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Education with Digital Culture:
Shifting the Paradigms of Prospective Knowledge by Mediatization

Abstract

This article presents the paradigm shift, especially in school education, under the conditions of current mediatization, whereby we understand education initially as a communicative system that is dedicated to the acquisition of new and future relevant knowledge in lifelong processes of appropriation. To this end, educational institutions demand an educational language that screens out those who cannot serve that linguistic register. Arguing with regard to Rawls and Nussbaum, we present this selection mechanism under the conditions of current mediatization as both ideologically outdated and practically reducible and refer to current models of professionalization of teachers and international competency frameworks for digital media education.

Zusammenfassung

In diesem Beitrag wird der Paradigmenwechsel, insbesondere in der Schulbildung, unter den Bedingungen der gegenwärtigen Mediatisierung vorgestellt, wobei wir Bildung zunächst als ein kommunikatives System verstehen, das dem Erwerb neuen und zukunftsrelevanten Wissens in lebenslangen Aneignungsprozessen gewidmet ist. Zu diesem Zweck fordern Bildungseinrichtungen eine Bildungssprache, die diejenigen ausklammert, die dieses Sprachregister nicht beherrschen. Bezugnehmend auf Rawls und Nussbaum stellen wir diesen Auswahlmechanismus unter den Bedingungen der gegenwärtigen Mediatisierung als sowohl ideologisch veraltet als auch praktisch reduzierbar vor und verweisen auf aktuelle Modelle der Professionalisierung von Lehrenden und internationale Kompetenzrahmen für die digitale Medienerziehung.
Keywords: Mediatization, inclusion, educational language, teacher training, capability approach

1 Education as a communicative system

"Education" describes diverse forms of acquiring new "competencies." Even this very general approach to the concept of education forces us to make further differentiations because, despite the diversity of educational and psychological concepts (cf. Weinert, 2001), competencies always mean a structure of knowledge, skills, strategies, and attitude (cf. Bergsmann et al., 2015). This makes it clear, however, that education is an

occurrence in which the educational process for the learner involves a teaching person who, in some way, controls this learning process directly or who provides the opportunity for independent learning indirectly through specific offers. The German language (as well as the Slavic languages) differentiates

> between education in the tradition of German philosophy, i.e. developing personality and allowing individuals to participate in human culture, and qualification, i.e. establishing knowledge and skills that are relevant for vocational practice. (Klieme et al., 2008, p. 6)

Both "Bildung" and "Erziehung" in the sense of qualification are based on a social situation in which people communicate with each other. Communication here means first of all the basic and descriptive use of a language that can take on different degrees of complexity and then other systems of symbols such as writing, mathematics, music etc. However, this description presupposes two aspects, which are decisive for the question of the relationship between youth (as the target group of education) and a digitalized culture as the horizon before which the process of education is currently to be shaped. One is the question of the necessity of symbolized communication, the other the question of the normative concept of the construction of this symbolized communication.

An educational science will have to consider this issue concerning both aspects. First, the process of communication-mediated education must be questioned as to its necessity. Philosophical anthropology offers the answer to this question. It examines what characteristics distinguish a person as a human being. Classically, these were metaphysical conceptions of the human being, which were also understood normatively as an educational goal. Since Kant and up to the present day, a "post-metaphysical thinking" (cf. Habermas, 1992) has prevailed, in which the specificity of the human being is no longer determined essentially but functionally. The human being is what it can become under the conditions of its specific historical existence (its *conditio humana*, cf. Rath, 2019) – "can" is understood as the functional ability to understand and shape its reality. With regard to our theme, therefore, we must remember above all the definition of man as *animal symbolicum* by Ernst Cassirer (1944). He stresses that man can only open up his world in symbols. Historically, this fundamental mediality of man realizes itself differently in the metaprocess of "mediatization" (cf. Krotz, 2001, 2007, 2009). In this sense, we understand "digitalization" of the present as an epochal realization of human mediality and thus also as a functional determination of culture. This mediatization thus also refers to language in the broadest sense (verbal, written, iconic). Contemporary culture is digital, education provides the "enculturation" (Gavelek & Kong, 2012), i.e. it conveys digital culture to the next generation as "their" culture.

