" (Schneider 1998), which merely aims at describing technical developments. According to Krotz, mediatization takes place at three "levels" (cf. Bronfenbrenner 1979):

a) the level of micro social relations (people to people),

b) at the level of institutional ties (students to universities, teachers and learners to schools, etc., for example with a view to a particular school, its mission statement, its equipment, its internal curriculum, its cooperation, proximity to libraries, etc.) and

c) the macro system, under which one can include exosystemic framework conditions.

The perception and evaluation of social framework conditions is a very individual and constructive action that depends on numerous contextual factors. In any case, this includes appropriate specialist knowledge, category knowledge, and self-reflective competences – also about the creation of one's evaluation standards. Teacher training and professional teacher self-image require a specific theory of reinforcement. Characteristic and orienting for the current discourse on professionalization for teachers are mainly competence-theoretical (cf. Baumert/Kunter 2006) and professional biographical (Terhart 2001; Tenorth 2006; Hericks 2006) approaches. Pedagogical, diagnostic and didactic knowledge are often the focus of attention here. Baumert and Kunter (2006: 490) point out, however, that specialist knowledge – even more so than didactic knowledge – is either underestimated or almost overlooked in the discussion about the practical knowledge of teachers.

The research situation is classified as "anything but satisfactory," primarily since it is determined by purely external characteristics such as state certification, degrees or the number of specialist courses attended. Besides, it remains questionable what exactly is meant by scientific competence.

Not yet focussed as in the studies mentioned above on digital media use in schools (Lorenz et al. 2017) – are so-called epistemological beliefs, or background stocks and worldviews, as terminologically referred to as metatheories in this article. According to Baumert and Kunter (2006), the existing studies on this subject are also somewhat "intuitive theories" which are intended to influence thinking, reasoning, information processing, learning and motivation (cf. Köller et al. 2000), i.e., are themselves again more oriented towards pedagogical questions and take less account of the domain-specific scientific background.

Mediatization is such a metatheory. It combines domain-specific and domain-overlapping research results to a theory related to larger contexts of world explanation. Just as globalization and individualization have consequences for educational content and action practices, the consideration of the mediatization thesis suggests a reflection of social conditions for action under the changes of a digital society. On the institutional level of schools, however, Germany is technically still in the last millennium. Financing initiatives for new media equipment remain half-hearted if there is no free network access. Students work offline only in the context of tertiary media (cf. Pross 1972) – quaternary media require possibilities for action in both directions, production and reception. The vast majority of digital activities in schools and universities (cf. Schmid et al. 2017a; Thom et al. 2017; Schmid et al. 2017b) are therefore not digitally convergent and not functioning in all directions. It is still unclear to what extent students do reflect the changing society against the background of theoretical knowledge and plan their lessons with that knowledge. Or do they have a gut feeling when assessing and deciding how to work with the media in class?

2. Inclusion and the impact of teachers' beliefs in teachers' education

Research results similar to those on the influence of attitudes on media use are also available for dealing with inclusion in schools. Here, too, it is clear that profession-specific knowledge in this area still needs to be developed (Charley 2015; forsa 2016, 2017; Gebhardt et al. 2011; Götz et al. 2015; Loreman et al. 2013). Attitudes and experiences of self-efficacy (Gebhardt et al. 2015), as well as profession-specific convictions based on one's professional biography, are decisive.

A metatheory such as that of mediatization is also behind our understanding of inclusion. Since the adoption of the UN Convention on the Rights of Persons with Disabilities (CRPD 2006), the implementation of human rights for participation, self-determination, and equality has been a particular focus for people with disabilities. That reflects a changed understanding of disability. It is understood passively: a person is not disabled (as a characteristic of the person), but the conditions of society create a handicap. Accessibility – in both analog and digital space – is, therefore, a fundamental requirement of inclusive education. Disabled adolescents often associate access to, and the use of media with various barriers that make it difficult for them to participate in learning. At the same time, more and more data proof what unique opportunities are opening up for shaping inclusion processes through digital participation (Mayerle 2015; Schluchter 2015). Reports from school practice make it clear that for this group, as for all young people today, the productive use of various types of media is an integral part of their cultural practice (Bosse 2013). In particular, the limited access to TV and digital media by people with disabilities in the field of learning (ibid.) focuses on the need to create opportunities for participation in schools, starting in early education. With digital media such as tablets, for example (cf. Edler/Rath 2014), students can dictate texts and the technology can help to write with virtually no errors. Read aloud functions make it possible to

compensate for reading difficulties. All learners benefit from the variability of digital teaching and learning media.

