BETWEEN PRIVATE USE AND "VOCATIONAL HABITUS": PRE-SERVICE TEACHERS AND THEIR MEDIA EDUCATIONAL GAP OF BELIEFS

Matthias O. Rath

Ludwigsburg University of Education, Research Center Youth – Media – Education, Germany

Abstract

The international comparative ICILS studies of 2013 and 2018 find a more receptive media use and a more skeptical attitude toward media among German teachers than among their international colleagues. There is a plethora of explanations for this. Based on the results of an ongoing research project at the Ludwigsburg University of Education and the Technical University of Dortmund on the media habitus of pre-service teachers, a reconstruction of this media moralization typical for German teachers is presented. The paper briefly recalls recent international findings on teacher media use and then presents some partial results from a survey of four cohorts since 2019 with different fields of study at Ludwigsburg University of Education. Media use habits, attitudes towards the future professional handling of media in school, and expectations of school media education of pre-service teachers were surveyed. The results reveal a media pedagogical "gap of beliefs." While current pre-service teachers as digital natives show a positive attitude towards media use in their private lives, they adopt attitudes of the currently active generation of teachers concerning their future professional field, as we can prove in current international studies. Finally, the article proposes a reconstruction of these empirical results based on Pierre Bourdieu's "theory of capitals" as well as the concepts of "media habitus", "media pedagogical habitus", and "vocational habitus".

Keywords: *Pre-service Teachers Education, media habitus, media moralization, vocational habitus*

1. INTRODUCTION

Media criticism and fundamental media skepticism seem to be old phenomena. In Plato's writings, we find skepticism towards the medium of writing, and since then, criticism of the media has not ceased. Whether the prohibition of images in Judaism and Islam, the Christian iconoclasm in the early modern period, the critique of the emerging newspapers of the 16th and 17th centuries, the campaigns against children's and youth literature in the 19th century, and in the 20th century the critique of film, radio, and television, and to this day of the computer and digital media offerings in general, the respective new medium has always been the enemy of the old media. However, in some regions and cultural contexts, media criticism seems to run deeper than in others. Dietrich Kerlen (2005, p. 42), for example, speaks of a specific "media moralization" in the German-speaking cultural area, whose roots he locates in Protestantism. In his cultural-historical study *Jugend und Medien in Deutschland* (*Youth and Media in Germany*), he was able to show that, since the 19th century, media have been critically opposed to the written "long text" (Kerlen 2001, p. 246) "book" in the German educational system. Media are considered culturally inferior and pedagogically suspect. International studies such as SITES (Law et al. 2008) or TIMSS and PIRLS (Martin & Mullis 2013; Mullis et al. 2017, 2020) seem to support this thesis of Kerlen's culturally specific media moralization, at least for teachers in Germany about their digital media use and attitudes towards media.

2. DIGITAL MEDIA USE IN GERMAN SCHOOLS

In particular, the *International Computer and Information Literacy Studies*, collected in 2013 (cf. Fraillon et al. 2014) and last updated in 2018 (cf. Fraillon et al. 2019), still show a striking skepticism of German teachers towards the use of digital media in the classroom. German teachers do not highly regard digital media as relevant tools for motivational purposes, individual support, participatory learning, or sustainability in learning. Compared to the average in ICILS 2013, German teachers' agreement with the potential of digital media is around 30 percentage points lower. In addition, the

standard error (SE) for Germany is much broader, which speaks to an inconsistent, less homogenized understanding of the profession. The reservations about media that are specific to Germany have not changed fundamentally, despite intensive efforts in teacher training since 2013 and through a broad public discussion. Even in the 2018 ICILS study, German teachers still lag far behind their international colleagues in some cases when it comes to evaluating positive aspects of the use of digital media, and their judgments continue to be very heterogeneous (Table 1, SE in parentheses).

Positive Statements about ICT Teaching and Learnings	ICILS 2013 average	Germany 2013	ICILS 2018 average	Germany 2018
"Enables Students to Access Better Sources of Information"	96 (0.2)	90 (0.8)	92 (0.3)	88 (1.4)
"Helps Students to Consolidate and Process Information Effectively"	91 (0.3)	65 (1.3)	*	*
"Helps Students Learn to Collaborate With Other Students"	78 (0.4)	50 (1.9)	78 (0.5)	55 (1.8)
"Enables Students to Communicate More Effectively with Others"	68 (0.4)	34 (1.7)	*	*
"Helps Students Develop Greater Interest in Learning"	79 (0.4)	64 (1.3)	91 (0.3)	81 (1.2)
"Help Students work at a Level Appropriate to Their Learning Needs"	80 (0.4)	57 (1.6)	87 (0.4)	69 (1.4)
"Help Students Develop Skills in Planning and Self-Regulating Their Work"	65 (0.4)	48 (1.8)	73 (0.5)	53 (1.7)
"Improve Academic Performance of Students"	68 (0.4)	39 (1.6)	71 (0.5)	35 (1.7)
"Helps Students develop problem solving skills"	**	**	79 (0.5)	47 (1.5)

Table 1. National percentage of teachers agreeing with statements about positive outcomes of the use of ICT teaching and learning in schools (SE in parantheses). * = This statement was not offered again in ICILS 2018. ** = This statement was not yet offered in ICILS 2013.

Source: Compiled from Fraillon et al. 2014, p. 200-201, and Fraillon et al. 2019, p. 184.

The teachers' concerns about digital media are almost reversed (Table 2). Statements about negative outcomes of using ICT for teaching and learning are supported above average, although the difference to the ICILS 2018 average is not as strong as for the positive aspects.

The question now arises as to the relevant factors concerning teachers' attitudes and beliefs towards digital media. Again, we can take a cue from the 2018 ICILS study. These more media-skeptical and, if we include negative normative judgments toward students such as mistrust, media-moralizing beliefs toward media use also directly impact teachers' classroom practices. In the 2018 ICILS study, the use of digital media in the classroom was examined in correlation to an agreement with negative or positive statements about negative outcomes of using ICT for teaching and learning in schools (Fraillon et al. 2019, p. 186-188).