This diversity of symbol systems, however, did not find its way into institutionalized pedagogical contexts concerning language as a world-mediating symbol system. Instead, the school system today presupposes a supposedly self-evident competence that simultaneously functions as an assessment of linguistically mediated educational ability. In this respect, the linguistic realization of institutionalized education, as des-

cribed in the following, is an ethical problem that can be solved through the conscious use of digital media. They make it possible to undermine excluding language norms. Participatory (cf. Jenkins & Kelley, 2013) and convergent (cf. Jenkins, 2006) media use and appropriation competences, as they characterize the everyday digital media activities of today's children and young people, can have a scaffolding function. Our contribution aims to draw attention to this area of competence, which can be used in schools, and to promote its recognition as an essential youth cultural practice for institutional education.

2 "Language of education" – an exclusionary system

The connection between children's linguistic codes and their intelligence, as assumed by Basil Bernstein (1961, 1962) in the 1960s, can be considered scientifically outdated (cf. Grainger & Jones, 2013; Jones, 2013). Rather, one must speak today of an initially only different repertoire of linguistic systems available to children (cf. Snell, 2013). From an ethical point of view, in the sense of social justice (cf. McNamara et al., 2019) the demand must be made to demythologize the myth of a specific educational language of instruction and teaching (in German "Bildungssprache", cf. Gogolin & Duarte, 2016), which is still being propagated today, as a necessary medium of school education.

Since language is acquired through socialization, this elaborate style of language is by no means a self-evident "educational capital" (cf. Bourdieu, 1986), even for monolingually socialized children from educationally disadvantaged milieus. The connection between origin-specific language and education is particularly dilemmatic because participation in educational processes for further language acquisition is only granted to those who already have this elaborated language. The educational language is "shaped by the culture of the institution school" (Schnoor, 2018, p. 74, own translation). It is a medium that the institution school demands in order to enable learners to access education. Here, a selection mechanism becomes apparent: those who cannot use the educational language will not be able to acquire any – or even little – education.

Educational language is a "special" language with an excluding effect. It is not an everyday or ordinary language, but a special "register" (Biber & Finegan, 1994; Blommaert, 2013) for the field of "school." It is defined and used by those who govern schools: Ministries, textbook publishers, teachers, but also social groups such as philologists' associations, parents' initiatives, and others. There is no precise definition of what educational language looks like, no "dictionary of educational language." It is functionally the language used in school contexts or assumed to be the "norm". It marks spelling and grammar mistakes, requires a certain style for certain grades, and is also useful in written texts and, to a certain extent, even in oral communication in class.

Access to education is, therefore, first and foremost a normative question. Who should participate in "education"? Education is a means of social participation in ge-

neral. And since educational language is the prerequisite for access to acquire "institutionalized cultural capital" (cf. Bourdieu, 1986), we have a societal problem: How can language relevant to education be acquired if one already needs it in order to have a "fair" (cf. Rawls, 1999) chance at all in the selective educational institutions? It becomes the initial prerequisite for participation – and those who do not master this code remain excluded.

3 Fair educational opportunities – ethical requirements

The educational justice democratic societies stand up for under the conditions of mediatization must take into account the mediality of the individual. The human being as *animal symbolicum* is dependent on language as a fundamental medium and subsequently on media in general and digital media in particular. The ability to develop this mediality in the educational system cannot, as shown above, be delegated to the native family; rather, it is the prerequisite for education in general. It is therefore ethically necessary to clarify which principles are to be applied in order to realize educational justice and which objectives these principles would then have to realize in terms of content. In the following, we will address the first aspect by referring to John Rawls' *Theory of Justice*, and we will answer the second aspect by referring to Martha Nussbaum's *capabilities approach*.

