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Media competence, media education or digital literacy?
Attempt at classification in the context of media pedagogy.

Matthias Andrasch - 2019

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Media competence, media education or digital literacy?
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Context:

These contents were originally developed in the context of a Master's thesis, which has not yet been published, but has been submitted and evaluated. In order to make some of the contents of this work accessible to pupils*, students and other interested parties as an open contribution to discussion or as a potential source of research, I have published individual chapters as Open Access extracts. The contents have not undergone a peer review.

Special thanks go to Christian Friedrich (<https://christianfriedrich.org>), who contributed some helpful sources to Digital Literacies. His current work on the topic: <https://blog.wikimedia.de/2019/06/27/digital-literacies-und-offenheit-was-wir-tun-damit-menschen-das-freie-netz-formen-koennen/>

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1 introductory remarks

The headline sounds alarming: "Germany's schools are digitally lost". The Tagesspiegel online article from September 2017 refers to¹ the results of the International Computer and Information Literacy Study (ICILS). Birgit Eickelmann, Professor of School Pedagogy and co-author of the study, is quoted as follows in relation to the results: "Almost 30 percent of 14-year-olds were 'lost' on the road to digital literacy, including a particularly large number of young people whose parents have a low socio-economic status. If you in the article will further the strategy of the Kultusministerkonferenz, „Bildung in der digitalen Welt“ genannt sowie ein Rahmenlehrplan für Medienbildung in Berlin und Brandenburg

are looking for further information on the ICILS study, you will² find it on the website of the Ministry of Education and Research (BMBF). It says: "The media skills of eighth grade pupils are covered by the international comparative study 'ICILS'". The study is listed on the BMBF website alongside other comparative studies such as PISA, IGLU and TIMSS.

Two website hits are potentially sufficient and interested people are in the middle of a confusion of terms: Are computers and information literacy now synonymous with the common term "media competence" in Germany? Does digital competence exist alongside media competence or can these terms be used synonymously? What does the term media education stand for? And what is the relationship of all concepts to the strategy "education in the digital world" mentioned in the article? How exactly is a "digital world" defined, to what is the "digital" attached?

In addition to conceptual disputes, the question arises: How should the study results be reacted to? An obvious reaction to a certified lack of competence is competence promotion measures, i.e. changes in the education system. The demands for change seem to be ubiquitous in Germany in recent years, especially with regard to "digital topics" and images.

1 Kühne, Anja, and Amory Burchard. 2017. "Germany's schools are digitally outnumbered." Tagesspiegel, 2017. accessed 15 September 2018. <https://www.tagesspiegel.de/wissen/expertise-zu-digitaler-bildung-deutschlands-schulen-sind-digital-abgehaengt/20327506.html>.

2 BMBF Internet editorial office. no. J. "ICILS - International Computer and Information Literacy Study - BMBF". Federal Ministry of Education and Research - BMBF. Accessed 15 September 2018. <https://www.bmbf.de/de/icils-international-computer-and-information-literacy-study-921.html>.

dung. Demands are being voiced by politicians, business and society alike: Children and young people should be prepared as well as possible for this future "digital world". The motives behind these demands can be as diverse as the description of this future "digital world". Last but not least, it is likely that the economic competitiveness of some actors is also at stake, in addition to pedagogical educational ideals such as empowerment to participate.

[...]

2 Theoretical Backgrounds

2.1 The ICILS study

So where should one begin to fathom the theoretical background to such a huge complex of problems? In the introduction to this work, a possible confusion of terms was already presented, which can be caused by the ICILS study. ICILS stands for *International Computer and Information Literacy Study* and was the first computer-based comparative study by the *International Association for the Evaluation of Educational Achievement* (IEA). The study is an empirical educational research study that examines "the extent to which eighth-grade pupils have such cross-curricular key competences designed and recorded in the study as computer- and information-related competences. In addition, ICILS 2013 will examine the framework conditions under which competence acquisition takes place" (Eickelmann et al. 2014a: p.9). The study used a construct that follows a literacy approach. Computer and information-related competences are brought together and "individual skills are defined that allow a person to use computers and new technologies to research, design and communicate information and to evaluate them to successfully participate in life at home, at school, at work and in society" (Eickelmann et al. 2014a: p.10). The construct was divided into two parts: 1. to collect and organize information and 2. to generate and exchange information.

These "computers and information-related competences" are understood as key competences of the 21st century. A competence which, according to study authors,³ is indispensable for today's knowledge society:

3 The authors refer to the 21st century skills of the Partnership for 21st Century Skills as an example.

"Since, in view of the necessary flexibilisation at work and in society, large areas of knowledge over the entire life span can be acquired largely autonomously and primarily via digital media (cf. Ezziane, 2007), ICT literacy is one of eight key competences which, according to Ferrari (2012), form the basis for lifelong learning. The mastery of computer and Internet applications must therefore be regarded as an important educational goal in the sense of acquiring a cultural technique, the development of which is an essential prerequisite for successful participation in society and for the fulfilment of personal, professional, social and political objectives (cf. Aktionsrat Bildung, 2008; KMK, 2012). (Senkbeil et al. 2014: p.83)

In concrete terms, pupils in the eighth grade were tested with three task types (Eickelmann et al. 2014a: p.11), which they completed in a fictitious software application:

1. Non-interactive test items, e.g. multiple-choice or drag-and-drop items or by giving short text responses. These were "predominantly dichotomized with right or wrong" (Eickelmann et al. 2014b: p.72).
2. Performance tasks (skills tasks), by navigating through a software environment that has been imitated by real-world functionalities
3. authoring tasks, which were subsequently evaluated by coders according to formal and content criteria, e.g. creation of a poster incl. information research and evaluation of research results (also in the fictitious software environment)

Several computer applications were simulated in the software application, e.g. an Internet browser, an e-mail program or a graphics program. Five competence levels (Eickelmann et al. 2014a: p.15) were available for pupils. In addition to these tasks in a software environment, pupils and teachers were asked, among other things, about the frequency of media use in schools. The performance of German pupils was in the middle of the EU comparison group, the competence levels were distributed as follows:

"Almost half, and thus the largest proportion of young people in Germany, are at intermediate competence level III (45.3%). These eighth-graders are thus able, among other things, to process documents and create simple information products under supervision. Approximately 30 percent of pupils in Germany achieve grades that can be assigned to the two lowest competence levels I and II. They thus only have rudimentary skills or basic knowledge in the competent handling of new technologies and digital information" (Eickelmann et al. 2014a: p.16).

The reception of the works on the ICILS study may shed some light on the confusion of concepts, but these remarks are nevertheless strongly tailored to the preparation of an international comparative study in the context of school and educational research. They are based on previous studies, measurement methods and approaches which aim at statistical results in an international comparison, i.e. hard and reliable numerical values. This central goal of measurability is rather unsuitable as a starting point for the questi-

on of the design of competence promotion in educational initiatives. Therefore, more open entry points into the competence topic are to be found in this work.

2.2 Digital Literacy in Comparison with Competence Models in Media Education

So where to start? Who defines "digital competences"? For this work, two points of immersion - comparable to a diver who does not yet know exactly what is waiting for her in the depths - were chosen into the subject matter. This was connected with the hope that the references, ramifications and questions arising there could ultimately be productively brought together for a concept in the sense of emergence to the surface. And this, if possible, without the circumstance that the oxygen reserves are exhausted before the processing time has elapsed. No detailed literature review or similar was carried out in advance.⁴

The first immersion point - in the sense of a media pedagogical perspective of this work - was Friederike Siller's dissertation "Medienpädagogische Handlungskompetenzen: Problemorientierung und Kompetenzerwerb beim Lernen mit neuen Medien" (Media Pedagogical Action Competences: Problem Orientation and Competence Acquisition in Learning with New Media) from the year 2007. Among other things, this work contains an in-depth examination of the concept of competence.

The thesis "What is 'digital literacy'?" by Doug Belshaw was chosen as another starting point for this master thesis. Since Belshaw explicitly formulated the claim for his thesis to make a contribution to pedagogical educational practice, this work appeared very promising in the context of Design-Based Research. At this point I would like to mention my personal interest in looking beyond the horizon of German-language media education and being internationally active. An approach via the term "media literacy" would also have been obvious, but this seemed to me to be potentially too close to the concept of media competence. Although this Master's thesis should contain a media pedagogical perspective, it should not be anchored centrally and rigidly in media pedagogy. It is also questionable whether this anchoring with the inclusion of digital literacy on the basis of current literature would be possible at all, at least according to Michael Kerres: "Interestingly, the German-language discussion, which since the 1970s has initially been centred around 'media literacy' and since around 2000 around 'media education',

⁴ A possible system for such a work can be found in Pietraß (2010), which distinguishes between the following approaches: Discursive approach, Functional approach, Theoretical approach, Practice-oriented approach.

is not very closely linked with the English-language discussion on media literacy or digital literacy" (Kerres 2017).⁵ Another argument for choosing Belshaw's thesis as a second entry point is his involvement in the Mozilla Foundation's Web Literacy Map as well as his involvement in the Open Badges Standards area.

The structure of Belshaw's thesis is to serve as a red thread in the following sections in order to make the derivation comprehensible. The aim is to work out derivations and references with regard to possible theoretical foundations which are indispensable in the research project in the sense of design-based research as well as for the further connectivity and further development of the resulting concept paper.

2.2.1 "What is digital literacy?"

Doug Belshaw arbeitete u.a. als Lehrer und legte 2012 seine doctoral thesis mit dem Titel „What is digital literacy? A Pragmatic investigation.“ an der University of Durham (England) vor. Diese beschreibt er explizit als „practical, useful thesis“ (Belshaw 2012: S.14). Kernstück seiner Arbeit ist die Auseinandersetzung mit „ambiguity“ (Vieldeutigkeit), er arbeitet in seiner Arbeit acht Elemente (8C) von Digital Literacies heraus.⁶ Belshaw formuliert die Herausforderung in Bezug auf digitale Technologien wie folgt: „The explosive growth in use of digital technologies for learning has left subject disciplines, government agencies and many practitioners with a problem. First, what do they call these new skills that are evidently required to function adequately in today's society? Second, how can these new skills be taught? And third, who is best placed to deliver these skills?“ (Belshaw 2012: S. 19).

2.2.2 Dealing with different (competence) concepts in an international comparison

Based on the questions formulated at the beginning of his thesis, Belshaw also looks beyond his own national borders and analyses how Singapore, the EU, Norway, the USA and Australia have dealt with these questions.

For example, the European Commission promoted the concept of "ecompetencies", which is linked to the political efforts on lifelong learning and in which the objectives

5 Kerres also refers to the anthology "Medienbildung in neuen Kulturräumen. The German-language and British discussion", which however already appeared in 2010 - two years before the publication of Belshaw's Thesis.

6 In the following sections I will integrate English quotations into German sentences again and again. This may sometimes seem like "Denglish", but is intended to prevent possible translation errors that lead to misunderstandings. A perfectly clean translation of some original quotations or terms is not affordable due to the limited scope of this work.

"ensuring equality of access (especially for women) and boosting skills relating to employability and the economy" are pursued (Belshaw 2012: p.20). Media use and the aspect of creation in the context of digital media are mainly part of the "Media Literacy" debate (Belshaw 2012: p.20). The EU-funded DigEuLit project (2004-2006) focused on the term "digital literacy", which for the European Commission (EC) can be classified on the basis of the strategy papers as follows: "Digital literacy [for the EC] is bound up with global economic competitiveness and closing what is often referred to as the 'digital divide'" (Belshaw 2012: p.21). Belshaw comes to the following assessment regarding the significance of both terms: "In the European context, therefore, digital literacy is a poor cousin to the more dominant cousin of media literacy. Whilst definitions of digital literacy almost always include elements of criticality and reflection, project reports tend to instead emphasise and stress 'e-inclusion'. Discussions around media literacy, for reasons explained in the next section on the UK, are more co-ordinated and focus much more on the critical and reflective elements of new literacies" (Belshaw: p.23). According to Belshaw, the Lisbon Strategy, which was intended to promote media and digital literacy between 2000 and 2010, can be seen as a failure. The *Europe 2020 Strategy* mentions digital literacy only once, so Belshaw does not expect much progress in promoting digital literacy and media literacy (Belshaw 2012: pp. 23-24).

Despite an active Media Literacy Taskforce (MLTF), Belshaw considered the UK government's efforts to work on digital literacy, including critical aspects, to be limited (Belshaw 2012: p.27). For the British government's "Race Online 2012" campaign, Belshaw points out that "'using a computer connected to the internet' and 'digital literacy' are seen as synonymous not only in this manifesto, but in wider publications by the government. The critical element of literacies of the digital is served by discussion of 'media literacy' with 'digital literacy' reserved for basic skills" (Belshaw 2012: p.25-26). From Belshaw's perspective, the MLTF produced a broad definition of media literacy (quoted from Belshaw 2012: pp. 26-27):

„A media literate society is... not a luxury, it is a necessity in the 21st Century – for social, economic, cultural and political reasons – as we try to make sense of a sea of Reality TV, iPod downloads and streaming video on the Internet. This is what encouraging media literacy is really all about: giving people the choice to communicate, create and participate fully in today's fast-moving world. And this will help create a society in which everyone is enfranchised – whatever their economic, social and ethnic background – and in which the UK's creative and knowledge economies are able to draw upon the widest possible bank of creators and producers.“

A look at Norway could be more promising than the EU-wide efforts and political initiatives in Great Britain: From 2004 to 2008, Norway's government pursued the goal of

making digital literacy available to all. Investments in infrastructure and the integration of information and communication technology (ICT) into the school curriculum were politically driven forward with the goal of "inclusivity and employability" (Belshaw 2012: p.28), comparable to the EU approach. The reform "The Knowledge Promotion" elevated digital literacy to fifth basic competence in the national school curriculum (alongside "reading, writing, arithmetic and oral skills"). Digital Literacy became mandatory for "every subject at every level of compulsory schooling" (Belshaw 2012: p.28). Regarding the terminology, Belshaw states that "Norwegian, however, does not use the word 'literacy' in the same way as it is used English, meaning that 'competence' and 'literacy' are used almost interchangeably." (Belshaw 2012: p.28).