Negative Statements about ICT Teaching and Learnings	ICILS 2013 average	Germany 2013	ICILS 2018 average	Germany 2018
"Results in Poorer Writing Skills among Students"	67 (05)	52 (1.7)	52 (0.6)	63 (1.7)
"Only Introduces Organizational Problems for Schools"	17 (0.4)	34 (1.7)	*	*
"Impedes Concept Formation better Done with Real Objects than Computer Images"	40 (0.5)	38 (1.7)	23 (0.5)	21 (1.4)
"Only Encourages Copying Material from Published Internet Sources"	49 (0.5)	76 (1.7)	71 (0.6)	85 (1.4)
"Limits the Amount of Personal Communication among Students"	58 (0.5)	52 (1.6)	46 (0.6)	53 (1.4)
Results in Poorer Calculation and Estimation Skills among Students"	48 (0.5)	41 (1.6)	41 (0.5)	50 (1.7)
"Only Distract Students from Learning"	24 (0.4)	29 (1.5)	37 (0.6)	45 (1.9)

Table 2. National percentages of teachers agreeing with statements about negative outcomes of the use of ICT for teaching and learning in schools (SE in parantheses). * = This statement was not offered again in ICILS 2018.

Source: Compiled from Fraillon et al. 2014, p. 200-201, and Fraillon et al. 2019, p. 185.

For the overall average of the 2018 ICILS survey, teachers who use ICT in the classroom on a daily basis had significantly higher scale scores for their own ICT self-efficacy. And at the same time, these teachers also show significantly higher scale scores for the positive effects of using ICT. Conversely, such teachers are less likely to perceive negative effects for the school and students when using ICT in school daily. It was to be expected that German teachers would definitely be more pessimistic and skeptical.

This last aspect is the starting point for a research project of the German *Research Center Youth - Media - Education* at the Ludwigsburg University of Education and the Technical University Dortmund. First evaluations of the results from the academic year 2019/2020 have already been presented (cf. Rath & Delere 2020). The conclusion of these evaluations of the academic year 2019/20 was that students already bring a media-skeptical attitude to the university long before they have even had a teaching experience, which Blackwell et al. (2014) identified as decisive. Our study assumed that these student prejudices could explain why German teachers have a consistently more negative attitude toward digital media than their counterparts in other countries.

3. THEORETICAL BACKGROUND

German teachers estimated their self-efficacy in dealing with digital media to be only slightly worse than the ICILS average. However, their willingness to use ICT "daily" or "less than daily" correlated with their more precise position concerning their agreement with statements about negative outcomes of using ICT for teaching and learning. Thus, there is a correlative relationship between pedagogical practice and media skepticism or media openness.

3.1. Teaching Experience

The 2014 research of Blackwell, Lauricella, and Wartella on early childhood educators' use of digital media explored the question "What factors contribute to early childhood educators' technology use in the classroom?" (Blackwell et al. 2014, p. 84). Using path analysis, they were able to show that above all the factors "attitudes toward technology" and previous "teaching experience" are decisive for teachers' willingness to use digital technology (Figure 1).

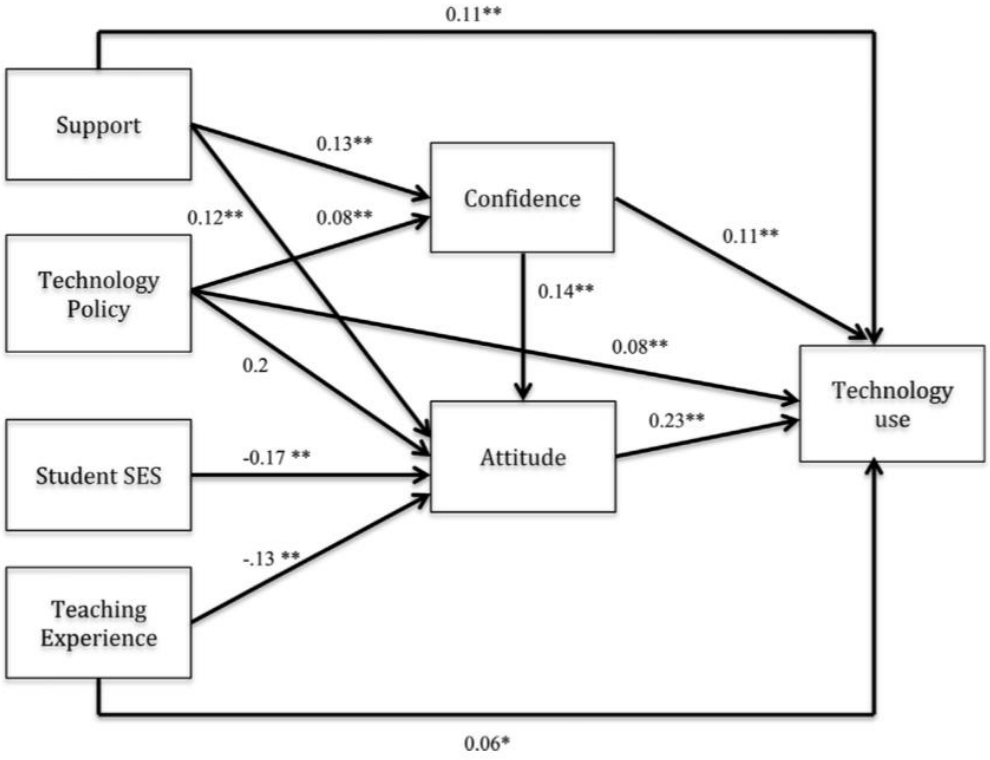

Fig. 1. "What factors contribute to early childhood educators' technology use in the classroom?", *p < .05; **p < .01

Source: Blackwell et al. 2014, p. 86.

3.2. Habitus and Capital Theory (Bourdieu)

The research project to be presented here bases on Pierre Bourdieu's theory of habitus (cf. Bourdieu 1996). The focus is on the "habitus" of prospective teachers about media education. In this context, socialization in general and the process of media socialization, in particular, are to be understood as *habitualization*. For Bourdieu, the *habitus* is a system of permanent and transferable patterns of perception, thought, and action that an individual has acquired and with which they act in a cultural space. The breadth, the repertoire of such habitus, makes up the space of action that an individual has at their disposal and determines their position in the "social space" (Bourdieu 1996, p. 88). Bourdieu assumes that people's practice of action results from several factors that function according to the model of investment and return. He calls these factors *capitals*, following Marx. In addition to the classic *economic capital* (money or monetary value), Bourdieu also distinguishes *social capital* (the networking and social relations that an agent has), *cultural capital* (the competencies that an agent has and that he has objectively institutionalized), and, as the sum of these capitals, *symbolic capital* (reputation, status, position in society). According to Bourdieu, not only the learning individual as an actor is decisive for the breadth and social relevance of this practice of action but also their volume of capital (cf. Bourdieu

1986). The *social space* is the framework in which the practice of action occurs, and it determines the possibilities and limits of the use and acquisition of capital.

Cultural capital is of particular importance in educational contexts. Bourdieu distinguishes three types of cultural capital:

– *Embodied cultural capital*, i.e., patterns of thought and action, attitudes, and competencies. They can be acquired in educational work.