3. The DoProfiL-Project and research

To strengthen the general awareness of inclusion and mediatization among students of teaching professions, we have started to promote these contents in several seminars in Dortmund systematically since 2016. The courses take place in cooperation between the faculties of German and of Rehabilitation Sciences. As part of Dortmund's Profile for Inclusion-Oriented Teacher Education (DoProfiL), established and supported in the context of the National Quality Offensive for Teacher Education, two professorships and their teams of staff have launched their empirically supported research and interventions project. Within the framework of jointly responsible certificate courses, we try to confront students several times with the theory backgrounds and at the same time to stimulate their thinking about what they have learned and its meaning through seminar evaluations (Marci-Boehncke/Bosse 2018). The concept comprises common theoretical, media-practical, didactic and metacognitive-empirical building blocks. We agree about the mediatization thesis (Krotz 2007) and an extended text concept (cf. Kallmeyer et al. 1974), a common, broad understanding of inclusion, which is intended to sensitize to participatory difficulties of all kinds and practice team-teaching, based on the principles of the Universal Design of Learning (cf. Rose/Mayer 2006). Media are not only technical aids, but we also understand them as semiotically designed contents and economic structures. That is based on the media concept of Bonfadelli (2002). At the beginning and end of our seminars, we asked for students' beliefs and learning development. The courses had been open to all students of rehabilitation sciences and German studies, and they are also credited for all study regulations there. However, they are obligatory in the context of certificates. Two doctoral theses are being written with a focus on the academic development and evaluation of this offer.

Between October 2016 and July 2017, 24 teacher-training students out of two consecutive semesters participating in two seminar types participated in the study presented here. One seminar dealt with diagnostic methods for recording reading competence and promotion and one course was focusing on digital work in heterogeneous learning environments. Eleven students wanted to acquire the certificate within their German studies with a focus on media and inclusion, thirteen students were only interested in completing their regular teaching degree without attending any other courses with a particular emphasis on digitality or inclusion. Seventeen students were female, seven male. Thirteen students were BA students, eleven Master students. We did not specify our seminars in Dortmund according to teaching positions. Therefore, we found six students from primary education, eight with a focus on special education, four each from the secondary level one, and two students from the secondary level two. 48 were conducted in a pre/post design. Each interview-meeting lasted about 35–40 minutes. There are 480 transcribed (cf. Brinker/Sager 2010; Ayaß 2005) pages supported by leading questions. The study was located in qualitative research and allowed for inquiries (cf. Helfferich 2009; Grünke 2016). The main topics of the study were:

1. Beliefs and attitudes of students towards inclusion and digital media
2. Assessment of students' personal technical media competence

For the time being, we can record the following results:

1. Digital media in inclusive teaching are mainly assistive technologies for the teacher training students surveyed, and they are used to facilitate reception. The term "assistive technologies" is not mentioned once, but the descriptions indicate it. It often becomes apparent that the students of teaching degrees know that digital media offer much more potential in the context of inclusion, but they are not so familiar with it that they can name it. That applies above all to students from the field of special education without participation in the certificate. The following quote is a good example:

"So the tablet … is for me visualization again … but those are the advantages. I don't see how anyone could go into that in more detail. I think for me, at least as far as I know, everything is said, so what I imagine it to be. But I think there are more ways I can't get there right now. But these are the two things. Reading promotion, that one can work well from the optics, that one can also hear things with language programs." #SMB1Post_m_BBK2_oLit_final, 00:15:23-6#

A student who wants to obtain the certificate shows that she is better able to network content and form. She combines technical possibilities with opportunities regarding content. She uses both perceptive and productive functions of digital media in an inclusive context:

"Yes, you can also have texts read to you. Of course, this would be a possibility for the student to read along and get the text read out again practically, or that the text could then be simplified or somehow rewritten more quickly in 'light language' on the tablet. That's one way that would be there." #SMB1Post_w_MSP_mLit_final, 00:21:24-6#

2. Students see a need for practical media exercises. In their opinion, theoretical knowledge does not help them. They are oriented purely to teaching practice, look at their limits in the efficient use of the media and project them as a possible "stimulus overload" on their students. Thus they shift the reasons for their educational media abstinence from themselves as teachers to the students.