But is Norway really a shining example? With reference to Almås and Krumsvik, Belshaw points out that the anchoring, despite the good efforts, is mainly ideological and rhetorical: "Essentially, Norwegian teachers are doing what they have always done, and traditional teaching methods and technology-free learning environments are dominant" (Almås & Krumsvik 2007: p.482 quoted from Belshaw: p.28). The authors of the ITU Monitor survey also come to the conclusion that the new basic competence in the national and local curriculum is rather vague (Belshaw: p.29). In the case of nationwide integration, questions of evaluation and measurability also arise. It is worthwhile at this point to reproduce Hatlevik's analysis of the Norwegian ITU Monitor report 2009, cited by Belshaw:

„There are several important challenges in the process of identifying and describing digital analysis: 1) to have a broader perception of digital literacy, ranging from demonstrating digital skills, such as the use of a specific software, towards production, ethical judgement, critical thinking, collaboration and creativity; 2) prevent assessment-driven teaching practices, such as by emphasizing the assessment of digital literacy as a formative evaluation; and 3) to ensure that the identification and understanding of digital literacy is theory driven and not solely defined from what is possible to measure in a quantitative way“ (Hatlevik 2009: S.173 zitiert nach Belshaw 2012: S.29)

Belshaw attaches great importance to the following analysis: "[D]igital literacy is not a 'fixed' attribute, and that not everything worth measuring can be measured" (Belshaw: p.29). With regard to language games, digital literacy was equated conceptually with digital competitiveness - congruent with the discourse in the European Commission - while media literacy plays a more prominent special role with reference to critical skills (Belshaw: p.29). However, this classification contradicts the whitepaper underlying the education reform, which defines digital literacy as "the sum of simple ICT skills... and more advanced skills that makes creative and critical use of digital tools and media possible" (Erstad 2007: p.3, quoted after Belshaw 2012: p.29) and the policy document

"eNorway 2009: the digital leap". In the latter, Belshaw identifies a "critical element at the core of the definition involving reflection upon using sources of information and digital tools effectively" (Belshaw 2012: p.30). The white paper also sums up the following: 'In total digital literacy can be seen as a very complex competence' (translation of Erstad 2007: p.3, cited after Belshaw 2012: p.30).

How has Norway responded to this complexity? In 2006, the *Nordic Journal of Digital Literacy* was launched, which accepted submissions in Norwegian as well as English. According to Belshaw, the original narrow focus on digital literacy shifted to a broad focus on New Literacies (Belshaw 2012: p.30). There is still confusion about the terminology, also because of the translation hurdles - often media literacy and digital literacy are used almost synonymously in Norway. In her search for reasons, Belshaw refers to the German-language educationalist Manuela Pietraß:

„Perhaps one reason for the recent shift in emphasis in Norway (and in Europe more generally) from digital literacy to media literacy is that, as Pietraß puts it, it 'lead[s] to much more satisfactory conceptions... than functional approaches' [...] [G]iven the difficulty in translating words such as 'literacy' into Norwegian, and words such as 'kompetanse' from Norwegian, 'media literacy' is a term preferred increasingly to 'digital literacy'." (Belshaw 2012: S.31-32)

Erstad also points out that research in this field in Norway has been using the term media literacy since the 1980s and that, in his view, media literacy as a holistic concept - in contrast to digital competence interpreted as basic skills - should be preferred to other terms such as media literacy, ICT literacy, digital literacy, information literacy and digital competence (Belshaw 2012: p.30). For reasons of scope, I will refrain from discussing the terms that have not yet been dealt with here.

Similarly, I can no longer go into Belshaw's analysis of the debate on literacy in Singapore, Australia and the USA in detail here. Belshaw's analysis that the vacuum at the national policy level in the USA calls various actors onto the scene in order to fill it with the respective perspective on new literacies seems most relevant to me here. A prominent example here is *Partnership for 21st Century Skills*, an initiative by companies such as AOL, Cisco, Microsoft, Apple and the US Department of Education (Belshaw 2012: p.41). In the P21 Framework the 4C are formulated as "Learning and Innovation Skills"⁷:

- Creativity and Innovation

7 See e.g. P21. o. J. "Framework for 21st Century Learning - P21". P21. Accessed 9 September 2018. <http://www.p21.org/our-work/p21-framework>.

- Critical Thinking and Problem Solving
- communication
- collaboration

In seiner Thesis prognostiziert Belshaw, dass „[d]ue to the backing of the Obama administration and major players (including government departments) it would seem inevitable that the landscape in the US will become polarised between digital literacy as basic, functional skills and information literacy as including (some) notions of criticality“ (Belshaw 2012: S.43). Belshaw schlussfolgert aus seinen Analysen, dass keine global dominierende Definition von New Literacies existiert, auch wenn die europäische Auseinandersetzung mit Media Literacy ebenfalls in der englischsprachigen Welt aufgenommen wird sowie Versuche unternommen wurden, eine einheitliche Definition zu schaffen (Belshaw 2012: S.44-45).

Wichtig zu erwähnen ist außerdem, dass bei der Auseinandersetzung mit literacies keinesfalls ausschließlich pädagogische Motive im Vordergrund stehen: „[N]ew literacies seems to be less about pedagogy and educational outcomes and more about individual nations' internal social cohesion and external competition. This internal social cohesion is often labelled 'citizenship' and usually closely linked to drives for 'efficiency' (for example in Singapore) or 'economic competitiveness' (Europe and Australia)“ (Belshaw 2012: S.43).

Festzuhalten bleibt für Belshaw ein „real need for rigorous yet practical guidance from researchers“ (Belshaw 2012: S. 46).

The complexity of the issue should have become apparent in the example of the dispute in Norway in connection with the English language as well as in the EU-wide debate.

2.2.3 The German-language debate on (media) competence and media education

For this Master's thesis, the link between the presented analyses and German-language debates is relevant. With a view to an international readership, Pietraß first distinguishes functional approaches from humanistic concepts before explicitly addressing the example of media competence. Pietraß defines functional approaches as follows: "Functional approaches to defining digital literacy derive from the technical possibilities of usage single competencies that the user has to be taught. [...] Such quantitative concepts look at the form and amount of the technical capacities a given medium demands" (Pietraß 2009: p.131). In these approaches, practices are differentiated into their smallest units, whereby - despite the derivation via the social context -

the meaning which, according to Lankshear and Knobel, is constituted in social interaction is neglected. *Writing* is more than entering letters on a screen, it is "reading and writing are always 'reading and writing' with meaning" (Lankshear & Knobel 2007: p.10, quoted from Pietraß 2009: p.131). Pietraß refers as an example to the ethnographic study of the eBay community by Julias Davies, in which, among other things, it is pointed out that an essential component of participation on eBay requires an understanding of community rules as well as strategies for the description of items in order to build trust with potential buyers (Pietraß 2009: p.132). Davies identifies the following elements of digital literacy in her study (Davies, 2008: p. 246, quoted from Pietraß 2009: p.132):

- „Understanding verbal and visual object presentations“
- „Self-presentation as seller or buyer and adopting these roles as part of one’s identity“
- "Critical reading"
- „Information seeking also outside of eBay“
- „Knowledge of the activity norms and values in this community“

Pietraß sees the study as confirmation that Internet use should be understood as a social practice and that the perspective on users plays an important role: "This conclusion is possible only when the internet usage is understood as social practice and not simply as digital technique" (Pietraß 2009: p.132).

The media literacy discourse from the "educational studies" leads to better concepts of digital literacy than the functional approach and offers potential to contribute to the definition of digital literacy, according to Pietraß (2009: p.132). This possible contribution is associated with an important limitation, which is particularly relevant for this Master's thesis:

„Though [the media literacy discourse of educational studies] provides a more humanistic concept, which is suited to overcome functionalism, it has to be enlarged in regard to its understanding of media: digital media brought a change from a receptive to a more productive usage. Consequently, the media literacy discourse is only partly suited to digital media.“ (Pietraß 2009: S.132)

It should be noted here that it is precisely the enormous media upheaval from more receptive-oriented media uses to productive, interactive uses that should always be critically considered if discourses on media literacy are to be included in current contexts. To put it naively, one could express in an exemplary way that not everything

has changed fundamentally from the VHS cassette and broadcast on television to the video file upload on YouTube⁸, in terms of film reception, production, etc., and that this has not all changed fundamentally. Previous concepts from the media literacy discourses are therefore not completely obsolete - but new aspects have been added which need to be examined and which could be discussed under the term digital literacy.⁹ For this, however, a humanistic and pedagogical approach to the definition of digital literacy would be required, as has already been shown.

Pietraß erwähnt Bucking, Jenkins, Lankshear und Knobel als „media educators“, welche in diesem Sinne an einer kritischen Auslegung von Digital Literacy arbeiten - bemängelt aber, dass vielen Definitionen von Media Literacy eine pädagogischen Theoriegrundlage fehlt: „Unfortunately, many definitions of media literacy lack grounding in such a vision of digital literacy of the user. Taking young or less educated people as a subject does not per se make an educational approach. Additionally, there has to be a theoretically based educational point of view that justifies pedagogical interventions and defines pedagogical needs“ (Pietraß 2009: S.132-133).

2.2.3.1 Media competence according to Dieter Baacke

The name Dieter Baacke is known to many people working in the educational field in Germany, Pietraß describes him as the most famous German "media educationalist" (Pietraß 2009: p.133). The "Dieter Baacke Prize" is awarded, for example, by the Gesellschaft für Medienpädagogik und Kommunikationskultur (GMK) and the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth to exemplary projects in education, social and cultural work.¹⁰ From the 1970s, Baacke coined the term "media literacy", which is thus used much more frequently in Germany than media literacy (Pietraß 2009: p.133). Baacke's concept was based on the theoretical basis of Chomsky and Habermas' work and was designed as a "communicative competence":

„Due to this theoretical origin, Baacke’s concept distinguishes between 'ability' as a natural gift that every human is endowed with by birth, and 'performance', which refers to the realization of this gift in competent communication. Pedagogically, what is crucial is that the ability to communicate does not lead automatically to perfectly communicating individuals. To further a competent use of this natural gift to communicate, education is needed.“ (Pietraß 2009: S.133)

8 See the example mentioned above to investigate the Davies eBay community at the time. It remains to be critically noted that eBay has changed a lot in the meantime and I personally would speak less of a community in the meantime, but this is a side note.

9 See also the change of leading media discussed at Döbeli Honegger (2017).

10 Further information here: <https://www.dieter-baacke-preis.de/dieter-baacke-preis/info/>

Baacke's concept originated from the (Western) situation in the 1970s, in which mass media and especially advertising were regarded as manipulative by Critical Theory¹¹. According to Pietraß, Baacke's concept thus had an emancipatory background: "The younger generation Baacke belonged to wanted to change the existing political, educational and economic circumstances. It was their aim to encourage and to enable the individual to political participation by using the mass media for public communication" (Pietraß 2009: p.133). Baacke conceived four aspects which Pietraß translates into English as follows (Pietraß 2009: p.133)¹²:

- „Media critique: allows the user to be critical of media communication and of its systematic function and manipulation“
- „Media knowledge: arising from media sciences; it helps the user to gain a critical attitude“
- „Media usage: encompasses technical abilities and insight into the role and reactions of the audience“
- „Media production: means a creative use, which fosters emancipation and helps to improve the media system“

The tension between theory and practice in education has already become more than clear through the examination of design-based research. As far as the concept of competence is concerned, there is a danger here of resorting to the functional approaches already mentioned. Baacke therefore falls back on education - a term that, according to Buckingham at least, can be connected to literacy:

„The weakness of the theoretical conception of competence, Baacke critically claims, is its 'empirical void', which has to be 'filled'. [...] To avoid this, Baacke suggests the German term Bildung (i.e. education in the sense of self-formation) instead of competence, referring to a humanistic concept of self-education, which means to gain a lifelong, subjective and critical perspective of the world. [...] It stems from the Enlightenment and corresponds, as Buckingham (2007: 80) points out, to the Anglo-American concept of literacy in contrast to 'competence'.“ (Pietraß 2009: S.133-134)

Durch die Einführung des Bildungsbegriffs rückt somit der oder die Nutzerin ins Zentrum der Überlegungen. Diese Gedanken sind nun von einem philosophischen Verständnis von Kompetenz geprägt: „The notion of Bildung directs the focus to a theoretical base of media literacy, which is user-centred in defining the aims of media literacy. It is a way out of the hidden functionalism of many media technique-driven conceptions

11 social theory, also known as the "Frankfurt School"

12 At this point, the English source of Pietraß was deliberately used to better relate debates.

media literacy to English

since it understands a competent usage from a philosophical approach: media usage shall help the individual to grow; single competencies are just a step to support this growing (e.g. Marotzki/Jörissen, 2008; Meder, 2007; Pietraß, 2006; Sesink, 2008)“ (Pietraß 2009: S.134). Hervorgehoben sollte hier sicher auch der Aspekt des „Lebenslangen Lernens“, welcher mit „a lifelong, subjective and critical perspective of the world“ adressiert wird.

In the following, Pietraß formulates a demarcation line, which was already mentioned by Belshaw (economic competitiveness as a driver for competence promotion, e.g. in the analysis of the EU), and which will potentially accompany this Master's thesis further: "Understood in the light of the notion of education, digital literacy is not economically valuable, but valuable for the individual" (Pietraß 2009: p.134). Pietraß further states: "The media literacy discourse is mainly based on a philosophical concept of (mass) media that illuminates their communicative function as that of representation of reality" (Pietraß 2009: p.134). With the change from Web 1.0 to Web 2.0, in which interactivity was introduced as a new mode of media use for the masses, a paradigm shift is taking place, "a shift from 'reading' to 'writing', from receiving to producing" (Pietraß 2009: p.134). In the sense of Baacke, the media competence aspect of "media design" thus gains more weight, which should enable individuals to emancipate themselves from effects such as manipulation by mass media (Pietraß 2009: p.134). This was intended to achieve two objectives at the time: a) to counteract the problematic and potentially powerful influence of the media, for example in order to protect public opinion formation in the sense of Critical Theory against attempts at manipulation, also in a critical relation to consumer society. And b) to make the new media techniques accessible, so that one's own needs can be articulated and creatively worked on, as well as that a better understanding of media (manipulations) or production methods can be achieved through this active debate (Pietraß 2009: p.135). One result of these efforts was, for example, the Open Channels in Germany.