– *Objectified cultural capital*, i.e., materializations of incorporated cultural capital, e.g., books, media, cultural goods in the broadest sense, which can also be managed economically.

– *Institutionalized cultural capital*, i.e., titles, educational qualifications, and certificates that provide objective information about incorporated cultural capital.

Education is thus the *social space* in which young people are offered opportunities to acquire *embodied cultural capital*. The goal would be the institutionalization of this capital as an educational degree, which, transferred to other fields (school, professional life), enables *social capital* and *symbolic capital* (e.g., profession), which in turn are decisive for the acquisition of *economic capital*. The form of this transfer, as well as the acquisition of capitals, is the *habitus*. The repertoire of habitus makes up the space of action (the "field") that an individual has at their disposal and determines the position they occupy in the *social space*.

For this paper, this means: social milieus delimit themselves from each other through their respective social, in our case also medial, practices. Here, with Bourdieu, we understand institutionalized education (pre-school, school, university) as *social space* (cf. Bourdieu 1996; Bourdieu & Wacquant 1996). Bourdieu's model of practice as a result of "[(habitus) (capital)] + field = practice" (Bourdieu 1996, 101) describes how in different social spaces the attitudes organized in the habitus are formed about the different possibilities of action depending on the capital. This capital, which is to be acquired for the individual actors in this space, is not only *cultural* (as the acquisition of knowledge and skills) but primarily *social*. It refers to the social contacts that are decisive for the attitudes of the habitus acquired via *embodied cultural capital*, which at the same time serves as a practical proof of the status that an individual occupies in a social space, their *symbolic capital*.

3.3. Medial Habitus

Kommer and Biermann took up the concept of habitus and focused it on media-related structures of thought and action. They define the medial habitus as "a system of enduring media-related dispositions that function as generating and ordering bases for media practices and media-related and media-use-related ideas and attributions" (Kommer & Biermann 2012, p. 90, own translation). The genesis of the media habitus begins in the earliest childhood through parents' media practices and preferences.

3.4. "Vocational Habitus"

Colley et al. (2003) emphasize for vocational education that, in addition to the knowledge and skills of the future professional field, a process of identity formation must also be taken into account. The future professionals also acquire their own "vocational culture" (Colley et al. 2003: p. 477) in vocational training, which proves to be decisive for the individual realization of the expectations of the respective professionalism. Colley et al. (2003, p. 488) therefore postulate a "vocational habitus" typical for the respective professionalism, which they define in more detail: "(...) a central aspect of students' learning appears to be a process of orientation to a particular identity, a sense of what makes 'the right person for the job'." In the "vocational habitus," a specific way of filling out a profession is concentrated. Colley et al. refer to Bordieu's habitus theory. The vocational habitus "expresses 'sense', as a sense of one's 'proper place' and conveys what Bourdieu describes as *'un sens pratique', 'practical common sense'*. Such 'sense' is an apparently natural – but always socially constructed – sense of the 'right way' to be and to behave in the workplace" (Colley et al. 2003, p. 492).

In this context, it is essential to see that predispositions that were already acquired before vocational training take on a particular position in the formation of the vocational habitus. The vocational habitus "appears to offer a tool for thinking about the way in which practices are regulated within that culture,

in ways that produce new identities, but also reproduce existing ones, such as gender stereotypes" (ibid.). This reinforcing effect of attitudes towards media already acquired in socialization in the formation of professional identity can help to interpret the results of our study.

In the following, we will take a more differentiated look at further results from the surveys of four cohorts since 2019 at one of the participating universities.

4. MATERIALS AND METHODS

In this project of the *Research Center Youth - Media - Education*, pre-service teachers' attitudes at the Ludwigsburg University of Education and the Technische Universität Dortmund to digital media and their use in teaching have been continuously surveyed since 2019. The detailed questionnaire with more than 220 items is offered online in courses at both locations and answered directly online. This paper presents the current results from the surveys of four cohorts at Ludwigsburg University of Education on pre-service teachers' attitudes and beliefs toward digital media, the impact on pupils, and the importance that digital media can and should have in the classroom.

The data presented here were collected in the summer terms 2019 and 2020 and in the winter terms 2019/2020 and 2020/2021. The university type "University of Education" specializes in the training of teachers of all school types and all age levels. In addition to the subject sciences, students are broadly exposed to didactic, pedagogical, and psychological content. In addition, training in media education is mandatory.

5. RESULTS

A total of 289 pre-service teachers participated in the survey evaluated here. Of these, 59 identified themselves as male, 229 as female, and one as diverse. The pre-service teachers surveyed targeted different levels of schooling (Table 3).

School Level	**Number of Students**			
	SoSe 2019	**WiSe 2919/20**	**SoSe 2020**	**WiSe 2020/21**
Primary Education (grade 1-4)	12	18	22	25
Secondary Education (grade 5-10)	28	39	21	28
Special Education	15	1	13	17
Higher Education (> grade 10)	20	19	4	5
Others	0	0	1	1
Sum	***75***	***77***	***61***	***76***

Table 3. Number of surveyed pre-service teachers in relation to the studied school level in which the students will teach in the future (N=289).

Among other things, the pre-service teachers were asked about their media use. Here, the concept of media was narrowly defined in technical terms. The following two figures show students' responses across all four cohorts to selected media relevant to school. Fig. 2 first presents pre-service teachers' responses to the question about their private media use. Uses were elicited via the question, "How often do you use the following media today?" A Likert scale was offered with six semantically polarized items.