"Because I don't have enough experience with it. Of course, you can always talk a lot from theory and talk from the sewing box, and in practice, it is completely different. Of course, I can say now, ok I can find nice texts and provide them for everyone that they can read them well. Of course, there are also different font sizes, perhaps for the visually impaired. But you have to find the texts and then find them quite quickly, for example. Which isn't always possible. And of course, if everything I need is always available. Whether I use many different media when I say, ok, I provide the students with several media and they see what they can best work with, whether it will not be a stimulus overload. Whether they

will be overwhelmed, yes, and probably because I still know too little about the media, is still a problem for me at the moment. #SMB1Prä_w_BBK1_oLit_final, 00:15:45-8#

Concerning the students' media competence, the seminars have a positive effect on the students. That applies not only to actual technical and didactic skills but also about their expectation of "self-efficacy" (Bandura 1977). This aspect is essential for the seminar organization – because this competence is not describable as knowledge or skill, but falls into the range of the attitudes. Weinert (2001) had understood this as part of the overall concept of competence. To operationalize them didactically, however, hardly happens curricular at present.

"Yes, I feel encouraged, also by the practical experience. I didn't have any concrete experience of inclusion, but simply that you can be flexible with it and that you can try it. I'm more interested in it, and I feel like it. I am curious, so I don't know what it's like during my legal clerkship, I don't know, it can be sometimes difficult when attending classes. I've heard from many that it usually goes wrong when you imagine it's great and hope it will be good. But I think that in the first years, that I want to try it out there, I feel like practicing, yes." #SMB1Post_m_BBK2_oLit_final, 00:16:09-7#

4. Results and discussion

The qualitative-empirical evaluation has not yet been completed. But it is already becoming clear:

- Students see the need for media competence primarily as technical-practical. They are concerned with device operation and the use of specific apps.
- The students' expectation of self-efficacy is initially low. The seminar helps to strengthen it. Even if the students are still aware of their technical difficulties afterward, they have more confidence in themselves.

The teaching of meta-theoretical knowledge on mediatization and inclusion might promote the expectation of self-efficacy, but an awareness of this connection is not discernible. Students understand

academic expertise as specialist knowledge of the concrete subject matter of teaching. It thus falls under the term of content knowledge – not epistemological knowledge.

The result applies in principle to all students, regardless of the type of school for which they wish to obtain a teacher training qualification. Students of special education are particularly sensitive to inclusion. However, on the one hand, they see the use of digital media only as assistive technologies, on the other side, they have little technical confidence in themselves. They also have the most significant educational concerns of all teacher-training students about the use of digital media.

- Prospective primary school teachers have very little self-confidence and a high pedagogical skepticism.

- Prospective secondary school teachers (in German: "Sekundarstufe 1"), in particular, are open-minded about their work.

- High school teachers (in German: "Gesamtschule" and "Gymnasium") have the most significant technical confidence.

- The seminars with meta-theory parts do affect posture, but this does not lead to a strengthening of the general theory of consciousness.

- The survey makes it clear that students from several courses of the certificate have a higher academic awareness.

A curricular structure with reliable meta-theory components seems to be useful if one wants to sustainably strengthen academic awareness and self-efficacy expectations in teacher training on inclusion and digital media use. That requires intensive consultation with colleagues.

The curricula of the subjects studied do not yet take such parts of meta-theory into account on a reliable basis. The understanding of media competence remains technical – if one even considers it at all.

5. Limitations

The contribution is initially understood as generating theory. The aim is to establish the broadest possible awareness of digital media literacy among students in the teaching context of early education, which in Germany

also includes primary school education. The training takes place as part of the German language course, where media are not only technically understood but also based on the "extended text concept." The orientation and extension of the TPACK model by the aspects of mediatization and inclusion (IT-PACK) as accompanying meta-theories for reflection for digital-media action will be conveyed. The theoretical considerations on mediation were reflected in their sustainability in the context of a seminar concept through qualitative interviews with students. The self-statements of students are the only way to express their convictions – with all restrictions. They could serve social expectations or avoid critical-reflexive exploration of their motives avoided. The interpretation of the interviews is also based only on the wording. The evaluation is qualitative-hermeneutic.