Rawls illustrates the basic principles of a democratic society with the construct of a thought experiment. This thought experiment belongs to the classical literature on contract theory, especially with Thomas Hobbes, John Locke, and Jean-Jaques Rousseau. In 1971 Rawls took up this tradition in *A Theory of Justice*. It is the construct of a pre-societal state of nature (as Hobbes and Locke call it) or the "original position" (Rawls, 1999, p. 11).

The moral-philosophical point of the "original position" with Rawls as a "purely hypothetical situation" (ibid.) is the ascertainment of a not purely functional, but a *normative* need for order. It is the ascertainment that human beings are in principle at the mercy of other human beings under "natural" or better: pre-societal conditions, namely under the conditions of arbitrariness and not, as Rawls characterizes it, of "fairness" (ibid., p. 3).

Thought experiments do not represent a historical reconstruction of social evolution. Instead, they are the construction (cf. Miščević, 2018) of an agreeable social structure, in which the basic principles can be derived from the free and equal consent of the citizens. In extension of the classical construction of the "state of nature", Rawls assumes the democratic ideal of society as accepted. With the purely hypothetical character of the "original position", he is interested in a model of the rational construction of processes that are supposed to ensure societal justice of procedures.

Rawls thereby determines the original position as a model of a discourse in which societal "parties" (Rawls, 1999, p. 12) define principles of action for a democratic and

participatory society in which the individual interests of citizens are accepted as a measure of individual civic action. One result of this thought experiment is the so-called "maximin criterion" (ibid., p.72). This criterion states that a change in social distributions (whether economic or in opportunities for participation) is only considered generally acceptable if the change does not lead to deterioration in the weakest member of society. This rule of social distributive justice is acceptable, since the participants in this thought experiment act under a "veil of ignorance" (ibid., p. 11). They do not know their potential social situation.

When applied to the question of *fair* educational opportunities, this means that the *parties* of this discourse in their *original position* will only accept those educational policy regulations that also allow them *fair* access to education. The regulation of the educational system in favor of an educational prerequisite such as the educational language would come into conflict with this *maximin criterion*. The groups most disadvantaged by their social and cultural background, physical as well as mental impairments would not get an "advantage of those less fortunate" (ibid., p. 65) from this regulation, but an additional difficulty. Because in a developed democratic society, participation in education is a fundamental component of a successful life, the deterioration of participation in education represents an unfair disadvantage. How could this participation in education or in more succinct terms *educational fairness* be thought of more precisely?

Traditionally, successful life is tied to certain skills or goods. Under the veil of ignorance, every party will ask itself what conditions must be fulfilled in order to acquire such competencies and thus goods in the first place. This shows that under the veil of ignorance of Rawl's thought experiment, the above introduced competences prove to be the second-order conditions: They depend on specific conditions to acquire or to train these competencies. The *capabilities approach* of the moral philosopher Martha Nussbaum reflects precisely this conditionality of the claim to competence.

Martha Nussbaum defines these conditions for the realization of opportunities as *capabilities*. She emphasizes the *ethical* claim to the provision of specific capabilities or possibilities for realizing basic human needs, which, as a total, make up a successful life. Concrete competencies, which Nussbaum calls "functioning" (Nussbaum, 2000, p. 86), are decisive for the individuals to realize their success. Still, as an ethical concept, it is a matter of a fundamental "human equality" (ibid.), whose "capabilities" (ibid., p. 70) must be institutionally secured. These framework conditions are both individual and social. They are dependent on the resources one brings with one and on what is made possible in the individual situation. Politically and thus pedagogically, the provision of capabilities becomes the *target norm*, even as a basis for competences. This target norm thus becomes a demand, the realization of which is not only based on the individual but also politically on the social framework conditions that are decisive for the conditions of realization of individual world-appropriation (German "Bildung") and thus the acquisition of competences. In various publications (e.g., 2000, 2007),

Martha Nussbaum describes the ten[1] decisive capabilities as parts of human rights. These ten capabilities are very general. They do not focus on concrete forms of political action, but remain abstract in two senses: abstract, because they form the *preconditions* for specific competencies, but also abstract, because they ask about the humane *ways of life* that are to be realized through the competencies.