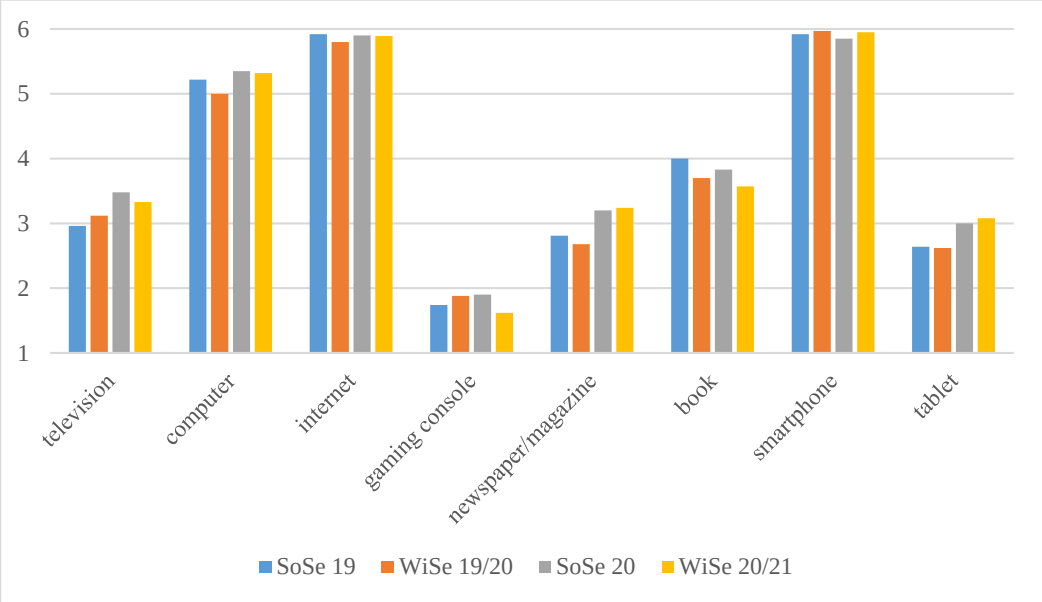

Fig. 2. Average values of the answers to the question "How often do you use the following media?" (N=289) (1 = 'never', 6 = 'several times a day').

In order to assess the professional practical relevance of the media familiar to them in their private use, the pre-service teachers were asked what significance they thought the various media would have as teaching and learning aids in their future teaching. In other words, the question did not ask about actual classroom use (which would vary, for example, depending on the technical equipment of the future schools) but instead asked for a *value judgment*.

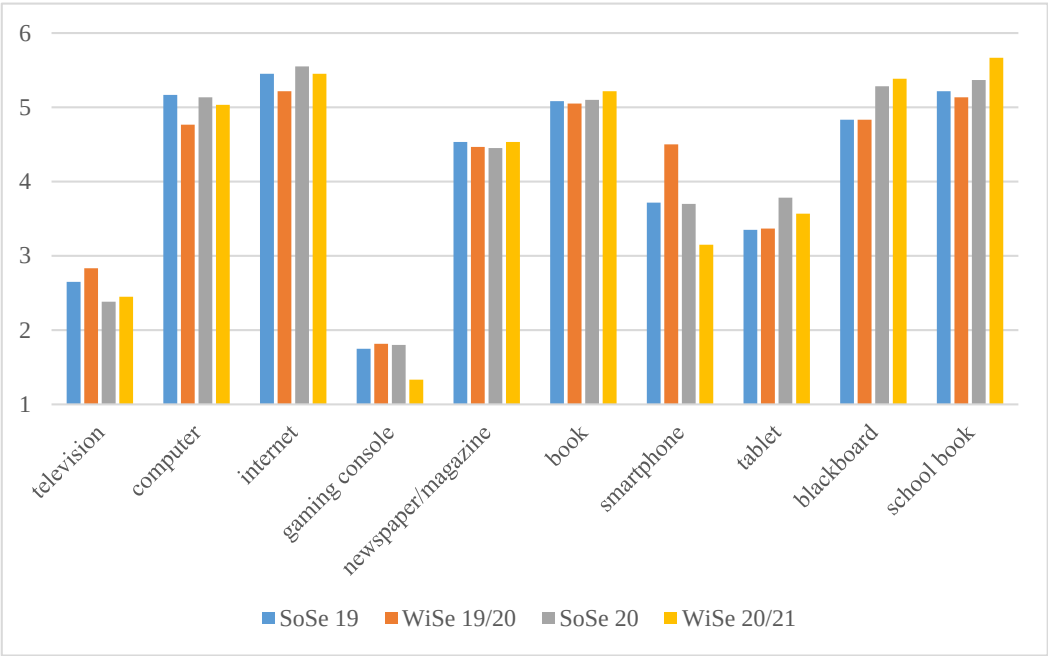

Fig. 3. Average values of the answers to the question "In your opinion, how important are the following media as teaching and learning aids in your lessons?" (N=289) (1 = 'not at all important', 6 = 'very important').

This question was offered in the questionnaire with a Likert scale with four items, semantically polarized. Fig. 3 shows the results of this survey for better comparability based on a unifying scale transformation (cf. Colman, Norris & Preston 1997) to six items.

Interestingly, a comparison of the cohorts against the background of the ICILS studies shows an unexpected homogeneity of the answers. Only the value in the SoSe 2020 on smartphone use in class is an "outlier" (cf. Osborne & Overbay 2004), which cannot be analyzed here in a more differentiated way. In the following, the cohorts are therefore no longer shown separately.

The frequent private use of computers and the Internet as the leading technologies of current digitization is accompanied by a positive attitude toward the use of digital media in the expected own teaching. However, a comparison of the other media reveals differences between the professional assessment of the medium and private use. Fig. 4 shows the averages of the transformed results of both questions in comparison.

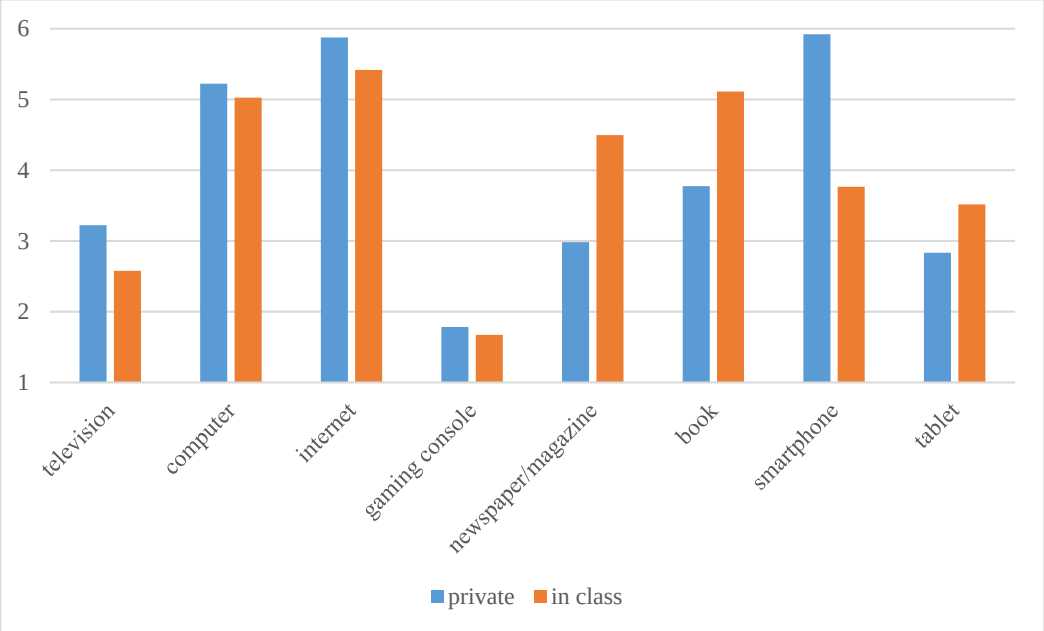

Fig. 4. Mean values of responses to the question about media use and the importance of media for future teaching (N=289) (1 = low assessment, 6 = high assessment).