Even if these goals (and associated positive effects such as self-empowerment through articulation) continue to have significance, according to Pietraß this understanding of (media) production and design cannot be completely transferred to today's circumstances (Pietraß 2009: p.134). The core of the criticism of media literacy is the fact that "Representation of reality is only one part of digital communication. The sociality of web 2.0 augments the importance of active participation. [...] The change in interactivity shows why the often-described activity of identity building is one of the most important characteristics of digital literacy" (Pietraß 2009: p.135). As supporting evidence, Pietraß refers to the JFF, which has identified the three components *interaction*, *articulation*

and *participation* for digital literacy (Pietraß 2009: p.135). Pietraß sees a shift from presentation to representation and also uses Jenkins et al. for this: "Correspondingly, Jenkins and colleagues (2007: 98) point out that meaning on the internet is constituted in a social and cultural environment, which demands that ' new media literacies' should be seen ' as social skills, as ways of interacting within a larger community, and not simply an individualized skill to be used for personal expression' (2007: 98)" (Pietraß 2009: p.136).¹³ Pietraß comes to the following preliminary conclusion in its proposal:

„For such a conception of digital literacy, a theoretical framework is needed, one that understands communication as interaction.“ (Pietraß 2009: S.136)

Pietraß explores the framing theory of Goffmann for precisely this need - an exploration which will not be further developed in the following. For this master thesis, however, Pietraß's conclusion remains relevant as a possible goal for a concept:

"Technique-driven concepts of digital literacy reduce the understanding of the capacities needed to participate successfully in virtual society. The media competence discourse uses a more humanistic concept and as such is a better basis on which to define digital literacy than the digital technique itself. From this discourse, three main requirements have been raised to access digital literacy from a non-functional point of view: 1) digital literacy has to be defined with focus on the user and not on the medium; 2) digital literacy has to take into account the shift from a more receptive to a more productive usage; and 3) digital literacy concepts have to have the potential to be used by practitioners" (Pietraß 2009: p.140).

What could be inferred from Pietraß's remarks? Aspects such as communication, interaction and networking characterise the current framework conditions of today's world. Approaches such as media literacy or media competence could therefore only be used to a limited extent and satisfactorily for attempts to define digital literacy.

It should be noted here that in addition to Baacke's model, other models for media competence have been developed, e.g. by Aufenanger, Groeben, Moser, Tulodziecki.¹⁴ Also, breakdowns of media competence are to be systematically incorporated into school lessons, driven among other things by agreements of the Conference of Ministers of Education and Cultural Affairs (KMK)¹⁵ and the resulting implementations in in-

¹³ An in-depth examination of *New Media Literacy Studies* can be found at Belshaw 2012

¹⁴ A comparison table can be found among others here: <https://blogs.uni-bremen.de/bildungslab/2015/03/04/weitere-gedanken-zu-ew-l-go3d-unterrichtsmethoden-nutzung-von-multimedia-eteachr/> (retrieved on 13.09.2018)

¹⁵ See *competence_framework*
https://www.kmk.org/fileadmin/Dateien/pdf/PresseUndAktuelles/2017/KMK_Kompetenzen_in_der_digitalen_Welt_neu_26.07.2017.html and the corresponding publication
https://www.kmk.org/fileadmin/Dateien/pdf/PresseUndAktuelles/2016/Bildung_digitale_Welt_Webversion.pdf

dividual federal states such as the "NRW Media Competence Framework".¹⁶ The KMK publication "Education in a digital world", for example, mentions the following points of reference for its competence framework (KMK 2016):

- "the 'DigComp' competence model commissioned by the EU Commission and developed in extensive studies by the Institute for Prospective Technological Studies, JRC-IPTS".
- the "Competence-Oriented Concept for School Media Education" of the State Conference on Media Education of 29.01.2015, which is widely known in Germany, and
- "the model of 'computer and information-related competences' underlying the 2013 ICILS study 'Computer and information-related competences of pupils in grade 8 in an international comparison'".

The objective of the NRW Media Literacy Framework is described as follows:

Mit der Neufassung des Medienkompetenzrahmen NRW hat Nordrhein-Westfalen sein bewährtes Instrument der systematischen Vermittlung von Medienkompetenz nun konsequent auf nationale und internationale Entwicklungen abgestimmt. Die sechs Kompetenzbereiche mit insgesamt 24 Teilkompetenzen umfassen die gesamte Kette der Bildung. Sie zielen nicht nur auf die systematische Medienbildung entlang der gesamten Bildungsweg ab, sondern umfassen auch schulische und außerschulische Lernorte und bilden die Richtschnur für die bevorstehende schrittweise Überarbeitung aller Kerncurricula der Fächer, die unterrichtet werden. "(Media consulting NRW 2018)

2.2.3.2 Media education and other concepts

Michael Kerres also sees the work on the concept of media education in recent years as an attempt by several authors to avoid "the narrowing of the concept of media competence as it is used in public discussion (Tulodziecki, 2015; Meder, 2007; Spanhel, 2010; Jörissen & Marotzki, 2009; Bardo Herzig, 2012; Moser, 2006; Bachmair, 2010; B. Herzig, 2001)". (Kerres 2017: p.7). At this point, the concept of media education cannot be presented in detail. As an example, I would like to refer¹⁷ to Benjamin Jörissen's blog article "Medienbildung in 5 Sätzen" ("Media Education in 5 Sentences"), which, from my point of view, well illustrates the great challenge of the reception and interpretation of such educational-theoretical considerations.

¹⁶ See also https://www.medienpass.nrw.de/sites/default/files/media/LVR_ZMB_MKR_Broschuere_Final_1.pdf (Retrieved on 13.09.2018)

¹⁷ Jörissen, Benjamin. 2013: "'Media Education' in 5 sentences - Culture & Aesthetic Education". 2013. accessed 9 September 2018. <https://joerissen.name/medienbildung/medienbildung-in-5-satzen/>.

Kerres (2017) also notes that the proposal to move away from the media literacy construct had been put forward earlier. Kerres introduces the term combination "education in a digital world" into the debate as his own proposal and highlights two poles:

"The reduction of media competence or media education to the operation of devices is rather trivial, "on the other hand, media competence or media education is sometimes regarded in a very abstract way as the ability to open up the knowledge of culture about media, to express oneself through media and to participate in social discourse. There is thus a danger that the construct will dissolve into considerations such as those described in Habermas' Theory of Communicative Action (1981), when it is fundamentally about the actions of people in societies (cf. Schäfer, 2005). This is due precisely to the fact that the actions of people in modern societies function essentially with and via (technical) media - only that the role of the media in sociology and educational science is seldom considered clearly enough. " (Kerres 2017: p.8-9)

In summary, Kerres formulates the challenge as follows:

"The discussion of media pedagogy dissolves equally when it is reduced to service skills and also when it dissolves into the ubiquity of the social. It is either too close to technology or too far away from the concrete concerns of media education. " (Kerres 2017: p.9)

Kerres sees a possible way forward in the structuring that Beat Döbeli Honegger presents in his work "More than 0 and 1: School in a Digitalized World": "It is about the ability to a) understand digital technology, b) use its functions for access to knowledge, the development of identity and participation in society, and c) reflect on its implications" (Kerres 2017: p.9).¹⁸

Pietraß refers to the necessary orientation power of terms that can be decisive for politics and teaching. It highlights, for example, youth research, which refers to diverse forms of appropriation of media content, yet "the discourse still suggests the possibility of a uniform definition of media competence. For media pedagogy as a discipline this is to be seen as an advantage, since it was precisely the concept of media competence adopted by educational policy that helped it to gain a growing public reputation" (Pietraß 2010: p.74). Pietraß points out that it is not exclusively a matter of the empirical and theoretical validity of concepts, but that the interpretative sovereignty of a discipline is potentially at stake:

¹⁸ Kerres also refers to the "Dagstuhlerklärung" co-developed by Döbeli Honegger, see Döbeli Honegger's comments on the creation of Döbeli Honegger, Beat. 2017: "Dagstuhl-Dreieck: - Beats Blog - Weblog von Beat Döbeli Honegger". 2017. accessed 9 September 2018. <http://blog.doebe.li/Blog/DagstuhlDreieck>.

"Media pedagogy thus faces the problem of creating theoretical uniformity in the empirical diversity of forms of media competence. One might regard such an undertaking as hopeless, as Bawden (2008; p. 28) does, because computer competence is neither definitively determinable for every individual nor over his lifetime. Then, however, media pedagogy would have to give up seeking a uniform definition of competence with the danger of functionalisation and narrowing the term to singular partial competences [...]. " (Pietraß 2010: p.74)

Pietraß also sees the turn towards the concept of media education and the theoretical examination of it as an attempt to counter the deficient foundation of the concept of competence with pedagogical theories. Previously, communication and media theory approaches predominated (Pietraß 2010: p.83).

2.2.3.3 The concept of competence by Franz Emanuel Weinert

Educational policy dimensions as well as economically-oriented needs have already been addressed. At this point, the concept of competence according to Franz Emanuel Weinert will be chosen as an example to illustrate the contrast to the emancipatory derivation of media competence via Habermas. Friederike Siller chose in her dissertation "Medienpädagogische Handlungskompetenzen. Problem orientation and competence acquisition in learning with new media" a learning-theoretical perspective from there otherwise "the myths and ideological errors of the humanistic understanding of education would first of all have to be the subject of analysis themselves" (Siller 2007: p.5). In her work, she also ignores the clarification of the relationship between education and competence in this context. According to Siller, however, a reflexive distance to the field in which one moves oneself is necessary for the confrontation, if one deals with the preparation of a work with reference to current competence debates (Siller 2007: p.5). She classifies the concept of competence and media pedagogy as follows: "The German media pedagogical discourse builds on the concept of competence like hardly any other sub-discipline of educational science. In the relevant media pedagogical journals, most authors follow an argumentation that anchors the necessity of integrating new media into teaching and learning processes in the transformation to a 'knowledge society'" (Siller 2007: p.5). The starting point of her work was the practical problem of how a learning effect can be scientifically determined in a multimedia learning application for media pedagogical teacher training. For this there was a lack of a "content model for determining learning objectives (here: media pedagogical competence)" (Siller 2007: p.6). At the beginning of her dissertation, Siller refers to the ambiguities that have arisen through the broad use of the concept of competence:

"The adoption of the concept of competence in the educational policy debate and the associated ramifications led to a concealment of the term. At present, competence is used as a catchword - largely detached from the competence-theoretical debates of the last decades - in different references, functionalities and modes of use, thus promoting the erosion of the term through ambiguities within and outside the sciences. Weinert (1999a, p. 3) characterises the situation as paradoxical in that everyone thinks they know what is meant by the concept of competence, but on the other hand no agreement can be reached on a differentiating concept. " (Siller 2007: p.6)

Siller cites the classification of Sutter and Charlton from 2002, which distinguished three main lines of discussion (Siller 2007: p.10):

1. The primarily linguistically formed concept of competence, with reference to performance by linguist Noam Chomsky
2. The "adoption of this linguistically determined concept of competence in the context of the linguistic turn in the social sciences \[,] [...] especially by Jean Piaget and his model of cognitive development" (Siller 2007: p.10)
3. "[T]he use of the concept of competence in sociological analyses of socialisation and society, as carried out primarily by Jürgen Habermas" (Siller 2007: p.11)¹⁹

Siller identifies a possible fourth debate, but diagnoses its clear shortcomings: "For in current educational policy references the term is currently being used in an inflationary manner, which at first glance seems to lack any theoretical basis. The rhetorical power which in this context emanates from this concept should not be underestimated. Recent media-pedagogical debates move to a large extent in close relationship to this rather pragmatic use of the concept of competence" (Siller 2007: p.11). For Siller, the education-related debate about competences is also an indication that "the inflationary use of the concept of competence probably also reflects the desire on the part of society and those responsible for education policy for new concepts beyond the concept of education" (Siller 2007: p.12).

In her work, Siller considers both the communicative derivation via Habermas and the educational debate just mentioned:

For the common use of the term "media competence" takes place in a 'melange' of both concepts - this is the basic assumption. On the one hand, the term expresses an emancipatory claim and thus defends social relevance: Participation in democratic society demands the 'media-minded' citizen. On the other hand, media literacy is introduced as a key competence for participation in the information and knowledge society: Without a competent handling of the

19 An in-depth examination of this concept can be found in Siller 2007: S. 19-22

information and knowledge stocks conveyed by the media, one runs the risk of no longer being able to keep up. " (Siller 2007: pp. 12-13)

On the one hand, the emancipated participation as well as the already mentioned participation in a knowledge society, which is ultimately also connectable to economic competitiveness, is addressed. With regard to the latter aspect, vocational training should be mentioned here, in which, among other things, the concept of Weinert's competence is applied. Siller notes that universal and general claims play a subordinate role compared to pedagogically-driven theoretical debates. In the context of vocational education and training, "the question is posed as to what constitutes competent action along the 'contemporary' requirements of society. Accordingly, competencies in the tendency are discussed concretely and closely in the context of exploitation" (Siller 2007: p.23). Competence is "now understood as the result of learning processes. According to this notion, competences are neither innate nor the product of maturing processes, but are produced as far as possible self-organised by the individual (Erpenbeck/Rosenstiel 2003[)])" (Siller 2007: p.23). In the context of "a shift from an orientation towards inputs to an orientation towards outputs, Siller criticises [that] [...] [d]he gaze [...] is focused on what subjects can demonstrate at the end of a (training) process, on 'knowledge of real competence'". (Siller 2007: p.23). Such views do not remain without consequences:

"The education policy competence debate 'spills over' into the sciences, which are increasingly opening themselves voluntarily and involuntarily to public discourses on education and training. At present, the competence-scientific disputes in this context seem very eclectic - in comparison to a relatively closed scientific discourse, as it could be described at Habermas. But without theoretical 'working off' of concepts and without a discursive discussion, only a loose consensus on what is understood by competences can be agreed upon, and the lack of contours in the use of concepts easily becomes a program: the concept of competence becomes a filling surface for everything; depending on discipline and context, it sometimes assumes one function, sometimes the other" (Siller 2007: pp. 23-24).