The capabilities 4, 7, and 10 are particularly relevant for our context:

4. Senses, Imagination, and Thought. Being able to use the senses, to imagine, think, and to reason – and to do these things in a 'truly human' way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid non-beneficial pain. […]
7. Affiliation
A. Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.) (Nussbaum, 2007, p. 23)
10. Control over One's Environment.
A. Political. Being able to participate effectively in political choices that govern one's life; having the right of political participation and protections of free speech and association. (Ibid., p. 24)

Here the change in the capabilities approach as opposed to a genuine competence concept becomes clear. It is about the *life practice* of human beings and the *skills* they need to perform this practice. *Language* (also educational language) is therefore not a purpose in itself. Language is subject to the much broader objectives of meaning, conceptuality, sociality, and political participation.

In the current form of mediatization as digital culture, the claim to access to education is not only to be understood as a fundamental capability in terms of language competence. This applies equally to media in general and digital media in particular. As a prospective, i.e., future-shaping technologies, they realize the capabilities of social participation in a specific way.

In the following, we will present four concepts that try to promote educational fairness by taking the media practices of teachers and learners into account. *The Universal Design of Learning* uses digitization to compensate already structurally for individual impairments and learning barriers. The *ITPACK model* integrates the metaprocess of mediatization and the comprehensive educational goal inclusion into the well-known TPACK model of Koehler and Mishra. The *European Framework for the Digital Competence of Educators* systematically describes the different areas of action and

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[1] 1. Life, 2. Bodily Health, 3. Bodily Integrity, 4. Senses, Imagination, and Thought, 5. Emotions, 6. Practical Reason, 7. Affiliation, 8. Other Species, 9. Play, 10. Control over One's Environment (cf. Nussbaum, 2007, pp. 23–24).

competence of digital education on the meso level. Moreover, the *PEAT model* finally moves normative aspects into the focus of didactic reflection on the micro level, namely the individual needs of teachers and the ethical knowledge that professionalized teachers should make the basis of their work.

4 Concepts of educational fairness

The role that digital media plays in achieving educational equity can be described by the categories of *Universal Designs of Learning* (UDL). UDL takes up a concept from technology, in which devices are constructed in such a way that all people can use them, i.e., are barrier-free (Matiouk, 2019, p. 361). Rose & Meyer (2006) transferred this approach to the organization of education. Learning should thus be designed in such a way that all learners have access to necessary information as well as to various forms of media expression as part of the learning process. Learners of all individual conditions should be motivated. *Digital* media play a central role in this today: They are part of the world of children and young people and are therefore indispensable for up-to-date learning and thus for motivation in general.

Digital media offer access to texts of different mediality and create medial ways of expression. Of course, this is especially true for the use of digital media as *assistive technologies* (cf. Bosse, 2019). Children with less severe disabilities can produce texts via dictation, and digital correction functions enable users to adapt their texts to the correct standard language of everyday life or educational language. Research on the WWW also displays information in other languages of origin. Artificial intelligence functions impressively as translation aids. Social media in their Universal Design thus offer scaffolding (cf. Wood et al., 1976; Bruner, 1978; Gibbins, 2002; Hammond & Gibbons, 2005) for all.