References

Ayaß, Ruth (2005): Konversationsanalyse, in: Mikos, Lothar/Wegener, Claudia (eds.): Qualitative Medienforschung. Ein Handbuch, Konstanz: UVK, 416–424.

Bandura, Albert (1977): Self-efficacy: Toward a unifying theory of behavioral change, in: Psychological Review, 1977, 84 (2), 191–215.

Baumert, Jürgen/Kunter, Mareike (2006): Stichwort: Professionelle Kompetenz von Lehrkräften, in: Zeitschrift für Erziehungswissenschaft, 2006, 9 (4), 469–520.

Blackwell, Courtney K./Lauricella, Alexis R./Wartella, Ellen (2014): Factors influencing digital technology use in early childhood education, in: Computers & Education, 77, 82–90.

Bonfadelli, Heinz (2002): Medieninhaltsforschung. Grundlagen, Methoden, Anwendungen, Konstanz: UVK.

Bos, Wilfried/Eickelmann, Birgit/Gerick, Julia (2014): Computer- und informationsbezogene Kompetenzen von Schülerinnen und Schülern der 8. Jahrgangsstufe in Deutschland im internationalen Vergleich, in: Bos, Wilfried/Eickelmann, Birgit/Gerick, Julia/Goldhammer, Frank/Schaumburg,

Heike/Schwippert, Knut/Senkbeil, Martin/Schulz-Zander, Renate/Wendt, Heike (eds.): ICILS 2013. Computer- und informationsbezogene Kompetenzen von Schülerinnen und Schülern in der 8. Jahrgangsstufe im internationalen Vergleich, Münster: Waxmann, 113–145.

Bosse, Ingo (2013): Keine Bildung ohne Medien! Perspektiven der Geistigbehindertenpädagogik, in: Teilhabe, 52 (1), 26–32.

Brinker, Klaus/Sager, Sven F. (2010): Linguistische Gesprächsanalyse. Eine Einführung, Berlin: Erich Schmidt Verlag.

Bronfenbrenner, Urie (1979): The Ecology of Human Development: Experiments by Nature and Design, Cambridge, MA: Harvard University Press.

Charley, Carmen Yvette (2015): General Education and Specific Education Teachers' Attitude Towards Inclusion (Walden Dissertations and Doctoral Studies), Minneapolis: Walden University, available from: http://scholarworks.waldenu.edu/dissertations/458 (last access: 22 February 2019).

Christensen, Clayton M. (1997): The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail, Boston, MA: Harvard Business School Press.

CRPD (2006): Convention on the Rights of Persons with Disabilities, New York: UN, available from: https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html (last access: 22 February 2019).

Edler, Cordula/Rath, Matthias (2014): People with Learning Disabilities Using the iPad as a Communication Tool – Conditions and Impact with Regard to e-inclusion, in: Miesenberger, Klaus/Fels, Deborah/Archambault, Dominique/Penaz, Petr/Zagler, Wolfgang (eds.): Computers Helping People with Special Needs. 14th International Conference, ICCHP 2014, Paris, France, July 9–11, 2014, Proceedings, Part I, Wiesbaden: Springer, 177–180.

Eickelmann, Birgit/Schaumburg, Heike/Drossel, Kerstin/Lorenz, Ramona (2014): Schulische Nutzung von neuen Technologien in Deutschland im internationalen Vergleich, in: Bos, Wilfried/Eickelmann, Birgit/Gerick, Julia/ Goldhammer, Frank/Schaumburg, Heike/Schwippert, Knut/Senkbeil, Martin/Schulz-Zander, Renate/Wendt, Heike (eds.): ICILS 2013. Computer- und informationsbezogene Kompetenzen von Schülerinnen und Schülern in der 8. Jahrgangsstufe im internationalen Vergleich, Münster: Waxmann, 197–231, available from: https://www.waxmann.com/fileadmin/media/ zusatztexte/ICILS_2013_Berichtsband.pdf (last access: 22 February 2019).