Furthermore, for the pre-service teachers' attitudes concerning the media, the polarity of the average difference is interesting. Fig. 5 shows this polarity across the surveyed media resulting from the difference between professional attribution of importance and private media use.

Negative values in Fig. 5 indicate that the medium is assigned higher importance for teaching than would be expected from private media use. A positive value indicates that individual media use is higher than the expected importance of the medium in the classroom. The substantial positive value for newspaper/magazine and book is particularly striking. The traditional print media, which according to the thesis of media moralization are culturally positively charged, are assigned a higher significance in the classroom, i.e., oriented toward one's own professionalism aspects, than in one's own private media use.

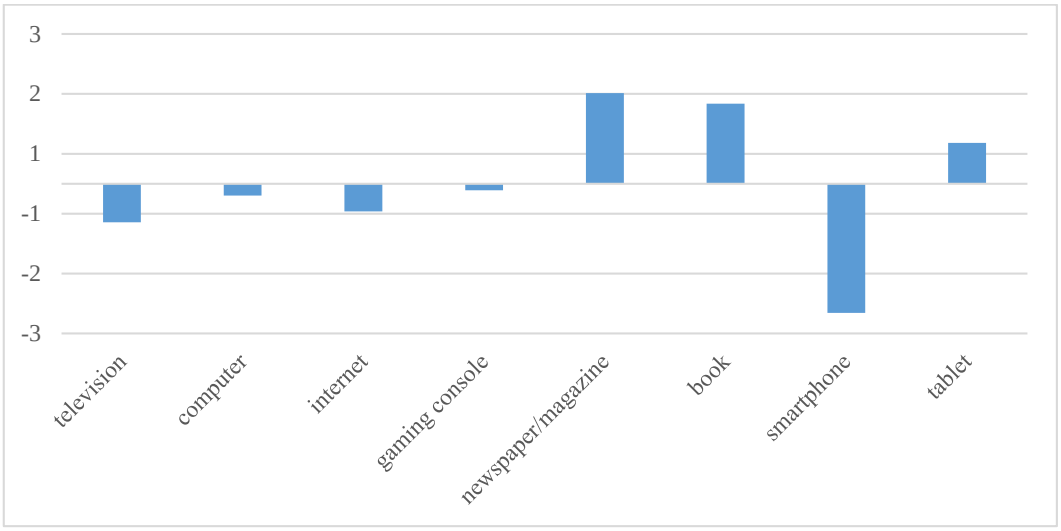

Fig. 5. Difference between attribution of importance and private media use (N=289).

At the same time, the smartphone seems to be used very much among the pre-service teachers individually, but it is seen as less significant for future teaching. This finding is surprising, as smartphone ownership among German adolescents between the ages of 12 and 19 averaged 93% in 2019 and 94% in 2020 (Feierabend et al. 2020, p. 8). Even among school-aged children between the ages of 6 and 13, we have smartphone ownership of 39% in Germany (Feierabend, Rathgeb & Reutter 2019, p. 9). Thus, despite its strong presence and thus usability in the classroom, this hybrid device with its various apps, which are also relevant for school, is little in the focus of pre-service teachers.

In contrast, ownership of a computer or laptop of one's own is much lower at 65% in 2019 and 72% in 2020 (Feierabend et al. 2020, p. 8), thus raising didactic and ethical questions with a lower prevalence and at the same time higher importance for the future teaching of pre-service teachers. Fig. 6 shows the percentage of device ownership of children and adolescents in Germany across the age from representative surveys of the MPFS *Medienpädagogischer Forschungsverbund Südwest* (*Media Education Research Network Southwest*) for 2018 (6-13 years) respectively 2020 (12-19 years).

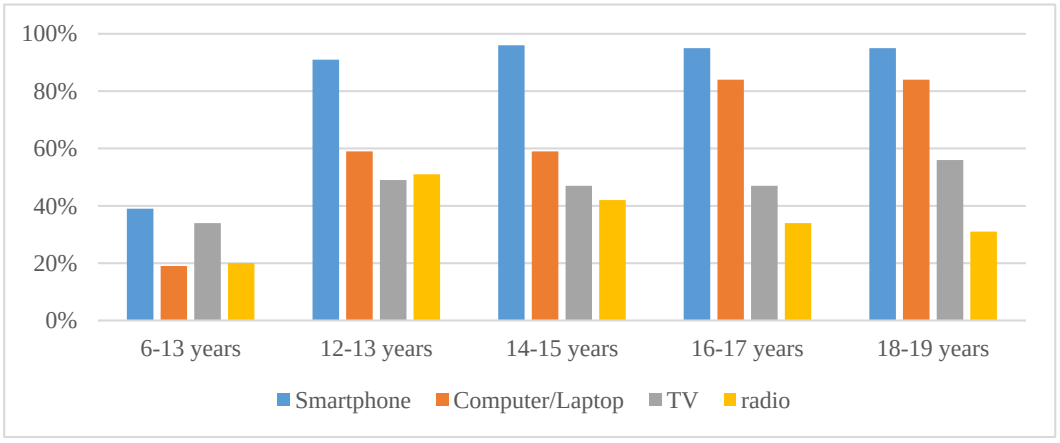

Fig. 6. Device ownership among German children and adolescents, school-relevant selection (in percent)

Source: Compiled from Feierabend, Rathgeb & Reutter 2019, p. 9, and Feierabend et al. 2020, p. 10.

The assessment of the surveyed pre-service teachers concerning the professional use of media in the classroom is inversely proportional to their media use. The cultural esteem for written media, above all the book, is also found in the pre-service teachers' attributions of meaning. They thus correspond to the "auratic book culture" ("auratische Buchkultur," Kerlen 2005, p. 100) of the educated middle class in Germany since the 19th century, which is typical for media moralization and stems from the *sola scriptura* of German Protestantism (Kerlen 1999).

In the interviews, we also surveyed the agreement or disagreement with statements about media and specifically about the importance of media use in school. A total of 38 items were surveyed, but only five relevant statements and their acceptance by the pre-service teachers will be presented below (Fig. 7). They exemplify three thematic approaches to media use in school:

– Task of the school in the context of media education ("School should protect from harmful influences"; "Media education should teach skills for today's media").