Facilitated access to an almost infinite number of databases allows for all educational participation – provided that these accesses may be used and that critical, quality-oriented use is taught. Neither of these requirements has yet been satisfactorily met in Germany, as the most recent ICILS study (Fraillon et al., 2019) has shown. In international comparison, German teachers are less aware of the potential of digital media, especially for processes such as participatory learning, individual support, sustainable learning and motivation, and these opportunities are also less appreciated. Moreover, German teachers are significantly more insecure in digital activities than their international colleagues. In lesson planning – especially in the humanities and social sciences – digital media are often left out in their convergent functions; they are only used as digital successors to old media. Here, even before teachers are trained, they already have robust beliefs that impede such flexible working concepts. Students of teacher training in Germany seem to be particularly weakly responsive to digital media compared to students of other countries (cf. Schmidt et al., 2017, p. 38). Thus, there is a medial habitus selection already before the beginning of the studies.

With the TPACK model, Koehler and Mishra (2012) tried to optimize professional teaching by thinking about the content (C), technology (T), and pedagogy (P) together, or by relating them to each other. The intersection referred to particularly well-networked lesson planning. However, this model is oriented towards a level of teaching practice that remains rooted in the school institution. Social and ethical frameworks like contemporary mediatization and0 social paradigms of action like inclusion have not yet been addressed. This should be done by expanding this model to ITPACK (Marci-Boehncke, 2018).
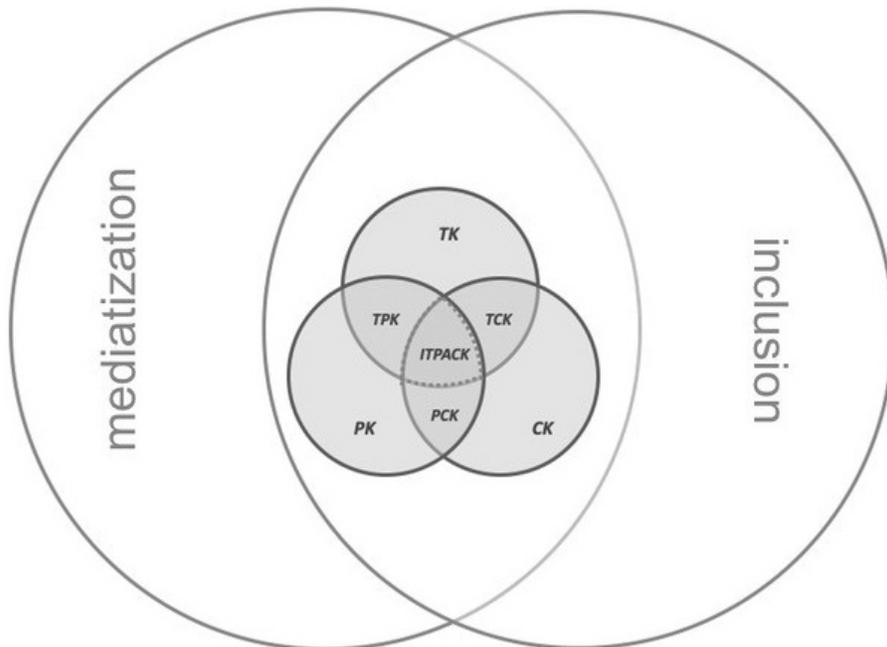

Figure 1:   From TPACK to ITPACK – TPACK concept extended by mediatization and inclusion (own illustration)

Embedded in the meta-theories of *mediatization* and *inclusion* at the macro-level of society, educational action should be more strongly oriented towards social reality, indeed towards the social future. For digital culture, this means not only that current convergent applications and means of expression on the software interface should be used continuously, and the diversity of new content and forms of communication should be taken into account. Above all, it implies that digitality as the language of the 21st century represents the new educational language. An understanding of how our communication with machines can be responsibly designed is particularly necessary for current ethical issues, such as decisions about self-driving cars. The limits of algorithms, problems just with supposedly socially participatory and thus fair voting possibilities (e.g., the *moral machine experiment* at Massachusetts Institute of Technology, cf. Awad,

et al., 2018; cf. Rath, in print) can only be recognized by looking at the "backstage" (cf. Rath, 2017) of digital communication.