For Siller, Weinert is one of several reference authors who provides basic papers "in the midst of diffusivity" (Siller 2007: p.24). In 1999 and 2001 Weinert prepared reports for the OECD in which he distinguished between "an analytical [view] according to which action competence is to be understood as a bundle of partial competences and a functional [view] according to which concrete action represents competence in a specific technical context" (Siller 2007: p.24). In 1999 Weinert recommends to the OECD the functional definition of the concept of competence, which is located in expertise research. The consequence of this localisation is that "the domain-specific knowledge and skills of an expert are put in the foreground, while the superior and general competence

to act is devalued as too unspecific. If the orientation towards experts of a subject or a domain is the guideline for education and learning, then, according to a functional point of view, competence cannot be considered detached from the contents of the corresponding learning area" (Siller 2007: p.26).

Siller chooses the following formulation as Weinert's reference quote and frame of reference, partly because a purely cognitive definition of the concept of competence would be considered too shortened:

"[Competences as] [...] the cognitive abilities and skills available to individuals or learnable by them to solve certain problems, as well as the associated motivational, volitional and social readiness and abilities to be able to use the problem solutions successfully and responsibly in variable situations" (Weinert 2001: p. 27f., quoted after Siller 2007: p.26).

The complexity of such a definition becomes clear in the following interpretation, which I would like to present here in full, as it may represent an important orientation with regard to the assumptions in the context of design-based research:

"In addition to the cognitive components of the competence concept, individual characteristics are now added: competent action is defined as an interplay of different facets, namely ability, knowledge, understanding, ability, action, experience, motivation (Weinert 2001). The intellectual abilities of individuals, i.e. for example their ability to reason, to think analytically, their ability to think across disciplines or their ability to think analytically. -The "new" competences, their basic competences, i.e. their ability to read, their mathematical and scientific competence as well as their motivational orientations, such as their expectations of self-efficacy and their willingness to make an effort, together with not least their moral abilities, are incorporated into the mastery of vocational tasks' (Breuer 2005, o.S.). Learners, it is assumed, therefore bring their individual learning prerequisites into a certain requirement situation and, depending on their level of development, are either able or not able to adequately solve the problem. Even if the individual learning prerequisites without cognitive, subject-specific 'expertise' are not sufficient to cope with a requirement situation, they represent an essential, elementary link for the execution of competent action. A competence for action defined in this sense describes a multidimensional concept and spans a quite demanding framework" (Siller 2007: p.27)

From Weinert's guiding principles for the²⁰ application of this functional understanding of competences, Siller formulates the following assumptions about structural characteristics (Siller 2007: pp. 27-35):

1. Assumption: Competence based on domain-specific knowledge and skills

²⁰ See also Siller 2007: p.27-28

2. Assumption: Competence establishes the connection between knowledge and skills.
3. Assumption: competence is transferable and can be learnt
4. Assumption: Coping with requirements is an indicator of competence.

2.2.3.4 (Habermas &) Baacke vs. Weinert?

In this work, several models and conceptions have already been cited - in a greatly abbreviated form. Habermas' model refers to linguistic actions and is determined by the fundamental guiding idea that "[Habermas] attributes to subjects an indestructible moment of communicative rationality. For him, the last point of reference for people in everyday life and science is reason. Following universal pragmatics, he assumes that human communication is a priori oriented towards consensus" (Siller 2007: p.35).

Baacke transfers this concept into media pedagogy and goes

"It is based on the assumption that competence in linguistic action is what enables subjects to actively participate in the negotiation of the world and discourses in the first place. Baacke transfers the socio-critical and emancipatory impetus of Habermas' competence theorem to pedagogy: contrary to a pragmatism that reduces action competence to coping with the real, predetermined life situations of subjects, Baacke insists on a 'communicative norm' that is accessible to every subject. Baacke distinguishes himself from Habermas in that he assumes communication competence not only in dealing with language, but in an expanded sense in dealing with media in general. He opposes a rational shortening of the concept of competence and wants dimensions such as corporeality or imagery to be integrated. Contrary to an a priori existing basic competence, Baacke assumes a basic possibility or necessity to acquire, learn and practice communicative competences in the course of one's own biography" (Siller 2007: p.35-36).

The definition of Weinert's concept of competence is characterized by Siller's great distance from universal and general demands to the question of what constitutes competent action in our society. This question can be approached from an analytical or functional point of view. In the latter view, expertise research is mainly included and "[...] concrete action [is] in the foreground, [which] is carried out in a specific context. Accordingly, competencies are understood as predominantly cognitive performance dispositions that represent sector-specific skills as prerequisites for mastering challenging tasks" (Siller 2007: p.36).

How can these two approaches of Baacke and Weinert now be evaluated? Siller does not regard direct comparison as an appropriate approach: "The fundamental differences between the two models are obvious: here the universal claim to communicative rationality, there the domain-specific, close-meshed orientation to expert knowledge;

here the emancipatory claim in the context of a comprehensive social theory, there the relative restriction to vocational field orientation and its concrete requirements" (Siller 2007: p.37). According to Siller, the comparison does not do justice to the authors and "[d]he places of negotiation of the concept of competence are too far away for a comparison" (Siller 2007: p.37).

This assessment may seem irritating from a superficial perspective on media pedagogy, but from my experience media pedagogical actors are present at various panels and conferences; sometimes these events are more pedagogically influenced, sometimes more oriented towards the needs of vocational education and training. From Siller's perspective, [d]ie Medienpädagogik [...] directs its theoretical competence steps sometimes in one direction, sometimes in the other. On the one hand, a 'reflection' on their roots takes place in a reliable regularity: With Baacke and his recourse to a communicative competence model according to Habermas, the emancipatory claim of media pedagogy is defended" (Siller 2007: p.37). Siller identifies some gaps and points of criticism, among others the too non-binding reference to the theoretical anchor point of Habermas or the missing, profound continuation of Baacke's competence model, which should go beyond the limits of Habermas' linguistic action, as already mentioned. For Siller, the basic requirement is that "[e]ine has to be the definition of media competence directed at society (and thus at the development of maturity and the ability to participate) [...] in some form the result of a social theoretical debate" (Siller 2007: p.38). According to Siller, the further developments of Habermas's social theory in recent decades in various disciplines have not been sufficiently addressed (Siller 2007: p.38).

On the other hand, Siller - with a view to Weinert - provocatively states, "[...] that media pedagogy follows the 'fashion of the times' in order to remain a discussion partner. A look at current project applications, education policy papers, expert opinions and statements makes it clear that in most cases the argument that the acquisition of media competence as a key competence for participation in the knowledge society requires support is followed" (Siller 2007: p.38).

Finally, for Siller it remains to be noted that "[d]he media pedagogy [...] appears to be difficult to do in the straddle between a discipline-internal competence-theoretical confrontation and the introduction of concrete and operationalizable competence drafts, which tend to be demanded from outside and are suitable for practical action" (Siller 2007: pp. 38-39). This problem can be connected to the DBR approach, which has already been broken down, and which also addresses a gap between practical benefit

and contribution to scientific theory. The Sillers versions can also be connected to the Pietraß finishes.

How can such an area of tension be resolved? Siller doubts that a consistent, media pedagogical view must be the solution:

"Perhaps it is not so much a question of building bridges between the different approaches and of trying to bring about a consistent 'media pedagogical attitude'. But the vehemence with which the concept of competence in media education is defended across the board demands - and here the circle between a communicative model of action sensu Habermas and Baacke and current competence discussions is closing for the time being - a comprehensive, media education theory debate" (Siller 2007: p.39).

This theoretical debate cannot be comprehensively carried out in this work. This thesis, however, has the claim to take a media pedagogical perspective on projects in which competences are promoted. In this respect, this stress field of the described slide position must be critically considered and observed: There is no *single* media pedagogical concept of competence that all German-speaking actors share.

In her dissertation, Siller also examines German-language competence research in general and identifies two lines: "On the one hand, there is the attempt to define competent action and to describe causal or statistical relationships that allow statements to be made about future actions by individuals or the derivation of measures to promote competence. The approach is pragmatic[.] On the other hand, there are efforts to classify competences holistically in the personality structure of a subject and to place them in contexts of meaning and meaning. At the methodological level, therefore, description procedures are applied by means of which competence developments are to be traced in the context of the conditions of their emergence" (Siller 2007: p.65). According to Tippelt and Edelman, three methodological approaches to competence measurement can also be distinguished (Siller 2007: p.65-66):

1. "Competences in the sense of holistic personality dimensions against the background of lifelong learning" (e.g. through competence diagnosis and self-assessment)
2. "Competences as educational goals within the framework of the discussion on educational standards" (performance comparisons between groups on the basis of competence models with competence levels)
3. "Competences as narrowly defined professional skills subject to training" (direct observation of learners)

Siller comes to the following conclusion, which is relevant for DBR projects:

"From a media pedagogical perspective, different forms of competency models can be helpful. At a higher level, competence models that include ideas about the development of competences and their 'rough structure' are indispensable. Especially with regard to a (meta-)theoretical discussion, such a model can be an anchor point for further differentiation. In the context of concrete empirical research, on the other hand, the connection to the above-mentioned considerations seems to make sense. How can differences be made visible within a formally perhaps homogeneous group (e.g. in a university seminar)? The empirical treatment of such a question enables a constructive handling of the research results in media pedagogical practice. At the methodological level, this means that longitudinal studies will be necessary in particular to trace individual development processes." (Siller 2007: p.68)

2.2.4 Current debates

2.2.4.1 The Future of Media Education, References to Informatic Education and Competence Models

The thesis paper "Futurelab Medienpädagogik: Qualitätsentwicklung - Professionalisierung - Standards" contains, among other things, the following demand: "The consistent promotion of media competence in its required breadth makes it necessary to formulate levels of competence not only for schools, but also for other stages of education and training" (Knaus et al. 2017: p.5).

In addition, the following objective description can be found in the thesis paper:

"It is desirable that all people should be able to at least fundamentally comprehend the technology itself, the algorithms on the basis of which it works, as well as processes of the emergence and reproduction of knowledge in general. Only those who have the knowledge of what is going on behind the user interface - behind the machine interface - can receive and communicate competently and confidently (cf. Knaus 2017b). Therefore, comprehensive media literacy requires a conceptual understanding of technology and at least fundamental aspects of computer education. " (Knaus et al. 2017: p.5)

Bardo Herzig (Herzig 2016), Beat Döbeli Honegger (Döbeli Honegger et al. 2013; Döbeli Honegger 2013; Döbeli Honegger 2016) and Gerhard Tulodziecki (Tulodziecki 2016), among others, have discussed the relationships between computer education, computer science and media education. This work was taken over into the theoretical background of this work on the basis of the Dagstuhl declaration (Gesellschaft für Informatik e.V. 2016).

How the above-mentioned formulations of competence levels currently emerge scientifically in the context of media and education can be traced in Brandhofer et al. using the example of "digi.kompP - Digital Competences for Teachers" (Brandhofer et al.

2016). At Michael Eichhorn and Ralph Müller there is a "Competence grid as the basis for digital proof of competence in eLearning qualification offers" (Eichhorn & Müller 2018).

At the level of education administration, the OECD is working on a framework for "Education 2030"²¹, the EU Commission published the updated model "DigComp 2.1. The digital competence framework for citizens with eight proficiency levels and examples of use" (Carretero et al. 2017) in 2017, and at the national level in North Rhine-Westphalia the aforementioned NRW Media Competence Framework was published for schools in June 2018 (Medienberatung NRW 2018)²². At many levels, the debate on skills, competences, literacy and education is by no means over.

2.2.4.2 The controversy over media literacy and "fake news"

The previous demands should already have shown that the theoretically founded treatment of the concept of competence from a media pedagogical perspective is not entirely uncomplicated. A²³ brief look should be taken at a controversial debate between the scientists danah boyd²⁴ and Renee Hobbs. The context of this debate was the so-called "Fake News", which was strongly discussed, among other things, with regard to the US election campaign 2015/2016. The debate was initiated by boyd, who published an article in January 2017 under the title "Did Media Literacy Backfire?"²⁵ One of the core aspects of the article was the controversial question of whether the promotion of a media-critical attitude (in the sense of media literacy) does not rather promote negative effects such as a loss of confidence in politics or the media. A reply to the article came from Renee Hobbs a few days later.²⁶ Boyd followed up in March 2018 with a release under the title "You Think You Want Media Literacy... Do You?"

21 OECD. n.d. "OECD Education 2030 - OECD". OECD. Accessed November 1, 2018. <https://www.oecd.org/education/2030/>.

22 MSB NRW. 2018 "[26.06.2018] Media Competence Framework NRW. School mail." Ministry for School and Education of the State of North Rhine-Westphalia. 2018. accessed November 1, 2018. <https://www.schulministerium.nrw.de/docs/bp/Ministerium/Schulverwaltung/Schulmail/Archiv-2018/180626/index.html>.

23 It should be noted that Siller's findings date back 10 years. A comprehensive review of their findings at that time cannot be carried out in this work.

24 Wikipedia refers to the spelling "danah boyd". Accessed 23 October 2018. https://de.wikipedia.org/wiki/Danah_Boyd

25 boyd, danah. 2017. "Did Media Literacy Backfire?" Data & Society: Points (blog). 5 January 2017. accessed 23 October 2018. <https://points.datasociety.net/did-media-literacy-backfire-7418c084d88d>.

26 Hobbs, Renee. 2017. "Did Media Literacy Backfire?" Renee Hobbs at the Media Education Lab (blog). 9 January 2017. accessed 23 October 2018. <https://mediaedlab.com/2017/01/09/did-media-literacy-backfire/>.