– General assumption about the strength of the influence of media on children and young people ("Media have a strong influence on children and young people")

– Consequences of the influence of media on children and young people ("Children have difficulty distinguishing between real and media or virtual worlds")

– Principle responsibility for media education of the school or the parents ("Media education is the responsibility of the parents, not of the school")

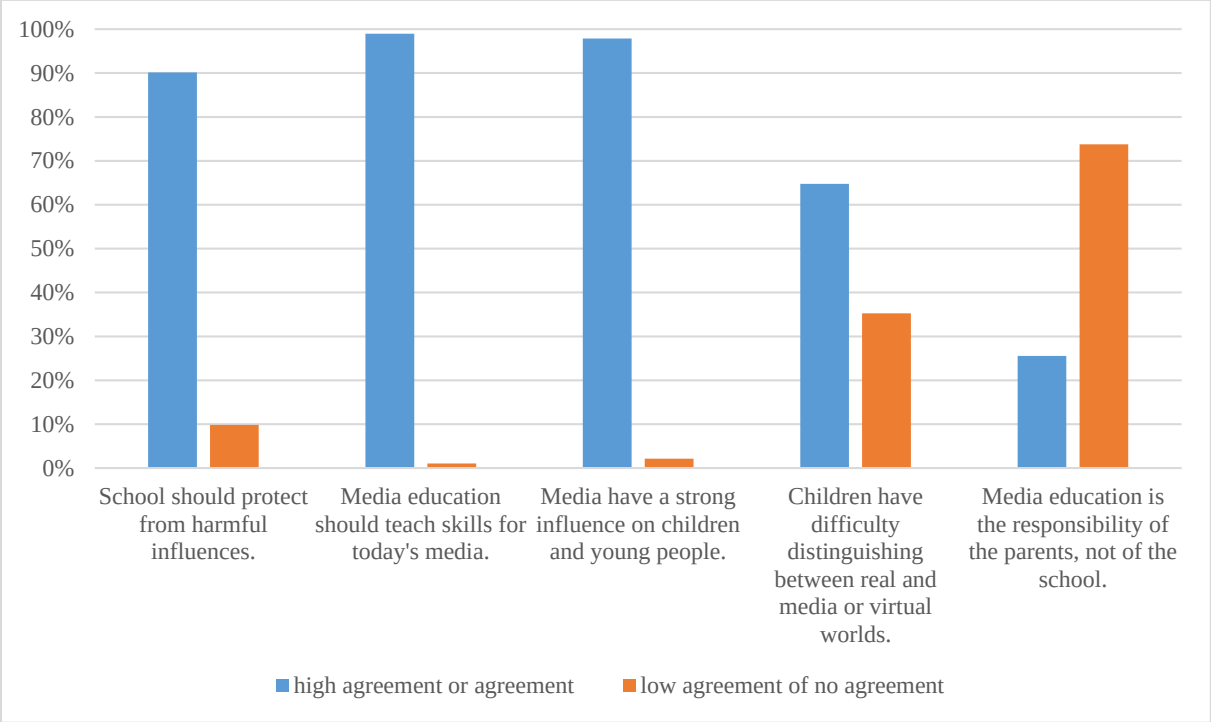

Fig. 7. Statements about media, media effects and media education, agreement of pre-service teachers (selection, in percent, N=289)

We see that the pre-service teachers assume a high impact of the media on children and adolescents and at the same time advocate a strong responsibility for an appropriate and preserving media education of the school. Thus, it is part of the normative presuppositions of pre-service teachers to be qualified to assess media use in terms of its impact and social significance and, at the same time, to be willing to assume responsibility for appropriate education of the upcoming generation.

6. DISCUSSION

The results of our study show a media pedagogical "gap of beliefs." While the current pre-service teachers, as "digital natives" (Prensky 2001), have a positive attitude toward media use in their private lives, they tend to be media-skeptical concerning their future professional media activities and their attitude toward media education. At the same time, however, they postulate responsibility for media education for themselves and the school as an institution.

Since the pre-service teachers surveyed do not yet have the teaching experience that would be expected as an influencing factor (Blackwell et al. 2014), it makes sense to trace this gap back to the socializing influences before they start their studies (Rath & Delere 2020). In the context of the formation of a vocational habitus, Colley et al. (2003) had pointed to the predispositions already present before the start of vocational education as a "practical knowledge of the social world" (Bourdieu 1996, p. 468). The socializing practice in the authoritative contexts or, as we can say with Bourdieu, in the *social spaces* relevant for socialization practices enables the acquisition of certain attitudes or beliefs, which, depending on the social spaces, may also contradict each other. Three possible socializing fields lend themselves to reconstructing this dissonance, parental education, peer group influence, and school influence.

An overview study of media use in Germany between 1998 and 2011 (Feierabend et al. 2013) shows that the use of and family access to digital media and the Internet for the age group of the pre-service teachers we are interested in (year of birth around 2000) has risen steadily and in some cases dramatically. Accordingly, the cohorts surveyed belong to a generation that was generally speaking not taught any reservations or sustained negative attitudes toward the media by family media practices. The same is valid for media use in the context of the respective peer group. The positive attitude of the pre-service teachers in the private media use area is more in line with the general findings on media practice and media socialization by parents (Marci-Boehncke & Rath 2013) and peers (Marci-Boehncke & Rath 2007).

Therefore, only the field of school-based media socialization remains. The results of our study show that despite the media-affine attitudes in their private lives the surveyed pre-service teachers exhibit attitudes towards their future professional field and the associated professional habitus of the generation of teachers currently working in Germany. This assumption can be theoretically reconstructed based on Pierre Bourdieu's *habitus theory* and the conceptions of *media habitus* and *vocational habitus*.

Bourdieu proposes the equation "[(habitus) (capital)] + field = practice" (Bourdieu 1996, p. 101) for the understanding of the relation between the actual habitus, its social field, in which it is realized, the associated capitals, and the then also explicitly shown practice. It follows that we have to look at the *fields of action* for the values characterizing the habitus. Bourdieu describes the space specific categories of the valuation of the world, i.e., attitudes, as follows:

"The cognitive structures which social agents implement in their practical knowledge of the social world are internalized, 'embodied' social structures. The practical knowledge of the social world that is presupposed by 'reasonable' behaviour within it implements classificatory schemes (or 'forms of classification', 'mental structures' or 'symbolic forms' – apart from their connotations, these expressions are virtually interchangeable), historical schemes of perception and appreciation which are the product of the objective division into classes (age groups, genders, social classes) and which function below the level of consciousness and discourse. Being the product of the incorporation of the fundamental structures of a society, these principles of division are common to all the agents of the society and make possible the production of a common, meaningful world, a common-sense world." (Bourdieu 1996, p. 468)

So these categories of evaluation are different depending on the field of action that the actors play. Furthermore, these fields are different depending on the social space in which they enable practice. The "internalized, 'embodied' social structures" acquired in the educational process are not comprehensive, but social space specific and thus also constitute a different habitus, distinguishable according to social spaces, which is defined by the aspired symbolic capital of the future professional field. This context corresponds to the "vocational habitus" of Colley et al. (2003). It also explains why the private "media

habitus" (Kommer & Biermann 2012), appropriated from the family and peers and characteristic for private media use, leads to a setting of attitudes that correspond to the experienced professional image of current teachers. Under the premise of wanting to fulfill a professional ideal, the idea of being 'the right person for the job' (cf. Colley et al. 2003, p. 488) homogenizes one's own media habitus with the institutionally mediated media pedagogical habitus of the social class "teacher." This relation is also in line with Bourdieu's description of the adoption of normative dispositions in the context of professionalization.