The model of the "European Framework Digital Competence Framework for Educators" DigCompEdu (Redecker & Punie 2017) follows a normative hierarchical logic, wants to orient proactively and thinks several areas of action together: that of teachers as individuals outside the classroom (*Educators' professional competences*), the classroom joint teaching activities of teachers and students (*Educators' pedagogic competences*), and the competence framework of learners (*Learners' competences*), which is also shaped by their interests and needs. At the interface between the scope of action of the classroom and that of the students, the aim is to "empower the learners". This is explicitly about "using digital technologies to enhance inclusion, personalization and learners' active engagement" (Redecker & Punie, 2017, p. 16). The purpose of digital-media education is thus also considered in its function of helping to overcome language barriers. The universal design of many digital devices already achieves a great deal in this respect. Therefore, a didactic teaching and learning concept that takes universal access into account also in the design of the learning arrangement and the possibilities of expression (Rose & Meyer 2006) should not underestimate language barriers. Digital media can provide a wide range of assistance in the acquisition of texts in school languages through translators, dictionaries in different languages, thesauruses, lexicons, other text or media formats, offers at different levels of complexity, right up to individual, collaborative counseling.

The categories 5 (*Empowering Learners*) and 6 (*Facilitating Learners' Digital Competence*) of the *DigCompEdu* framework shift the decision about the relevance and concreteness of learning from the cultural past to the cultural future, from education for an "outdated world" (Jenkins & Kelley, 2013, p. 9) to prospective knowledge. After all, the education of students takes place in a rapidly changing world – also always concerning mediatization. Teachers receive suggestions for the evaluation of their medial action type in six stages – from newcomer to pioneer – whose function is not to evaluate, but rather to enable self-reflection and the resulting visible "blind spots" in digital didactic action. This self-reflection is primarily concerned with the question of how teachers allow, promote, and value the many functions and options of digital and collaborative work – or not.

However, such a didactic approach oriented towards participation, convergence, and empowerment requires more than a top-down conception as proposed by *DigCompEdu*. It is always also about the individual and professionalized beliefs of the teachers themselves. While the ethical principles, as we saw with Rawls and Nussbaum, may also justify mediatization at the "meso level" (Krotz, 2007, p. 257), mediatization is realized in its ethical implications primarily at the "micro level" (ibid.) of teachers' attitudes. The Erasmus+ funded *Project Developing Student Teachers' Digital Competence* DICTE (cf. McGarr & McDonagh, 2019) has pointed out that the terminological basis for a common understanding of digital media use among educational autho-

rities is already far from being in place. The authors, therefore, want to give teachers a very brief orientation, particularly about their own and students' competencies in the areas of technology (T), pedagogy (P), attitudes (A), and above all ethics (E). This *PEAT model* (McGarr & McDonagh, 2019, pp. 31–32) explicitly focuses on the normative consequences of digital development at the micro level of professionalized actors.

Only if both succeed, the *retrospective* perspective on one's attitudes (PEAT) and the *prospective* perspective on the normative, ethically plausible requirements of digital culture, a professionalized school will not select but rather promote the next generation. The school language will then no longer represent a "sticky floor" that prevents participation. Significant educational disadvantages will be overcome if the appropriate use of all the possibilities of digitality as help to self-help is promoted and included and not prohibited as a breach of school rules.

5 Conclusion

Educational language as a prerequisite for access to institutionalized education represents an unfair selection mechanism, especially when individuals are deprived of the opportunity to acquire this prerequisite themselves, beyond their social origin. Our educational systems must offer the prerequisite for social success and the opportunity-oriented realization of individual abilities to achieve a fair society. Every person must be fundamentally capable of participating in society. If the mediatization of an era is the *conditio humana*, participation in this mediatization is also a claim to institutionalized education (cf. Marci-Boehncke, 2019b). Knowledge is no longer acquired primarily from books, but increasingly in social-communicative, current and thus digital discourses. Being able to participate in these discourses is a precondition.