„For the last year, I've been struggling with media literacy. I have a deep level of respect for the primary goal. As Renee Hobbs has written, media literacy is the "active inquiry and critical thinking about the messages we receive and create." The field talks about the development of competencies or skills to help people analyze, evaluate, and even create media. Media literacy is imagined to be empowering, enabling individuals to have agency and giving them the tools to help create a democratic society. But fundamentally, it is a form of critical thinking that asks people to doubt what they see. And that makes me nervous.“²⁷

The criticism she received was processed in the article "A Few Responses to Criticism of My SXSW-Edu Keynote on Media Literacy"²⁸. Even though many points of the debate refer strongly to the difference between "liberal" and "conservative" in the USA, critical moments of reflection can also be drawn for the German-speaking countries. The controversial question of boyds was taken up by Valentin Dander:

"Another aspect should also make media pedagogues sit up and take notice: The economic situation and the continuing shift to the right, the nationalist, racist and religious fundamentalism with which we are confronted not only in Europe and the United States, are in themselves a threatening scenario that is often compared with the 1930s. When the popular movements that use media arenas in the sense of right-wing populist and fascist parties make use of digital communication technologies effectively and competently on the one hand and at the same time call established media institutions "fake news" and "the press of lies" on the other, the best hopes for media competence seem to have been reversed. We have to ask ourselves like danah boyd: "Did media literacy backfire?" (boyd 2017) Media use and media criticism have become useful means for inhuman actions. Not criticism or maturity, but self-criticism seems to be the aspect that this "half-media competence" (Damberger 2013) lacks in order to become a "good" media competence." (Dander 2017)

Here, too, it becomes clear that new, changed or adapted ideas of "digital competences" or even "media competence" or "media education" could be urgently needed with a view to social change processes. In this context, questions such as "What is truth?", "What is objectivity?" or "How does society come to knowledge?" arise again.²⁹

27 boyd, danah. 2018. "You Think You Want Media Literacy... Do You? - Data & Society: Points". Data & Society: Points (blog). 9 March 2018. accessed 23 October 2018. <https://points.datasociety.net/you-think-you-want-media-literacy-do-you-7cad6af18ec2>.

28 boyd, danah. 2018. „A Few Responses to Criticism of My SXSW-Edu Keynote on Media Literacy“. 16. März 2018. Zugegriffen 23. Oktober 2018. <https://medium.com/@zephoria/a-few-responses-to-criticism-of-my-sxsw-edu-keynote-on-media-literacy-7eb2843fae22>.

29 Valentin Dander verwies hierbei (informell) via Twitter (<https://twitter.com/danderlan/status/1044225969752592384>) auf folgende zwei Texte: „Truth after post-truth: for a Strong Programme in Discourse Studies“ (Angermüller 2018, <https://www.nature.com/articles/s41599-018-0080-1>) sowie „Why Has Critique Run Out of Steam ? From Matters of Fact to Matters of Concern application“ (Latour 2003, <http://www.bruno-latour.fr/node/165>)

Moreover, it is questionable to what extent media literacy, media competence or media education is connected, for example, with more politically or economically oriented fields of competence when social media platforms are increasingly penetrating the world and society. A consideration of this can be found in Shakuntala Banaji, among others:

„How, for example, is the history of literacy relevant in an age of social media? Is it possible to distinguish a specific literacy in relation to social media that does not additionally require a region of other 'literacies,' be these social, political, or technological? Are digital literacy and social media literacy being used as synonyms for bounded sets of skills and competencies (e.g., joining Twitter, editing a Wikipedia page, creating and customizing a blog) or do these terms also encompass sophisticated contextual knowledge, raising questions such as: How is social media regulated? Who owns YouTube? Is it possible to completely delete information posted on Facebook? Questions are also raised in a historical context, such as: How do governments put pressure on the owners of Twitter? [...].“ (Banaji 2015: S.1)

Banaji verweist auch auf eine Arbeit von Livingstone et al., in welcher die Pluralisierung von Literacy hin zu Literacies vorgeschlagen wird: „In their work on new media and literacies, Livingstone et al. (2008) advocate 'a converged or at least dialogical concept of media and information 'literacies' (p. 103), pluralizing the concept and complicating the notion of a single, desirable, form of media literacy.“ (Banaji 2015: S.2).

2.2.5 The "Digital Literacies" concept from Belshaw

The concept by Doug Belshaw also aims at the plural - "literacies". Similarly diffuse as the question of a definition of the concept of competence is the attempt to define "digital literacy": Belshaw cites Wittgenstein's problem of defining the concept of *game* - everyone knows what is meant and yet formalisation is extremely difficult (Belshaw 2012: p. 52). Through socialisation, people get to know linguistic constructs of meaning of the world as a matter of course. In the course of human history, methods for the (dec)oding of language into symbols (from cave paintings to characters) as well as various tools, from the pen to the keyboard, have developed. (Belshaw 2012: p.47-49). According to Belshaw, however, a definition dependent on tools would fall short of the mark. Similarly, the definition of literacy as "ability to read and write" is not tenable: "Simply conceiving of literacy as 'the ability to read and write' not only sets up a false dichotomy (between those who 'can' and those who 'can't'), but makes no allowance for reading and writing using various tools and for different purposes" (Belshaw 2012: p.52). Belshaw refers to Holme in relation to the question of whether one can distinguish between "literate" and "illiterate": "Literacy is a characteristic acquired by indivi-

duals in varying degrees from just above none to an indeterminate upper level. Some individuals are more or less literate than others but it is really not possible to speak of illiterate and literate persons as two distinct categories"(UNESCO 1957, quoted in Holme, 2004 p.7, quoted after Belshaw 2012: p.52).

The relationship between literacy and knowledge as well as the question of whether completely new literacies (e.g. computer literacy or visual literacy)³⁰ emerge through the

invention of the computer or in relation to media forms is also open to the question of definition. Especially for literacy terms that are prefixed, a definition becomes complex: For example, reading and writing skills are necessary for computer use. The question also arises as to whether literacy should be defined as a state or a (social) process (Belshaw 2012: pp. 54-58). Belshaw cites Rodríguez Illeare, for example, as a representative of a process view: "Illera believes that we should rethink literacy in terms of 'literate practices,' that we should see it as 'a process and not only as a state, and [emphasise] its multiple character and, above all, its social dimension." (Belshaw 2012: p.58). The question also arises as to the influence of the social or cultural environment (e.g. in terms of understanding or being understood) and the historical context.

Belshaw distills four requirements for a "digital literacy" concept from various considerations and approaches, which should also be connectable in practice. According to Belshaw, these criteria must inevitably be derived from concepts of "traditional (print) literacy" and related literacy practices, otherwise the term "literacy" would have to be completely discarded (Belshaw 2012: p. 91):

1. „‘Cash value’ – it must be useful and must be able to make a difference in practice“
2. „Retrospective nature – it must include past (and future) instances of ‘digitally literate’ practice“
3. „Metaphorical nature – its position to other metaphorical terms in the literate practices arena must be explained adequately“
4. „Digital element – advocates must be able to explain to what the ‘digital’ part of ‘digital literacy’ pertains“

Belshaw already presents the following conclusion at this point of his thesis:

„I will argue in [...] that attempting to define a single ‘digital literacy’ (or any other new literacy) in an objective, contextless manner is doomed to failure. Instead, after applying a Pragmatic methodology and considering the world of

30 Currently, research is also being carried out on "Data Literacy", see e.g. here <https://www.stifterverband.org/data-literacy-education>

McLuhan, Ong and Csikzentmihalyi, I conclude that a matrix of configurable and contextualised core elements is more appropriate for scaffolding new literacy practices.“ (Belshaw 2012: S.68-69)

2.2.5.1 Literacy terms over time

Without going into too much detail, here are some remarks about the history of the literacy term, which are described by Belshaw. With regard to **"technological literacy"**, Belshaw notes, for example, that critical aspects were not included: "Literacy was reduced to being 'technology literate' meaning 'knowing how to use a particular piece of technology. The 'critical' element of literacy, which Gurak is at pains to stress, including the ability to make meta-level decisions judgements about technology usage, were entirely absent from these 1970s and 80s definitions" (Belshaw 2012: p.73). With the advent of the personal computer, the term **"computer literacy"** was subsequently also used:

„Definitions of computer literacy from the 1980s include 'the skills and knowledge needed by a citizen to survive and thrive in a society that is dependent on technology' (Hunter, 1984, p.45), 'appropriate familiarity with technology to enable a person to live and cope in the modern world' (Scher, 1984, p.25), and 'an understanding of computer characteristics, capabilities and applications, as well as an ability to implement this knowledge in the skilful and productive use of computer applications' (Simonson, et al., 1987, p.232). As Andrew Molnar, who allegedly coined the term, points out 'computer literacy,' like 'technological literacy' is an extremely broad church, meaning that almost anything could count as an instance of the term[.]“ (Belshaw 2012: 74)

According to Belshaw, the influence of technical innovations on literacy concepts can be easily identified. In the 1980s, the command line interface was replaced by the graphical user interface (GUI), which changed public opinion about what computer literacy was. With the advance of the computer in education, work as well as leisure and use by the masses - beginning approximately with the introduction of Windows 3.1 - the certification of **"ICT competence"** began to come into focus, e.g. through the European Computer Driving License (ECDL). From the late 1990s an "[r]eflective phase with the 'awareness of the need for more critical, evaluative and reflective approaches' began (Martin 2008, p.156-7). It is during this latter phase that the explosion of 'new literacies' occurred" (Belshaw 2012: p.76). In the further course it becomes apparent that, according to Belshaw, it is explicitly necessary to address the relation of skills and knowledge to literacy:

„The main problem with computer literacy was the elision between 'literacy' as meaning (culturally-valued) knowledge and 'literacy' as being bound up with the skills of reading and writing (Wiley, 1996). [...] Procedural knowledge about

how to use a computer was conflated in definitions of 'computer literacy' with the ability to use a computer in creative and communicative activities. Being able to use a computer to access knowledge and media is different from using a computer to create knowledge and media“ (Belshaw 2012: S.76)

As a result of the obvious shortcomings of computer literacy, theorists searched for new terms. The term **"ICT literacy"** (ICT stands for *Information Communications Technology*) has finally become more widespread, partly because the communication functions of the computer have come to the fore (Belshaw 2012: p.77). With ICT literacy, conceptual skills instead of procedural skill descriptions have now also been included, e.g. from the ICT Literacy Panel of the Educational Testing Service (USA):

„ICT literacy is using digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society“ (ETS ICT Literacy Panel 2002: S.2, zitiert nach Belshaw 2012: S.78)

It should be noted here that Senkbeil et al. (2013) also referred to this report "Digital Transformation: A Framework for ICT Literacy" of the ICT Literacy Panel in the context of the ICILS study.

But even with ICT literacy there remained open questions and the problem that ICT literacy was perceived differently. Sometimes rather synonymous with operability in the sense of computer literacy, sometimes more comprehensive as the above definition example shows (Belshaw 2012: p.78-79).

Finally, Belshaw introduces **"information literacy"** into the historical view. A term which stands out above all due to its independence from technologies and which has thus also been taken up and further developed by librarians. Belshaw explicitly takes the "habit of mind" approach from the following definition:

„[I]nformation literacy is a way of thinking rather than a set of skills... It is a matrix of critical and reflective capacities, as well as disciplined creative thought, that impels the student to range widely through the information environment... When sustained through a supportive learning environment at course, program or institutional level, information literacy can become a dispositional habit... a 'habit of mind' that seeks ongoing improvement and self-discipline in inquiry, research and integration of knowledge from varied sources.“ (Center for Intellectual Property in the Digital Environment 2005: viii-ix, zitiert nach Belshaw 2012: S.79)

Historically, despite its origin in the 1970s, the term did not become relevant until the 1990s, when mass Internet use began. However, with the strong emphasis on access to information without also considering content creation (Belshaw 2012: p.80). For in-

formation literacy, step models were developed by the American Libraries Association, among others, but here too Belshaw criticizes the description of literacy as a state. He also criticises the following circumstance with regard to definition parts such as "In a knowledge economy [...]": "[The definitions] may make reference to the fact that the world has changed, but this is understood in big leaps rather than incremental change" (Belshaw 2012: p.82). Moreover, a considerable bias can be observed in information literacy: "'information literacy' is biased heavily towards the reading and understanding part of literacy rather than the creation of texts". (Belshaw 2012: p.82). Belshaw also mentions two other problems:

„How, wonders Foster, would we recognize, and seek to remedy, 'information illiteracy'? As Karl Popper would have it, such a term is 'unfalsifiable' [...] [...] Despite this, many theorists propose information literacy as an 'overarching literacy of life in the 21st century' (Bruce, 2002) and bodies such as the US Association of Colleges and Research Libraries come up with 'performance indicators' for the concept (Martin, 2008 p.159), 'information literacy' suffers from a lack of descriptive power. It is too ambitious in scope, too wide-ranging in application and not precise enough in detail to be useful in an actionable way.“ (Belshaw 2012: S.82)

2.2.5.2 The 8Cs from Digital Literacy

The conceptual evolution of digital literacy begins with Paul Gilster's book of the same name from 1997, in which Gilster publishes several attempts at definition. He was followed by numerous other authors. Belshaw draws on the theoreticians Martin, Es-het-Alkalai and Amichai-Hamburger, Tornero and Bélisle to work out a meta-definition for digital literacy. All the works used are united by the fact that they refer to literary practices carried out in "digital spaces" (Belshaw 2012: p.85). In addition, Belshaw repeatedly emphasizes the aspects of creativity and criticism in his analysis: "One could argue that the ability to use computers and communication technologies is a 'competence,' not an area of literacy. This is why the 'creative' element is important in digital literacy" (Belshaw 2012: p.88).