"The homogeneity of the dispositions associated with a position and their seemingly miraculous adjustment to the demands inscribed in it result partly from the mechanisms which channel towards positions individuals who are already adjusted to them, either because they feel 'made' for jobs that are 'made' for them-this is 'vocation', the proleptic assumption of an objective destiny that is imposed by practical reference to the modal trajectory in the class of origin – or because they are seen in this light by the occupants of the posts-this is co-option based on the immediate harmony of dispositions – and partly from the dialectic which is established, throughout a lifetime, between dispositions and positions, aspirations and achievements." (Bourdieu 1996, p. 110)

7. CONCLUSIONS

Even before students have had the teaching experience emphasized by Blackwell, Lauricella, and Wartella as a condition for a negative attitude toward digital media, they already seem to bring a principally media-skeptical attitude to the university. This thesis explains why German teachers in comparative studies are consistently more negative about digital media than their colleagues in other countries. Within the framework of a theory-based reconstruction of the survey results of pre-service teachers, Bourdieu's habitus theory offers an explanatory model that makes the discrepancy between the private media habitus and the vocational habitus of pre-service teachers understandable as the result of the acquisition of different practice-guiding criteria (attitudes) in different social spaces.

However, it remains to be clarified what the significant cognitive, emotional, and practical reasons are for specific interest in a particular choice of profession. A simple correspondence of a family-mediated media habitus with school-mediated media skepticism seems to fall short. Instead, it seems plausible that the choice for the teaching profession results from the status expectations of the pre-service teachers. These expectations may, of course, be family-based. However, some studies (Brookhart & Freeman 1992; Richardson & Watt 2006; Watt & Richardson 2007; Han & Yin 2016) suggest that prior teaching and learning experiences are important influencing factors in pre-service teachers' choices of studies and careers.

These findings raise some open questions that further research would need to explore. How do pre-service teachers appraise the experienced media practices of their former teachers? Which aspects of the teaching profession are decisive for career choices, and which aspects compensate for those aspects at odds with private habitualizations? In this context, the capitals that are decisive for this career choice would be interesting, especially the embodied cultural capital of the attitudes towards media offered at school and the expected or aspired symbolic capital in general. Methodologically, individual interviews or group discussions are preferable to standardized surveys (Marci-Boehncke & Delere 2018).

In view of the connections with pre-university attitudes that are emerging here, increased purely cognitive media education within the framework of teacher training seems to be only partially efficient in bringing about a practical change in the media skepticism of German teachers. At the level of the respective concrete teachers, such initiatives seem to fizzle out. Voluntary media training alone appears to be a "cure for the healthy," since these media education offerings already presuppose the media-affine habitus that the participating teachers are supposed to acquire. To a certain extent, this also applies to the level of the concrete schools. Not only are the respective school administrators also recruited from the group of teachers, but the concrete organization of teaching in German schools also allows for a bypassing of school specifications in concrete teaching, since the teachers usually act independently and without team teaching or other continuous forms of evaluation. According to Uri Bronfenbrenner's (1979) theory of ecological systems, it is not only the individual *micro level* and institutional *meso level*

that must be considered, but also the societal *macro level*. According to Bronfenbrenner, the attitudes of a culture are located on this macro level, so that a change of attitudes and thus of the respective habitus could be achieved by clear political practice guidelines.

ACKNOWLEDGMENTS

I would like to thank Malte Delere M.Ed. and Hanna Höfer-Lück M.A. from the *Research Center Youth – Media – Education* for the digital organization of the data collection.

REFERENCES

1. Blackwell CK, Lauricella, AR & Wartella, E 2014, 'Factors influencing digital technology use in early childhood education', *Computers & Education*, vol. 77, pp. 82-90.
2. Bourdieu, P & Wacquant LPD 1992, *An Invitation to Reflexive Sociology*, University of Chicago Press, Chicago.
3. Bourdieu, P 1986, 'The Forms of Capital', in Richardson JG (ed.), *Handbook of theory and research for the sociology of education*, Greenwood Press, New York, pp. 241-258.
4. Bourdieu, P 1996, *Distinction: A Social Critique of the Judgement of Taste*. Harvard University Press, Cambridge, Massachusetts.
5. Bronfenbrenner, U 1979, *The Ecology of Human Development: Experiments by Nature and Design*, Harvard University Press, Cambridge, MA.
6. Brookhart, SM & Freeman, DJ 1992, 'Characteristics of entering teacher candidates', *Review of Educational Research*, vol. 62, pp. 37-60.
7. Colley, H, James, H, Tedder, M & Diment, K 2003, 'Learning as becoming in vocational education and training: class, gender and the role of vocational habitus', *Journal of Vocational Education and Training*, vol. 55, no. 4, pp. 471-496.
8. Colman, AM, Norris, CE & Preston, CC 1997, 'Comparing rating scales of different lengths: equivalence of scores from 5-point and 7-point scales,' *Psychological Reports*, vol. 80, pp. 355-362, viewed 6 April 2021, < https://www.rangevoting.org/comprati.pdf>.
9. Delere, M & Rath, MO 2018, 'Teachers' beliefs in media and whether they can be modified: a comparative study, examining first years and advanced students from different forms of education', *ICERI2018 Proceedings, 11th annual International Conference of Education, Research and Innovation*, IATED, Sevilla, pp. 2010-2016, viewed 30 March 2021, <https://library.iated.org/view/DELERE2018TEA>.
10. Feierabend, S, Karg, U & Rathgeb, T 2013, *15 Jahre Jim-Studie Jugend, Information, (Multi-) Media. Studienreihe zum Medienumgang 12- bis 19-Jähriger 1998 – 2013 [15 Years of the Jim-Study Youth, Information, (Multi-) Media. Series of studies on media use by 12- to 19-year-olds 1998 – 2013]*, Medienpädagogischer Forschungsverbund Südwest (mpfs), Stuttgart.
11. Feierabend, S, Rathgeb, T & Reutter, T 2019, *KIM 2018. Kindheit, Internet, Medien. Basisuntersuchung zum Medienumgang 6- bis 13-Jähriger in Deutschland [KIM 2018. Childhood, Internet, Media. Basic study on the media use of 6- to 13-year-olds in Germany]*, Medienpädagogischer Forschungsverbund Südwest (mpfs), Stuttgart.
12. Feierabend, S, Rathgeb, T, Kheredmand, H & Glöckler S 2020, *JIM 2020. Jugend, Information, Medien. Basisuntersuchung zum Medienumgang 12- bis 19-Jähriger in Deutschland [JIM 2020. Youth, Information, Media. Basic study on media use among 12- to 19-year-olds in Germany]*, Medienpädagogischer Forschungsverbund Südwest (mpfs), Stuttgart.