Moreover, for those parts of education that are handed down in the media of the 19th and 20th centuries, it is also helpful to be able to make use of the support possibilities of current mediatization. In our article, we wanted to explain from an ethical and didactic point of view why mediatization and inclusion are changing the paradigms of current educational orientation. Participation under the conditions of current mediatization calls for a shift in the focus of those responsible for education (cf. Marci-Boehncke, 2019a). Instead of insisting on the exclusive form (*educational language*) as a discourse and selection mechanism, the focus should instead be on providing flexible possibilities for the appropriation of content and participation in discourses. Communication and appropriation are possible in digital-mediatized societies based on already technically unified language. Digitality offers various forms of complexity change. Ultimately, everything expresses itself digitally in ones and zeros. Of course, not every subject is simple. There are still hurdles to understanding. However, many of these hurdles can already be removed today through the more consistent use of digital media. With a perspective on accommodative and assimilative possibilities of de-

vices, apps, and the community, access to education and educational language can be expanded. For this, however, an ideology-critical questioning of this language register as an institutionalized social selection mechanism is needed.

References

Awad, E., Dsouza, S., Kim, R., Schulz, J., Henrich, J., Shariff, A., Bonnefon, J.-F., & Rahwan, I. (2018). The Moral Machine Experiment. *Nature*, 563, 59–64. doi: 10.1038/s41586-018-0637-6

Bergsmann, E., Schultes M-T., Winter, P., Schober B., & Spiel, C. (2015). Evaluation of competence-based teaching in higher education: From theory to practice. *Evaluation and Program Planning*, 52, 1–9.

Bernstein, B. (1961). Social class and linguistic development: A theory of social learning. In A. H. Halsey, J. Floud, & C. A. Anderson (Eds.), *Education, economy and society: a reader in the sociology of education* (pp. 288–314). New York: The Free Press.

Bernstein, B. (1962). Linguistic codes, hesitation phenomena and intelligence. *Language and speech*, 5(1), 31–48.

Biber, D., & Finegan, E. (1994). *Sociolinguistic Perspectives on Register*. New York, Oxford: Oxford University Press.

Blommaert J. (2013). Citizenship, Language, and Superdiversity: Towards Complexity. *Journal of Language, Identity & Education*, 12(3), 193–196.

Bosse, I. (2019): Assistive Technologien im Gemeinsamen Lernen. In A. Schumacher, & E. Adelt (Eds.), *Lern- und Entwicklungsplanung: Chance und Herausforderung für die inklusive schulische Bildung* (pp. 169–189). Münster, New York: Waxmann.

Bourdieu, P. (1986). The Forms of Capital. In J. G. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241–259). New York: Greenwordpress.

Bruner, J. (1978). The role of dialogue in language acquisition In A. Sinclair, R., J. Jarvelle, & W. J. M. Levelt (Eds.), *The Child's Concept of Language* (pp. 241–256). New York: Springer.

Cassirer, E. (1944). *An essay on man: An introduction to a philosophy of human culture*. New Haven: Yale University Press.

Fraillon, J., Ainley, J., Schulz, W., Duckworth, D., & Friedman, T. (2019). *Preparing for Life in a Digital World. IEA International Computer and Information Literacy Study 2018 International Report*. Amsterdam: IEA. Retrieved from https://www.iea.nl/publications/study-reports/preparing-life-digital-world

Gavelek, J. R., & Kong, A. (2012). Learning: A Process of Enculturation. In N. M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 2029–2032). Boston, MA: Springer US. doi: 10.1007/978-1-4419-1428-6_868

Gibbons, P. (2002). *Scaffolding Language, Scaffolding Learning. Teaching Second Language Learners in the Mainstream Classroom*. Portsmouth NH: Heinemann.

Gogolin, I., & Duarte, J. (2016). Bildungssprache. In J. Kilian, B. Brouer, & D. Lüttenberg (Eds.), *Handbuch Sprache in der Bildung* (pp. 478–499). Berlin: De Gruyter.