forsa (2016): Inklusion an Schulen aus Sicht der Lehrerinnen und Lehrer – Meinungen, Einstellungen und Erfahrungen. Ergebnisse einer repräsentativen Lehrerbefragung in Nordrhein-Westfalen. 19.4.2016, Berlin: forsa, available from: http://www.vbe-nrw.de/downloads/PDF Dokumente/Forsa_Inklusion_Ergebnisse.pdf (last access: 22 February 2019).

forsa (2017): Inklusion an Schulen aus Sicht der Lehrerinnen und Lehrer – Meinungen, Einstellungen und Erfahrungen. Ergebnisse einer repräsentativen Lehrerbefragung. Auswertung Nordrhein-Westfalen. 15.5.2017, Berlin: forsa, available from: http://www.vbe-nrw.de/ downloads/Andere Formate/2017_05_22_forsa_Inklusion_Text_NRW.pdf (last access: 22 February 2019).

Fraillon, Julian/Ainley, John/Schulz, Wolfram/Friedman, Tim/Gebhard, Eveline (2014): Preparing for Life in a Digital Age. The IEA International Computer and Information Literacy Study International Report, Cham, Heidelberg, New York, Dordrecht, London: Springer Open, https:// link.springer.com/content/pdf/10.1007%2F978-3-319-14222-7.pdf (last access: 22 February 2019).

Friedrichs-Liesenkötter, Henrike (2013): Der medienerzieherische Habitus angehender ErzieherInnen und Bedingungen für die Ausübung von Medienerziehung in Kindertagesstätten, online unter: https:// www.medienimpulse.at/articles/view/611 (last access: 22 February 2019).

Friedrichs-Liesenkötter, Henrike (2015): Media-educational habitus of future educators in the context of education in day-care-centers, in: Journal of Media Literacy Education, 2015, 7 (1), 18–34.

Gebhardt, Markus/Schwab, Susanne/Nusser, Lena/Hessels, Marco G. P. (2015): Einstellungen und Selbstwirksamkeit von Lehrerinnen und Lehrern zur schulischen Inklusion in Deutschland – eine Analyse mit Daten des Nationalen Bildungspanels Deutschlands (NEPS), in: Empirische Pädagogik, 2011, 29 (2), 211–229.

Gebhardt, Markus/Schwab, Susanne/Reicher, Hannelore/Ellmeier, Barbara/Gmeiner, Sonja/Rossmann, Peter/Gasteiger Klicpera, Barbara (2011): Einstellungen von LehrerInnen zur schulischen Integration von Kindern mit einem sonderpädagogischen Förderbedarf in Österreich, in: Empirische Sonderpädagogik, 2011, 3 (4), 275–290.

Gerick, Julia/Schaumburg, Heike/Kahnert, Julia/Eickelmann, Birgit (2014): Lehr- und Lernbedingungen des Erwerbs computer- und informationsbezogener Kompetenzen in den ICILS-2013-Teilnehmerländern, in: Bos, Wilfried/Eickelmann, Birgit/Gerick, Julia/Goldhammer, Frank/Schaumburg, Heike/Schwippert, Knut/Senkbeil, Martin/Schulz-Zander, Renate/Wendt, Heike (eds.): ICILS 2013. Computer- und informationsbezogene Kompetenzen von Schülerinnen und Schülern in der 8. Jahrgangsstufe im internationalen Vergleich, Münster: Waxmann, 147–196.

Götz, Josefine/Hauenschild, Katrin/Greve, Werner/Hellmers, Sabine (2015): Einstellungen von Lehrerinnen und Lehrern zur inklusiven Grundschule, in: Blömer, Daniel/Lichtblau, Michael/Jüttner, Ann-Kathrin/Koch, Katja/Krüger, Michaela/Werning, Rolf (eds.): Perspektiven auf inklusive Bildung. Gemeinsam anders lehren und lernen (Jahrbuch Grundschulforschung 18), Wiesbaden: VS Verlag für Sozialwissenschaften, 34–39.

Grünke, Matthias (2016): Empirisch-analytische Zugänge, in: Hedderich, Ingeborg/ Biewer, Gottfried/ Hollenweger, Judith/ Markowetz, Reinhard (eds.): Handbuch Inklusion und Sonderpädagogik, Bad Heilbrunn: Verlag Julius Klinkhardt, 60–65.