13. Fraillon, J, Ainley, J, Schulz, W, Duckworth, D & Friedman, T 2019, *Preparing for Life in a Digital World. IEA International Computer and Information Literacy Study 2018 International Report*, IEA, Amsterdam, viewed 30 March 2021, <https://www.iea.nl/publications/study-reports/preparing-life-digital-world>.
14. Fraillon, J, Ainley, J, Schulz, W, Friedman, T & Gebhardt, E 2014, *Preparing for Life in a Digital Age. The IEA International Computer and Information Literacy Study International Report*, Springer Open, Cham, Heidelberg, New York, Dordrecht, London, viewed 1 April 2021, <https://link.springer.com/content/pdf/10.1007%2F978-3-319-14222-7.pdf>.
15. Han J & Yin H 2016, 'Teacher motivation: Definition, research development and implications for teachers', *Cogent Education*, vol. 3, no. 1, article 1217819, viewed 25 April 2021, <https://doi.org/10.1080/2331186X.2016.1217819>.
16. Kerlen, D 1999, 'Protestantismus und Buchverehrung in Deutschland' ['Protestantism and book adoration in Germany'], In Böning, H, Kutsch, A & Stöber, R (eds.), *Jahrbuch für Kommunikationsgeschichte*, vol. 1, Steiner, Stuttgart, pp. 1-22.
17. Kerlen, D 2001, 'Druckmedien' ['printing media'], in B Franzmann, D Löffler, K Hasemann & E Schön (eds.), *Handbuch Lesen*, Schneider Hohengehren, Baltmannsweiler, p. 240-280.
18. Kerlen, D 2005, *Jugend und Medien in Deutschland. Eine kulturhistorische Studie [Youth and media in Germany. A cultural-historical study]* (ed. by MO Rath & G Marci-Boehncke), Beltz, Weinheim.
19. Kommer, S & Biermann, R 2012, 'Der mediale Habitus von (angehenden) LehrerInnen. Medienbezogene Dispositionen und Medienhandeln von Lehramtsstudierenden' ['The media habitus of (prospective) teachers. Media-related dispositions and media actions of pre-service teachers'], in Schulz-Zander, R, Eickelmann, B, Moser, H, Niesyto, H & Grell, P (eds.), *Jahrbuch Medienpädagogik 9*, Verlag für Sozialwissenschaften, Wiesbaden, pp. 81-108.
20. Law, N, Pelgrum, WJ & Plomp, T (eds.) 2008, *Pedagogy and ICT Use in Schools around the World: Findings from the IEA SITES 2006 Study*, Hong Kong: CERC-Springer.
21. Marci-Boehncke, G & Delere, M 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, 11th annual International Conference of Education, Research and Innovation*, IATED, Sevilla, pp. 1980-1985, viewed 28 April 2021, <https://library.iated.org/view/MARCIBOEHNCKE2018DIS>.
22. Marci-Boehncke, G & Rath, M 2007, *Jugend – Werte – Medien: Die Studie [Youth - Values - Media: The Study]*. Beltz, Weinheim.
23. Marci-Boehncke, G & Rath, M 2013, *Kinder – Medien – Bildung. Eine Studie zu Medienkompetenz und vernetzter Educational Governance in der Frühen Bildung ['Children - Media - Education. A Study on Media Competence and Networked Educational Governance in Early Education']*. Kopäd, München.
24. Martin, MO & Mullis, IVS (eds.) 2013, *TIMSS and PIRLS 2011: Relationships Among Reading, Mathematics, and Science Achievement at the Fourth Grade – Implications for Early Learning*, TIMSS & PIRLS International Study Center, Boston College, Chestnut Hill, MA.
25. Mullis, IVS, Martin, M O, Foy, P & Hooper, M 2017, *PIRLS 2016 International Results in Reading*, viewed 23. April 2021, <http://timssandpirls.bc.edu/pirls2016/international-results/>.
26. Mullis, IVS, Martin, M O, Foy, P, Kelly, D L & Fishbein, B 2020, *TIMSS 2019 International Results in Mathematics and Science*, viewed 23. April 2021, <https://timssandpirls.bc.edu/timss2019/international-results/>

27. Osborne, JW & Overbay, A 2004, 'The power of outliers (and why researchers should ALWAYS check for them)', *Practical Assessment, Research, and Evaluation*, vol. 9, article 6, viewed 6 April 2021, < https://scholarworks.umass.edu/pare/vol9/iss1/6>.

28. Prensky, M 2001, 'Digital Natives, Digital Immigrants' *On the Horizon*, vol. 9, no. 5, pp. 1-6, viewed 28 April 2021, <http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>.

29. Rath, MO & Delere, M 2020, 'Media skepticism as a prejudice – attitudes of German prospective teachers towards digital media', *INTED2020 Proceedings, 14th International Technology, Education and Development Conference*, IATED, Palma de Mallorca, pp. 5851-5858, viewed 2 April, 2021, <https://library.iated.org/view/RATH2020MED>.

30. Richardson, PW & Watt, HMG 2006, 'Who chooses teaching and why? Profiling characteristics and motivations across three Australian universities', *Asia-Pacific Journal of Teacher Education*, Vol. 34, no. 1, pp. 27-56. Viewed 25 April, 2021, <https://www.tandfonline.com/doi/abs/10.1080/13598660500480290>.

31. Watt, HMG & Richardson, PW 2007, 'Motivational factors influencing teaching as a career choice: Development and validation of the FIT-choice scale', *The Journal of Experimental Education*, vol. 75, no. 3, pp. 167-202, viewed 25 April, 2021, <https://www.tandfonline.com/doi/abs/10.3200/JEXE.75.3.167-202>.