Belshaw finally comes to the following "8Cs" (Belshaw 2012: p.90) as well as to a meta definition:

„Literacies involve the mastery of simple cognitive and practical skills. To be 'literate' is only meaningful within a social context and involves having access to the cultural, economic and political structures of a society. In addition to providing the means and skills to deal with written texts, literacies bring about a transformation in human thinking capacities. This intellectual empowerment happens as a result of new cognitive tools (e.g. writing) or technical instruments (e.g. digital technologies).“ (Belshaw 2012: S.90)

1. cultural
2. cognitive
3. constructive
4. communicative
5. confident
6. creative
7. critical
8. civic

With reference to the research literature examined, Belshaw comes to the conclusion that a focus on literacy should be in the plural, i.e. Digital Literacies instead of Digital Literacy (Belshaw 2012: p.91, own emphasis). Belshaw underlines his ambitions to write a practical thesis by not being satisfied with this meta definition and the eight elements: "Given the espoused practical aim of this thesis, however, it is not good enough for a definition of digital literacies to merely meet the four conditions in order to make it valid. It must also be useful" (Belshaw 2012: p.92). For Belshaw, the question is whether co-constructing definitions in relation to the eight identified elements would be more practical than a meta-definition (Belshaw 2012: p.92).

2.2.5.3 Dealing with ambiguity (ambiguity)

„This, then, is the first part of the continuum: an individual gives a name to a nebulous collection of thoughts and ideas.“ (Belshaw 2012: S.96)

The core of Belshaw's work is that he tries to take a positive approach to the diffusivity of terms or combinations of terms instead of striving for the next single definition of digital literacy: "As ambiguity when defining terms such as 'digital literacy' cannot be avoided it would be best to acknowledge, understand and, indeed, embrace it" (Belshaw 2012: p.111-112). Belshaw draws on the works of Epson, Robinson and Abbott and develops a continuum³¹ of ambiguity.³² Terms and definitions of terms go through this continuum, Belshaw distinguishes three phases: Generative Ambiguity, Creative Ambiguity and Productive Ambiguity.

31 Englische Def. laut <https://dictionary.cambridge.org/dictionary/english/continuum>: „something that changes in character gradually or in very slight stages without any clear dividing points“. Zugegriffen 15. September 2018.

32 Another possible translation would be the term ambiguity. The British-English definition of <https://dictionary.cambridge.org/de/worterbuch/englisch/ambiguity> is "(an example of) the fact of something having more than one possible meaning and therefore possibly causing confusion". Accessed September 15, 2018.

Ambiguous terms and phases of ambiguity

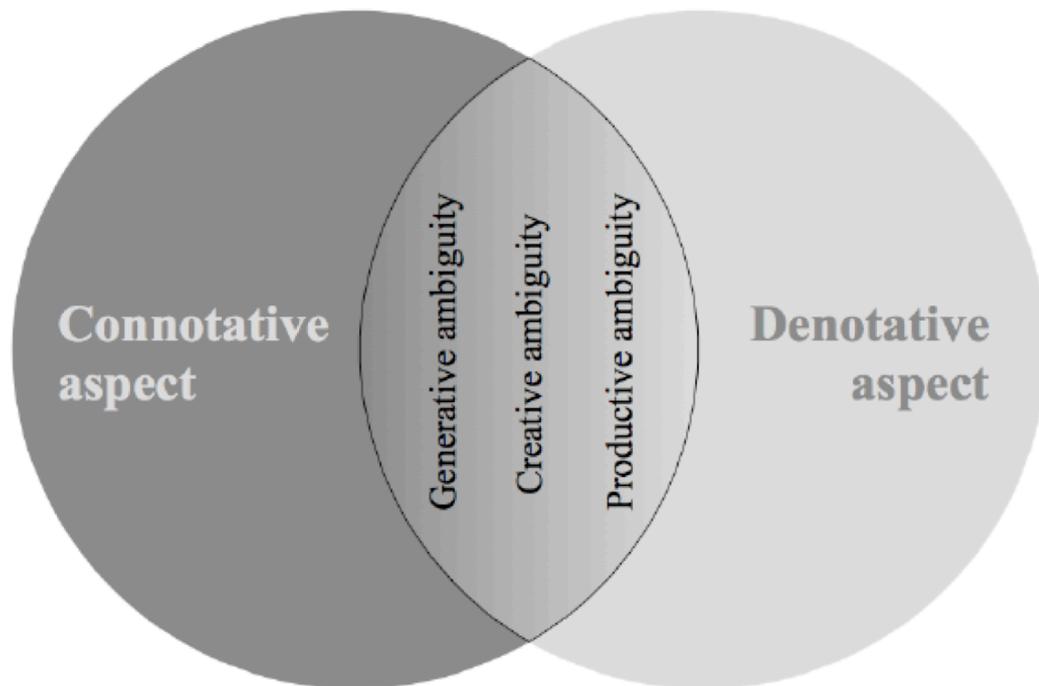


Figure 1: Illustration from Belshaw (2012: p.95): The spectrum of ambiguity (CC0)

In the "Generative Ambiguity" phase, terms or combinations of terms have the highest degree of ambiguity or ambiguity, and it may also be unclear whether digital or literacy is in the foreground: "Generative ambiguity is using old words in new ways" (Belshaw 2012: p.98). The challenge of moving a term from this phase forward is great: "Ideas in the Generative ambiguity phase require a great deal of effort in order to move them into the phase of Creative ambiguity, where they can be understood and worked upon by a larger number of people" (Belshaw 2012: p.102).

Für die Beschreibung der Phase der „Creative Ambiguity“ wählt Belshaw ein handwerkliches Beispiel aus: „Within the part of the continuum identified as ‘Creative ambiguity’ one aspect of the ambiguous term is fixed, much in the way a plank of wood nailed to a wall would have 360-degrees of movement around a single point. This point of reference allows others to co-construct meaning and the term to enter a wider community for discussion and debate“ (Belshaw 2012: S.103).

Productive Ambiguity ist die Phase, in welcher dem Begriff der geringsten Grad an Vieldeutigkeit zugeschrieben wird: „Stability is achieved through alignment, often due to the pronouncement of an authoritative voice or outlet. This can take the form of a well-respected individual in a given field, government policy, or mass-media convergence

on the meaning of a term. Such alignment allows a greater deal of specificity, with rules, laws, formal processes and guidelines created as a result of the term's operationalisation“ (Belshaw 2012: S.108). Belshaw führt an dieser Stelle seiner Arbeit ebenfalls aus, dass diese Stabilisierung für den Begriff Digital Literacy aus seiner Sicht mit einer Kontextualisierung in einer Kernmatrix konfigurierbarer Elemente erreicht werden kann (Belshaw 2012: S.108).

Terms can also run out of continuum resp. fall out and become dead terms, which then can be revived again. Belshaw uses the example of the dichotomy "digital native/digital immigrant", which from an academic point of view has already been refuted many times.

In the context of the debate on ambiguity, Belshaw sums up as follows:

„The important insight in this chapter, believe, is that because of its necessarily-ambiguous nature, ‘digital literacy’ can only be understood in an ‘ideological’ way. That is to say, in opposition to a more ‘autonomous’ understanding of the term, I would agree with Colin Lankshear in rejecting a single ‘essential literacy lying behind actual social practices involving texts’ (Lankshear, 1999, no page). Literacy does not have an objective, unchanging nature, but ‘consists in the forms textual engagement takes within specific material contexts of human practice’ (ibid.).“ (Belshaw 2012: S.111)

2.2.5.4 Methodological basis: Pragmatism

In his thesis, which is explicitly not empirical and also moves on the meta-level, Belshaw relies on the philosophical line of thought of pragmatism: "Pragmatism allows me to simultaneously focus on digital and new literacies from a conceptual point of view and concentrate on the utility of such a conceptualization" (Belshaw 2012: p.114). He decides against the methodologies Critical Theory, Cybermethodology, Grounded Theory and Post-Structuralism.

An dieser Stelle sollen kurz Belshaws Begründungen dargelegt werden, warum nicht die Kritische Theorie angewendet wurde. Belshaw verweist u.a. auf die Herausforderung der anvisierten Veränderung: „Horkheimer defined a ‘critical theory’ as adequate only if it is simultaneously explanatory, practical and normative. That is, it must explain what is wrong with current social reality, identify the actors to change it, and provide both clear norms for criticism and achievable practical goals for social transformation [...]. However, as Bohman goes on to elaborate, Critical Theory is ‘rife with tensions’ because of its ambition to transform capitalism into ‘real democracy’“ (Belshaw 2012: S.119).

Habermas combined the idealistic demands with a selection of ideas from pragmatism:

„A second phase of Critical Theory led by Jürgen Habermas, one of the leading intellectuals of our time, seeks to transform it into ‘the mode of inquiry that participants may adopt in their social relations to others’ (Bohman, 2010). Habermas combines the transcendental idealism evident in the first phase of Critical Theory with a selection of ideas from the American Pragmatist tradition (Shalin, 1992, p.253). The latter is evident in Habermas’ claim that universal consensus is the ultimate goal of communicative action, with anything short of this demonstrating our lack of commitment to the overall process. As Shalin points out, this differs with Pragmatism as, in the latter, a dissenting attitude is ‘imminently rational in that it points to conflicting potentialities of being,’ alerting us to the ‘risks and uncertainties inherent in alternative lines of action’ (Shalin, 1992, p.258).“ (Belshaw 2012: S.120)

Belshaw sees three main problems with Critical Theory in the context of his work: "Despite a general claim, Critical Theory is based on subjective experience. Furthermore, the presentation of practice or action usually refers only to work contexts. But what is more important for Belshaw is the fact that complexity increases: "Finally, and perhaps most importantly, a methodology should help make clear the path from theory to practice for a research area. Critical Theory does the opposite of this, adding a layer of complexity to an already confusing and contested field" (Belshaw 2012: p.121).

Pragmatism, on the other hand, which was developed by Charles Sanders Peirce and spread by William James, questions the concrete benefit ("cash value") in practice and defines truth as follows:

„Pragmatism... asks its usual question. ‘Grant an idea or belief to be true,’ it says, ‘what concrete difference will its being true make in anyone’s actual life? How will the truth be realized? What experiences will be different from those which would obtain if the beliefs were false? What, in short, is the truth’s cash-value in experiential terms? The moment pragmatism asks this question, it sees the answer: True ideas are those that we can assimilate, validate, corroborate and verify. False ideas are those we cannot. That is the practical difference it makes to us to have true ideas; that, therefore, is the meaning of truth, for it is all that truth is known-as.“ (James 1995: S.77, zitiert nach Belshaw 2012: S.126)

Wissen und Wahrheit sind im Pragmatismus vorläufig und Wahrheit kann ebenfalls durch Erfahrungen verifiziert werden, nicht ausschließlich durch stichhaltiges Argumentieren in der Theorie: „Pragmatism [...] is a philosophy that rejects the existence of an objective standpoint from which to ascertain the truth or falsity of a statement or belief. Reasoning is allied to experience rather than replacing it. For Peirce and James, meaning can only be grasped through practice, not through armchair philosophising“ (Belshaw 2012: S.131).

Belshaw develops three statements from the works of Emerson, Peirce and James (Belshaw 2012: p.135):

1. „Pragmatism is an anti-skeptical endeavour“
2. „Dividing lines between theory and action are arbitrary“
3. “Truth is conditional and dependent upon a community of inquirers“

John Dewey übertrug den Pragmatismus in den Bildungsbereich und schloß sich der Ansicht von Peirce an: „Like Peirce, he rejected Cartesian representationalism, believing that sensory experience is ineffable. Because sensory experience is ineffable, any description of the world will be imperfect as it will fail to express the full context within which it operates“ (Belshaw 2012: S.135). Belshaw schlussfolgert aus Deweys Werken zum Pragmatismus zwei weitere Statements (Belshaw 2012: S.138):

4. „Human experience of the external world is ineffable“
5. „Pragmatism is a method of ‘un-thinking’ rather than providing an explicit framework“

Belshaw completes his list of statements from the works on pragmatism by Quine and Rorty (Belshaw 2012: p.140-145):

6. „A universally-held set of beliefs is impossible“
7. „Any statement can be accommodated as ‘true’ by amending a belief system to a greater or lesser extent“
8. „Knowledge is a matter of social practice rather than mirroring nature“
9. "We 'create' rather than 'discover' truth"
10. „New concepts are often understood through metaphor, enter common usage, and then ‘die off into literalness““

Belshaw begründet seine Auswahl zusammenfassend wie folgt: „As I have argued, Pragmatism is particularly suited to digital environments because of its fallibilist and provisional approach to knowledge as well as its communitarian aspect. Pragmatism is especially suited to digital literacies, as we will see, because it allows us to avoid some of the problems holding back and providing a sticking point in the research into Digital and New Literacies“ (Belshaw 2012: S.147).³³

³³ The individual positions such as fallibilism cannot be dealt with in detail at this point due to the limited scope of the Master's thesis.

2.2.5.5 The theoretical derivation of Digital Literacies

Belshaw examines the *New Literacy Studies*, which focus on the social aspects of reading and writing, and the *New Media Literacy Studies*. He tries to find out whether these reduce the fragmentation of literacy understandings. Belshaw concludes that both research directions tend to contribute to more confusion rather than moving the term digital literacy into the Productive Ambiguity phase. With the metaphor "umbrella term" Belshaw criticises attempts by academics to subsume literacies, skills or competences under a favoured umbrella term: "The method, up to this point, for those wishing to begin a programme of work around 'New' or 'Digital' Literacies seems to be to concentrate on one particular definition as an umbrella term. This serves as a focus, with other literacies, skills and competencies retro-fitted into this overarching term. The same is evident with concepts such as '21st century skills'. What may be more useful, however, is to consider digital literacies an semi-fluid matrix of overlapping literacies that change due to time and context" (Belshaw 2012: p.167).