Helfferich, Cornelia (2009): Die Qualität qualitativer Daten. Manual für die Durchführung qualitativer Interviews, Wiesbaden: Springer.

Hericks, Uwe (2006): Professionalisierung als Entwicklungsaufgabe. Rekonstruktionen zur Berufseingangsphase von Lehrerinnen und Lehrern, Wiesbaden: VS Verlag für Sozialwissenschaften.

Kallmeyer, Werner/Klein, Wolfgang/Meyer-Hermann, Rüdiger (1974): Lektürekolleg zur Textlinguistik, Band 1: Einführung, Königstein/Ts.: Athenäum.

Koehler, Matthew J./Mishra, Punya (2005): What happens when teachers design educational technology? The development of technical pedagogical content knowledge, in: Journal of Educational Computing Research, 2005, 32 (2), 131–152.

Köller, Olaf/Baumert, Jürgen/Neubrand, Johanna (2000): Epistemologische Überzeugungen und Fachverständnis im Mathematik- und Physikunterricht. In Baumert, Jürgen/Bos, Wilfried/Lehmann, Rainer (eds.), TIMSS/III. Dritte Internationale Mathematik- und Naturwissenschaftsstudie – Mathematische und naturwissenschaftliche Bildung am Ende der Schullaufbahn (Band 2: Mathematische und physikalische Kompetenzen am Ende der gymnasialen Oberstufe), Opladen: Leske + Budrich, 229–270.

Kommer, Sven/Biermann, Ralf (2012): Der mediale Habitus von (angehenden) LehrerInnen. Medienbezogene Dispositionen und Medienhandeln von Lehramtsstudierenden, in: Schulz-Zander, Renate (eds.): Qualitätsentwicklung in der Schule und medienpädagogische Professionalisierung, Wiesbaden: VS Verlag für Sozialwissenschaften (Jahrbuch Medienpädagogik, vol. 9), 81–108.

Krotz, Friedrich (2007): Mediatisierung. Fallstudien zum Wandel von Kommunikation, Wiesbaden: VS Verlag für Sozialwissenschaften.

Krotz, Friedrich (2009): Mediatization: A Concept with which to Grasp Media and Societal Change, in: Lundby, Knut (ed.): Mediatization: Concept, Changes, Consequences, Frankfurt/Main-New York: Peter Lang, 21–40.

Krotz, Friedrich (2014). From a Social Worlds Perspective to the Analysis of Mediatized Worlds, in: Kramp, Leif/Carpentier, Nico/Hepp, Andreas/ Tomanić Trivundža, Ilija/Nieminen, Hannu/Kunelius, Risto/Olsson, Tobias/ Sundin, Ebba/Kilborn Richard (eds.): Media Practice and Everyday Agency in Europe. Bremen: edition lumière, 69–82.

Loreman, Tim/Sharma, Umesh/Forlin, Chris (2013): Do Pre-Service teachers Feel Ready to Teach in Inclusive Classrooms? A Four Country Study of Teaching Self-Efficacy, in: Australian Journal of Teacher Education, 2013, 38 (1), 27–44.

Lorenz, Ramona/Endberg, Manuela/Eickelmann, Birgit (2017): Unterrichtliche Nutzung digitaler Medien durch Lehrpersonen in der Sekundarstufe I im Bundesländervergleich und im Trend von 2015–2017, in Lorenz, Ramona/Bos, Wilfried/Endberg, Manuela/Eickelmann, Birgit/ Grafe, Silke/Vahrenhold, Jan (eds.): Schule digital – der Länderindikator 2017. Schulische Medienbildung in der Sekundarstufe I mit besonderem Fokus auf MINT-Fächer im Bundesländervergleich und Trends von 2015 bis 2017, Münster: Waxmann, 84–121.

Marci-Boehncke, Gudrun (2018): Von der integrierten zur inklusiven Medienbildung, in: Theo Hug (Hg.): Medienpädagogik. Herausforderungen für Lernen und Bildung im Medienzeitalter, Innsbruck: Innsbruck University Press, 49–64.

Marci-Boehncke, Gudrun/Bosse, Ingo (2018): Inklusive digitale Medienbildung im (Deutsch-)Unterricht: Ein kooperatives Lehrkonzept von Rehabilitationswissenschaften und Literaturdidaktik, in: Hußmann, Stephan/Welzel, Barbara (eds.): Dortmunder Profil für inklusionsorientierte Lehrerinnen- und Lehrerbildung, Münster: Waxmann, 222–235.

Marci-Boehncke, Gudrun/Delere, Malte (2018): Discussing digital Media and Opening Eyes for constructivist Learning Chances: A Qualitative-Empirical Study about Pre-Service Teachers Beliefs and a Meta-Cognitive Reflection Tool for Education, in: ICERI2018 Proceedings, Sevilla: IATED Academy, 1980–1985.

Marci-Boehncke, Gudrun/Wulf, Corinna (2016): Das Praxissemester in der Lehrerausbildung im Fach Deutsch: Theoretisch – Praktisch – Gut? Ein Blended-Learning Konzept zur Professionalisierung angehender Lehrkräfte im Bereich der Lese- und Medienkompetenzförderung der TU Dortmund, in: Leseräume. Zeitschrift für Literalität in Schule und Forschung, 2016, 3 (3: Deutschlehrer/-in werden, Deutschlehrer/-in sein. Konzepte und Befunde zur Profession und Professionalisierung von Deutschlehrer/-innen), 64-83, online unter: http://leseräume.de/wp-content/uploads/2016/11/lr-2016-1-marci-boehncke_wulf_64-83.pdf (last access: 22 February 2019).

Mayerle, Michael (2015): Woher hat er die Idee? Selbstbestimmte Teilhabe von Menschen mit Lernschwierigkeiten durch Mediennutzung. Abschlussbericht der Begleitforschung im PIKSL-Labor (ZPE-Schriftenreihe 40), Siegen: universi.

Pross, Harry (1972): Medienforschung. Film, Funk, Presse, Fernsehen, Darmstadt: Carl Habel Verlagsbuchhandlung.

Rose, David H./Mayer, Anne (eds.) (2006): A practical reader in Universal Design for Learning, Cambridge, MA: Harvard Education Press.

Schluchter, Jan-René (2015): Medienbildung als Perspektive für Inklusion. Modelle und Reflexionen für die pädagogische Praxis, München: Kopäd.

Schmid, Ulrich/Goertz, Lutz/Behrens, Julia (2017a): Monitor Digitale Bildung. Die Schulen im digitalen Zeitalter, Gütersloh: Bertelsmann Stiftung, online unter: https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/BSt_MDB3_Schulen_web.pdf (last access: 22 February 2019).

Schmid, Ulrich/Goertz, Lutz/Radomski, Sabine/Thom, Sabrina/Behrens, Julia (2017b): Monitor Digitale Bildung. Die Hochschulen im digitalen Zeitalter, Gütersloh: Bertelsmann Stiftung,online unter: https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/DigiMonitor_Hochschulen_final.pdf (last access: 22 February 2019).

Schneider, Irmela (1998): Medialisierung und Ästhetisierung des Alltags, in: Rupp, Gerhard (Hg.): Ästhetik im Prozeß, Opladen: Westdeutscher Verlag, 143–178.

Tenorth, Heinz-Elmar (2006): Professionalität im Lehrerberuf. Ratlosigkeit der Theorie, gelingende Praxis, in: Zeitschrift für Erziehungswissenschaft, 2006, 9 (4), 580–597.

Terhart, Ewald (2001): Lehrerbildung – quo vadis?, in: Zeitschrift für Pädagogik, 2001, 47 (4), 549–558.

Thom, Sabrina/Behrens, Julia/Schmid, Ulrich/Goertz, Lutz (2017): Monitor Digitale Bildung. Digitales Lernen an Grundschulen, Gütersloh: Bertelsmann Stiftung, online unter: https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/BST_DigiMonitor_Grundschulen.pdf (last access: 22 February 2019).

Weinert, Franz E. (2001): Concept of competence: A conceptual clarification, in: Rychen, Dominique S./Salganik, Laura H. (eds.): Defining and selecting key competencies, Ashland, OH: Hogrefe & Huber Publishers, 45–65.

Wember, Franz B. (2013): Herausforderung Inklusion: Ein präventiv orientiertes Modell schulischen Lernens und vier zentrale Bedingungen inklusiver Unterrichtsentwicklung, in: Zeitschrift für Heilpädagogik, 2013, 10, 380–387.