One of the main questions is whether the distinction between Traditional Print Literacy and New or Digital Literacy/Literacies is an evolution or a revolution. With reference to Walter Ong and Marshall McLuhan, Belshaw attempts to approach the answer to this question and draws up a preliminary hierarchy:

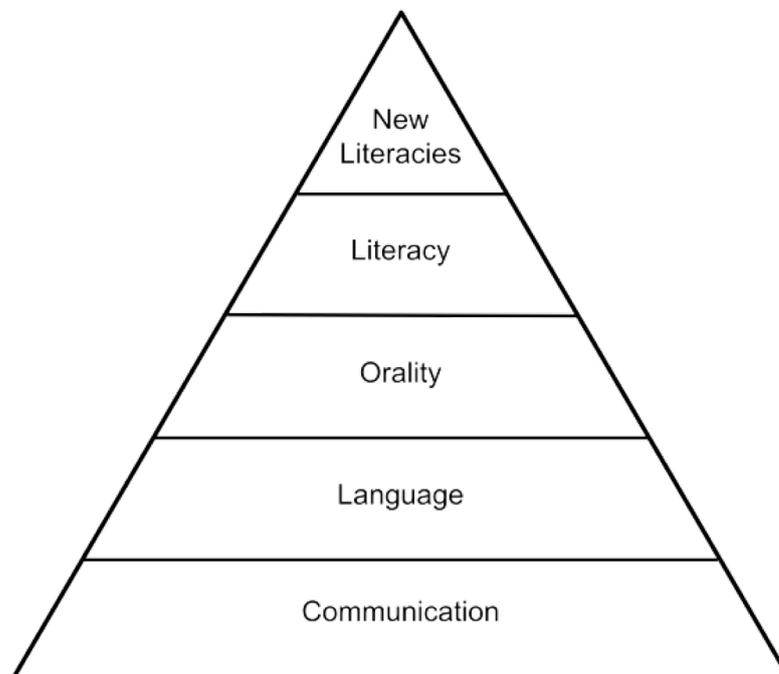


Figure 2: Hierarchy of Literacies (Belshaw 2012, Figure 9; CC0), own reproduction of the graph

Orality is natural according to Ong, while "the process of writing and becoming 'literate' actually restructures consciousness" (Belshaw 2012: p.171). This is illustrated by the unequal relationship between the multitude of languages and the few languages that have also been converted into written form. McLuhan describes writing as a technology of individualism (Belshaw 2012: p.171). Ong and McLuhan describe the change through writing with a "residue" consequence with reference to the possibilities of communication over great distances as well as asynchronicity. Both authors locate the changes caused by electronic means of communication as follows: "The move to 'new(er) literacies' came at the end of the 20th century. Ong (1982:2002, p.3) would explain this through a move into what he would call 'secondary orality', whilst McLuhan (1962, p.253) speaks of the 'Gutenberg galaxy' coming to an end in the era of electronic communication" (Belshaw 2012: p.171). Belshaw identifies with Ong and McLuhan some characteristics and shifts regarding technical innovations, e.g. "Whereas traditional literacy was predicated upon technologies that promoted individualism, newer conceptions of literacy depend upon access, collaboration and sharing" (Belshaw 2012: p.173).

Bzgl. der Frage „Evolution oder Revolution“ zieht Belshaw eine Grenzlinie, die er „Traditional (Print) Literacy“ nennt: „[W]hatever literacy is, it [has] something to do with reading'. In addition, it must be reading with understanding. This idea of literacy being 'reading something with understanding' is what I will continue to refer to as 'Traditional (Print) Literacy'. This conception of literacy is static and psychological, focused on the individual's relationship, and interaction, with physical objects“ (Belshaw 2012: S.174). Traditional (Print) Literacy ist ebenfalls mit Macht- und Kontrollaspekten verbunden und machte Schulen sowie Bildungsinstitutionen hauptsächlich zu Konsumenten von eingefrorenem Wissen (Belshaw 2012: S.175).

Dieses statische Konzept ist mit Bezug auf Massenmedien und darauf folgend der Verbreitung des Internets schwer zu halten: „As Lanham puts it, literacy 'has extended its semantic reach from meaning 'the ability to read and write' to now meaning 'the ability to understand information however presented.' There is no doubt that 'literacy' has become a fuzzy concept that gives the semblance of being straightforward but, on closer inspection, contains layers of complexity“ (Belshaw 2012: S.175). Zudem ergeben sich vielfache Herausforderungen für den Bildungsbereich Schule, exemplarisch sei hier folgendes zitiert: „Top-down, hierarchical, Traditional (Print) Literacy is perpetuated within schools because it is so difficult to come up with other practical models. [...] Just what new technologies mean for the education of young people in the 21st century remains an open question“.

The danger in attempts to distinguish between traditional literacy and the supposed counterpart digital literacy is that "[technologies] involve much more than simply passing on and/or adding to written or visual texts or information per se... Rather, they are tied directly to ways of interacting with others... and to ways of being, knowing, learning and doing" (Belshaw 2012: p.178). The possibility that almost anyone can publish adds a moral dimension, which some theorists are supposed to intercept through additional elements in static literacy concepts. However, Belshaw sees this as a challenge in the fact that possible objectives as well as social practices are potentially always changing or developing as a result of technological developments (Belshaw 2012: p.179).

Another possibility is to define literacy as a process instead of explicitly including it as a state ("sociocultural practices model") and "identity, culture and [...] a reflective element":

„Literacy is thus bound up with identity, culture and involves a reflective element. Whereas Traditional Literacy is about training and competence, the forms of literacy put forward by the sociocultural practices model involve interaction and creativity. This almost 'meta' form of literacy is defined by the 'mashup' and the remix; it could be seen as post-postmodernism, making one's own sense of a fragmented 'reality'.“ (Belshaw 2012: S.180)

Hierbei überlädt man aber potenziell das derzeitige Verständnis von Literacy: „The difficulty is that the view of literacy put forward by the sociocultural practices model strains at the very edges of the word 'literacy'“ - ein Problem, was allerdings auch Traditional Literacy betrifft (Belshaw 2012: S.180). Belshaw sucht daraufhin nach einem „middle ground“ und schlussfolgert mit Hilfe von Lankshear und Knobel: „[N]ew technologies can be linked to new epistemologies: personality, identity, and community“ (Belshaw 2012: S.184) - allerdings mit folgender Einschränkung: „Whether new epistemologies necessarily lead to new literacies is debatable“ (Belshaw 2012: S.184).

Die Kernfragen lauten somit weiterhin „In effect, what we are asking is: what changes when a new technology is introduced? How does it affect how we interact, how we think and how we communicate?“ (Belshaw 2012: S.186). Eine Antwortstrategie ist McLuhans Tetraeder-Konzept: „Any medium or human artefact simultaneously enhances, reverses, retrieves and obsolesces - although the effects in each area may take years to manifest themselves“ (Belshaw 2012: S.187).³⁴

³⁴ Beispiel: „If we take the mobile phone (cellphone) as an example to place in the centre of the tetrad, we observe the following. The mobile phone enhances communication by voice whilst reversing the need to keep people close in order to communicate with them. Public telephone booths become obsolete, but certain behaviours (such as infantile shouting) are retrieved“ (Belshaw 2012: S.187)

Mit McLuhans medientheoretischen Überlegungen unterstützt Belshaw seine These, dass eine singuläre Definition von Digital Literacy nicht haltbar wäre. Aus Sicht von McLuhan müssen Technologien in ihrem historischen Kontext betrachtet werden: „The figure (or medium) operates through its ground (or context) with both having to be understood together to make either intelligible. intelligible. McLuhan believed that each technology reflects a way of understanding the world, especially in terms of time and space.“ (Belshaw 2012: S.188). Mit dem Einbezug von McLuhans Theorien vollzieht sich für Belshaw ein Shift von psychologischen zu soziologischen Betrachtungsweisen: „We have moved from a psychological view of understanding literacy (as with Traditional Literacy) to a sociological view where '[l]iteracies are bound up with social, institutional and cultural relationships, and can only be understood when they are situated within their social, cultural and historical contexts' (Lankshear & Knobel, 2006, p.12).“ (Belshaw 2012: S.188).

In Bezug auf soziale Kontexte bringt Belshaw u.a. die Lerntheorie des Konnektivismus mit in die Thesis ein und stellt die große Frage, ob die Entwicklung inzwischen über Literacy hinausgegangen ist: „But is the word 'literacy' useful in such a context? Literacy is a state which has traditionally been ascribed (or not) to individuals. Is the state that writers on 'New Literacies' espouse simply a case of encoding and decoding texts? It would appear from the above, given the references to 'identity' and 'community' that perhaps we have moved beyond literacy“ (Belshaw 2012: S.190). Belshaw exploriert daraufhin das psychologische Konzept „Flow“ von Mihaly Csikszentmihalyi. Dieses verwirft Belshaw schlussendlich als Begriffsalternative zu Literacy aber wieder, weil der Literacybegriff deutlich anschlussfähiger ist (Belshaw 2012: S.190-194). Digital Literacy wird - nach einer konkreteren Aushandlung, wofür das *digital* stehen könnte - als „bridging concept“ weiterverfolgt: „It could be argued that digital literacy has served, and continues to serve, as that bridging term between the early adopters and the majority, moving as a concept from the Creative ambiguity part of the spectrum I introduced [...] towards a more Productive ambiguity“ (Belshaw 2012: S.198).

2.2.5.6 The eight elements of Digital Literacy (8C) in an overlapping matrix of literacies

Belshaw's conclusion on the various definitions of Digital Literacy or New Literacies presented in his thesis is as follows: "[...] I found that either they do not have the necessary explanatory power, or they become stuck in a potentially-endless cycle of umbrella terms and micro literacies" (Belshaw 2012: p.200). He proposes - with reference to Martin - a core of elements which form or crystallize in a matrix of overlapping

literacies. For a German approach it is important to mention that Belshaw uses the matrix in the following sense: "in the original Middle English sense of 'womb' or an environment within which something develops (rather than in a strictly mathematical sense)"(Belshaw 2012: p.201). Depending on the context, individual elements can be more essential than others: "some elements are more 'core' than others in certain contexts". (Belshaw 2012: p. 200-201). This approach is also intended to integrate McLuhan's tetrahedron concept: "in the sense that the process of contextualizing digital literacies is a tetradic process of enhancing, reversing, retrieving and obsolescing" (Belshaw 2012: p.201).

Mit Bezug auf Praxisbeispiele wie Katzen-Memes in der Netzkultur stellt Belshaw heraus, dass selbst diese schon potenziell eine eigene Grammatik und eigenes Vokabular haben und somit bereits eine Literacy hervorbringen können: „In other words, any sphere that involves co-constructing and using a grammar to express oneself in different semiotic domains could constitute a ‘literacy’. As we may operate in many semiotic domains within the digital sphere, it may be more appropriate to apply McLuhan’s tetrads [...] to these domains and affinity spaces rather than the hardware used for communication.[...] Each tetrad therefore foregrounds some elements of knowledge, identity and communication whilst backgrounding others“ (Belshaw 2012: S. 202). Somit wird hier herausgestellt, dass nicht ausschließlich der Technologiebezug bei einer Literacyherleitung betrachtet werden sollte.

³⁵For Belshaw, digital literacies are transient, i.e. they change over time, involve different tools as well as the development of different habits of mind, and they are almost always dependent on the context in which an individual finds himself (Belshaw 2012: p.204).

With regard to pedagogical measures, there is a clear demarcation to selective workshops: "[Digital Literacies] can be scaffolded and developed but to do so involves more than training, it involves education. Digital literacies cannot be developed in a one-off, uncontextualised half-day workshop" (Belshaw 2012: p.201). In order to ensure the connectivity to educational practice as well as concepts of "learning", Belshaw introduces the SOLO taxonomy (Structure of Observed Learning Outcomes), which can support the understanding of processes. It is also a way for Belshaw to resolve a field of tension in the context of literacy with the help of this structuring of knowledge and skills:

³⁵ If necessary, a translation could also read Geisteshaltung or Denk- und Handlungsgewohnheiten (attitude of mind or thinking and acting habits)

„The SOLO Taxonomy points to a way that we can integrate two elements of literacy that are often seen to be in tension. On the one hand, some conceive being ‘literate’ as having the necessary functional skills (this would be ‘Unistructural’ or ‘Multistructural’), whilst others conceive of it as the complexities of meaning an individual can express (‘Relational’ or ‘Extended Abstract’). Literacy is a condition, not a threshold and, as such, involves a spectrum of development that the SOLO taxonomy can help us conceptualise.“(Belshaw 2012: S.205)

According to Belshaw, the eight essential elements of digital literacy should be seen as a starting point and are not objectively weighted. In summary, Belshaw refers to the limitations to be observed in its elaboration:

„[I]t must be remembered that the overall matrix is itself subject to the Pragmatic approach detailed in Chapter 6. Four of the ten guiding Pragmatic principles established in that chapter are particularly appropriate to emphasise here. Firstly, that dividing lines between theory and action are arbitrary. Secondly, that this is less an explicit framework than a method of ‘un-thinking’ certain commonly-held assumptions. And finally (eliding the eighth and ninth guiding principles) knowledge is created rather than ‘discovered’ being a matter of social practice rather than in some way ‘mirroring nature’.“ (Belshaw 2012: S.206)

The elements have already been listed in this paper. Ian O'Byrne³⁶ formulates this as follows:

1. „Cultural: Requires technology use in different contexts and awareness of the values and practices specific to varying contexts,„
2. „Cognitive: Enables mastery of the use of technological tools, software, and platforms“
3. „Constructive: Requires reusing and remixing existing resources depending on need, or possibly adapting them into new resources“
4. „Communicative: Requires awareness of different communication devices that are both digital and mobile“
5. „Confidence: Places emphasis on gaining competence with digital technologies and the ability to create an environment for practicing skills and self-learning“
6. „Creative: Creates new data in digital environments while taking risks, developing skills, and producing new things“
7. „Critical: Requires the digital learner to develop various perspectives while actively taking different circumstances into account“
8. „Civic: Develops and helps acquire the concepts of democracy and global citizenship as individuals become participants in society“

³⁶ O'Byrne, Ian. 2016. „Perspectives of Digital Literacies“. Literacy Today, Nr. January/February 2016. Zugegriffen 23. Oktober 2018. <https://www.literacyworldwide.org/blog/literacy-daily/2016/02/03/perspectives-of-digital-literacies>.

Belshaw repeatedly points out a feature of digital literacy that is important to him:

„Digital literacy is a condition, not a threshold and, as with all ‘conditions’ requires maintenance and context“ (Belshaw 2012: S.214)

Belshaw refrains from a visualization or diagram of the eight elements for the time being in order to emphasize the necessary contextualization and to encourage communities to do so (Belshaw 2012: p.214). In lectures after his thesis Belshaw used a representation which is based on the periodic table.³⁷

In Bezug auf Bildungsinstitutionen formuliert Belshaw explizit einen Vorschlag für die Kontextualisierung der 8C: „One way to use the proposed overlapping matrix within an educational institution would be for representatives of various stakeholders (senior leaders, students, teachers, parents, governors) to each rank the elements in order of importance. Once the order of these have been discussed and debated (this being one of the most important parts of the process) a working group could look at how the development of each element could take place“ (Belshaw 2012: S.216). Belshaw greift hierbei wieder auf McLuhans Tetraeder-Konzept zurück: „This process would take into account the tetradic nature of digital literacies and examine how programmes or curricula seeking to develop each element may enhance, reverse, retrieve or obsolesce other practices“ (Belshaw 2012: S.216). Dabei sollte jedoch stets beachtet werden, dass Definitionen von Digital Literacies, die in diesem Prozess entwickelt werden sollen, vorläufig und revidierbar sein sollten: „those looking to develop digital literacies should understand that the ground is currently shifting under their feet“ (Belshaw 2012: S.216). Belshaw sieht hierbei den Vorteil, dass eine Einigung unter Akteuren wahrscheinlicher wird im Gegensatz zu Prozessen, die auf harte und steife Konzeptionen ausgelegt sind (Belshaw 2012: S.216).

2.2.5.7 Summary of the

Belshaw characterizes his proposal, which was made in distinction to static and psychological definition, finally in close connection with the enabling of McLuhan's tetrahedron: "[A] pluralistic, multi-faceted, contextualized and contingent definition of digital literacies allows McLuhan's tetrads to be embraced rather than avoided" (Belshaw 2012: p.220).

A critical question for Belshaw is why some theoretical elaborations are ever done with respect to literacy: "Much of what has been proposed by theorists could equally come

³⁷ See e.g. here: <https://www.slideshare.net/dajbelshaw/tedx-warwick-the-essential-elements-of-digital-literacies>

under the heading 'competence' or 'skill'" (Belshaw 2012: p.221). In addition to the two problems of squeezing new socio-cultural practices into existing literacy definitions and the imperfect explanations of the new or digital, Belshaw affirms with Ong's "second orality" reference that literacy should be understood as much more far-reaching than a simple *representation of text* in print works or on a screen (Belshaw 2012: pp. 221-222).

The pragmatic approach of Belshaw's work is reflected in his examination of the spectrum of ambiguity, in which the author is explicitly concerned with connectivity for certain target groups and ambiguity can thus be seen as a practical tool: "The spectrum of ambiguities (Chapter 5) is useful here as a way of categorising different approaches to digital literacy and in the way it allows groups who co-define terms to target different audiences. Sometimes, for example, a definition may need to be situated in the realm of 'Creative' (rather than 'Productive') ambiguity in order to obtain buy-in from members of an educational institution or organization" (Belshaw 2012: p.222). Furthermore, the spectrum potentially represents a method of how researchers can locate their positions and theoretical approaches (Belshaw 2012: p.223). Belshaw's approach to matrix elements is located in the area of Creative Ambiguity (Belshaw 2012: p.222).

What could potentially be overlooked in Belshaw's elaboration, but of great importance for this master's thesis, is the emphasis on the process of negotiating digital literacies: "I have attempted to argue that the process of coming up with a definition of what constitutes 'digital literacies' is at least as important as the outcome of that process" (Belshaw 2012: p.222). In this process, the pragmatic methodology chosen by Belshaw for his work has a crucial role to play, as it enables the linking of "truth" with contextualized requirements of practice³⁸:

„‘Truth,’ as Pragmatic philosophers from Peirce to Rorty have agreed upon, is conditional and dependent upon communities of inquirers. By focusing on what makes a practical difference, pointing out the necessarily ambiguous nature of concepts and frameworks, and stressing that definitions are temporary, I believe this thesis makes a valuable contribution to research into digital and new literacies. In particular, the matrix of essential elements to definitions of digital literacies outlined in Chapter 9 allows for contextualization and application in contexts from educational institutions to businesses and third sector organizations“ (Belshaw 2012: S.224).

38 At this point, a discussion of further concepts of truth or epistemology in future work would be helpful, also with regard to questions of measurability, which are discussed again and again in education.

Many of the listed concepts, e.g. McLuhan's tetrahedron subdivision and the theoretical origins of Ambiguity, would certainly have deserved their own chapter in a more comprehensive work. However, Belshaw's work on the 8C should at least make the way of deriving the 8C transparent.

With regard to the comparison between Digital Literacies according to Belshaw and conceptual works in media pedagogy, no conclusions can be drawn at this point. According to my research, Belshaw's elaboration of the eight elements has not yet been taken up in German-language media education. Google Scholar, for example, finds 130 citations³⁹, including only two in German, which are not relevant for this master thesis. With regard to the partial goal of the benefit for the practice of the DBR approach, this theoretical statement is unsatisfactory and reveals a need for discussion, especially because the media pedagogical conceptual elaborations in the German-speaking area also have to struggle with ambiguous interpretations of different stakeholders.

2.2.6 The Web Literacy Map

The Web Literacy Map was co-developed by Belshaw in the course of his work at the Mozilla Foundation.⁴⁰ The first white paper entitled "Why Mozilla Cares About Web Literacy", written by Doug Belshaw, Karen Louise Smith and with the collaboration of the Mozilla community, narrows web literacy down as follows:

„Mozilla understands web literacy to be the skills and competencies required to read, write and participate effectively on the web. One of the problems with attempting to teach and learn web literacy has been the lack of an agreed ‘map of the territory’ from which to build resources and curricula. Other candidate terms such as ‘digital literacy’ and ‘information literacy’ seem too wide-ranging and ambiguous to adequately cover the web.³ Possible alternatives such as ‘media literacy’ and ‘computational thinking’ certainly overlap with web literacy, but there is something sufficiently unique about ‘web literacy’ to be worth of attention.“ (Belshaw et. al 2014)

³⁹ See:

https://scholar.google.de/scholar?as_vis=0&hl=de&as_sdt=2005&scioldt=0,5&cites=707815846497752998&scipsc
= . Accessed September 16, 2018.

⁴⁰In this (informal) video interview, Belshaw talks about the challenges of conception and differentiation between digital literacies, which can hardly be narrowed down, and web literacy as a limited area: Four Questions for Doug Belshaw about the #webliteracy map #JAAL (2015), <https://www.youtube.com/watch?v=6D5EwZPa6Xk>. Accessed October 23, 2018.

This is also done in relation to the demand for programming instruction - a demand which, according to the authors of the white paper, falls short of the mark (Belshaw et al. 2014).

The second version of the whitepaper, this time written by An-Me Chung, Iris Bond Gill and Ian O'Byrne, presents a further development of the Web Literacy Map. Among other things, focus group interviews were conducted to ensure acceptance and connectivity for various target groups. The revision can be explored interactively at the URL <https://learning.mozilla.org/en-US/web-literacy>. A major change from the first to the second version is the inclusion of the 21st Century Skills in the map. Furthermore, concrete activity suggestions (exercises, courses, etc.) are listed in the corresponding skill areas.

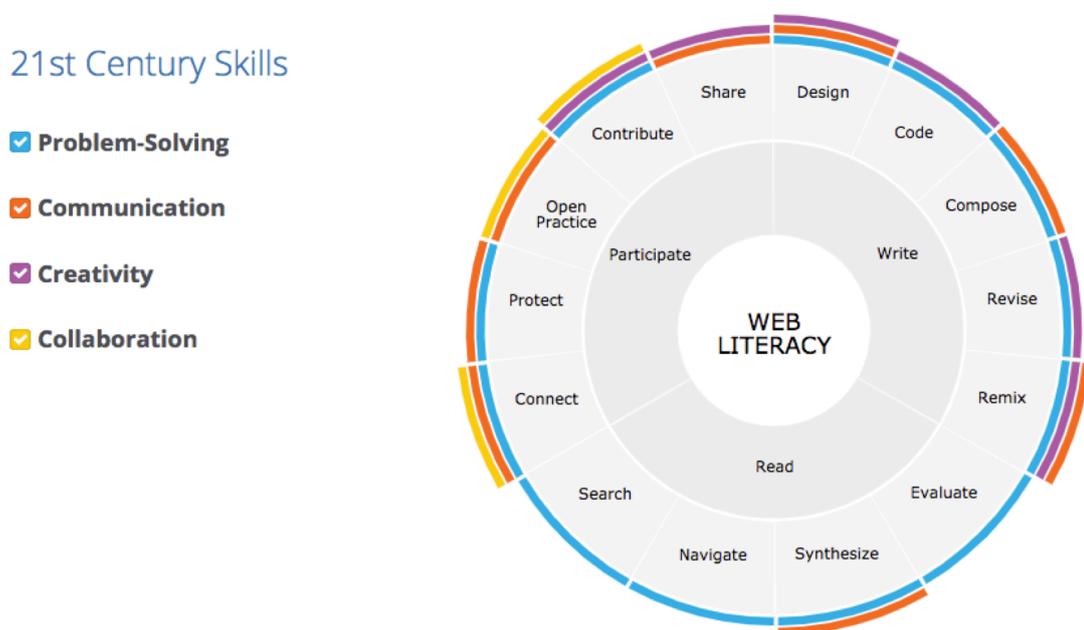


Figure 3: Screenshot of the Web Literacy Map Website (Mozilla Foundation, License: <https://creativecommons.org/licenses/by/4.0/>)

Eine wichtige Charakterisierung der Map findet sich im ersten Whitepaper: „This is a descriptive rather than prescriptive map. That is to say people and organizations can align with it no matter what context they are working in - and no matter what level they are working at. The Web Literacy Map will evolve and mature along with the web itself, and in consultation with a growing community of stakeholders“ (Belshaw et al. 2014).

2.2.7 connected learning

Another reference point to be included in this work is the Connected Learning model. Connected Learning is defined as follows:

„Connected learning is realized when a young person pursues a personal interest or passion with the support of friends and caring adults, and is in turn able to link this learning and interest to academic achievement, career possibilities, or civic engagement.“ (Ito et al. 2013: S.6)

Connected Learning does not explicitly include digital media or networking technologies in the definition. However, it is based on the assumption that "[d]igital and networked media offer new ways of expanding the reach and accessibility of connected learning so it is not just privileged youth who have these opportunities" (Ito et al. 2013: p.6). Thus, "equity" is a focus of the model. Ito et al. distinguish connected learning from pure optimisation measures of learning outcomes as follows: "It is not simply a 'technique' for improving individual educational outcomes, but rather seeks to build communities and collective capacities for learning and opportunity [...]" (Ito et al. 2013: p.7). The model can in principle be applied to any age group, in the elaboration with several case studies the authors refer to young people and young adults (Ito et al. 2013: p.8). Some personal experiences of young people are presented in detail in Ito et al. 2013. The approach is underpinned by research results and can be classified as an "ecological approach" in which pedagogical principles are also clearly formulated:

„Our hypothesis is that in order to develop these cross-cutting repertoires of practice, young people need concrete and sustained social networks, relationships, institutional linkages, shared activities and communication infrastructures that connect their social, academic, and interest-driven learning. It is not enough for young people to have knowledge 'in their head' and expect that they can apply it appropriately and effectively in varied settings on their own. They need caring adults, supportive peers, shared cultural references, and authentic ways of contributing to shared practices in order to mobilize their skills and knowledge.“ (Ito et al. 2013: S. 47)

Three spheres are identified as central to the model (Ito et al. 2013: p.62):

- peer-supported
- Interest-powered
- Academically oriented

Furthermore, three core characteristics of Connected Learning are named, which are regarded as design principles (Ito et al. 2013: p.74):

- production-centered
- shared purpose
- Openly networked

In the context of Connected Learning research, there is the Connected Learning Research Network, which is supported by the MacArthur Foundation in the context of the Digital Media and Learning Initiative: <https://clrn.dmlhub.net/>. At <https://researchtools.dmlhub.net/> research tools such as questionnaires and interview guidelines for the documentation of Connected Learning learning experiences are openly made available.

In der „7 Things You Should Know About...“-Serie der EDUCAUSE Learning Initiative (ELI) werden mögliche Implikationen des Einsatzes von Connected Learning wie folgt beschrieben: „Connected learning requires not just the acquisition of knowledge but also an understanding of how to use connections to find answers, seek out mentors and experts, investigate procedures, experiment with possibilities, and develop competencies. In light of this complexity, many aspects of the way students, faculty, and institutions work to accomplish the teaching and learning mission will need to be rethought in order to respond to the new opportunities and changed landscape“ (EDUCAUSE 2013).

Connected Learning focuses strongly on the networked aspects of the present and thus highlights the cross-setting aspect as a possible characteristic of learning and educational processes. Open Badges and Connected Learning are therefore potentially compatible at first glance. A first investigation into this can be found in the work of Sheryl L. Grant, which formulates a balanced conclusion:

„While badges have the potential to fundamentally alter how we represent our learning pathways through traditional and nontraditional institutions of learning, they are not a panacea. Badges cannot create jobs. Nor should they be expected to communicate everything there is to know about a learner, including skills, talents, achievements, and qualities that a person might not want assessed or made public. [...] If we assume that values, trust, and relationships are as important in digital learning environments as they are offline, badge systems may fulfill some of the expectations and potential they hold for recognizing skills, qualities, abilities, and achievements in connected learning environments.“
(Grant 2014: S.49)

Connected Learning, with its networking requirements and cross-setting aspects, may challenge traditional educational settings, which focus on individual institutions. With regard to the German-speaking area, reference should be made here to the study "Educational partnerships between schools and out-of-school actors in media education", which presents the challenges in detail even for simple partnerships (Brüggen et al. 2017). Connected Learning can be seen both as a research approach and in some ways as a possible educational reform.

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