Grainger, K., & Jones, P. E. (2013). The 'Language Deficit' argument and beyond. *Language and Education*, 27(2), 95–98. doi: 10.1080/09500782.2012.760582

Habermas, J. (1992). *Nachmetaphysisches Denken – Philosophische Aufsätze*. Frankfurt/Main: Suhrkamp.

Hammond, J. & Gibbons, P. (2005). Putting scaffolding to work: The contribution of scaffolding in articulating ESL education. *Prospect*, 20(1), 6–30.

Jenkins, H. (2006). *Convergence culture: where old and new media collide*. New York, London: New York University Press.

Jenkins, H. & Kelley, W. (2013). *Reading in a Participatory Culture. Remixing Moby-Dick in the English Classroom*. New York, NY: Teachers College Press.

Jones, P. E. (2013) Bernstein's 'codes' and the linguistics of 'deficit'. *Language and Education*, 27(2), 161–179. doi: 10.1080/09500782.2012.760587

Klieme, E., Hartig, J. & Rauch, D. (2008). The concept of competence in educational contexts. Assessment of Competencies in Educational Contexts. In J. Hartig, E. Klieme, & D. Leutner (Eds.), *Assessment of Competencies in Educational Contexts* (pp. 3–22). Bern: Hogrefe & Huber Publishers.

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

Krotz, F. (2001). *Die Mediatisierung kommunikativen Handelns. Der Wandel von Alltag und sozialen Beziehungen, Kultur und Gesellschaft durch die Medien*. Opladen: Westdeutscher Verlag.

Krotz, F. (2007). The meta-process of 'mediatization' as a conceptual frame. *Global Media and Communication*, 3(3), 256–260. doi: 10.1177/17427665070030030103

Krotz, F. (2009). Mediatization: A concept with which to grasp media and societal change. In K. Lundby (Ed.), *Mediatization: concept, changes, consequences* (pp. 21–40). New York: Lang.

Marci-Boehncke, G. (2018). Von der integrierten zur inklusiven Medienbildung. In T. Hug (Ed.), *Medienpädagogik – Herausforderungen für Lernen und Bildung im Medienzeitalter* (pp. 49–64). Innsbruck: innsbruck university press.

Marci-Boehncke, G. (2019a). Medienbildung, Diversität und das Recht auf Teilhabe: Warum für Lehrkräfte die Vermittlung von digital literacy eine ethische Frage ihres Professionsverständnisses ist. In K. Holzmann, T. Hug, & G. Pallaver (Ed.), *Das Ende der Vielfalt? Zur Diversität der Medien* (pp. 85–100). Innsbruck: innsbruck university press.

Marci-Boehncke, G. (2019b). Narrative über „ideale Medienpraxis" in der Kinder- und Jugendliteratur. Ein Modell zur Reflexion von Einstellungen von Lehramtsanwärter*innen zur „Mediatisierung" als Teil der conditio humana. In M. Litschka, & L. Krainer (Eds.), *Der Mensch im digitalen Zeitalter. Zum Zusammenhang von Ökonomisierung, Digitalisierung und Mediatisierung* (pp. 135–151). Wiesbaden: Springer VS.

Matiouk, S. (2019). Innovation Technologiedesign. In I. Bosse, J.R. Schluchter, & I. Zorn (Eds.) *Handbuch Inklusion und Medienbildung* (pp. 359–367). Weinheim: Beltz Juventa.

McGarr, O. & McDonagh, A. (2019). *Digital Competence in Teacher Education. Output 1 of the Erasmus+ funded Developing Student Teachers' Digital Competence (DICTE) project*. Retrieved from https://dicte.oslomet.no

McNamara, T., Knoch, U., & Fan, J. (2019). *Fairness, Justice and Language Assessment*. Oxford: Oxford University Press

Miščević, N. (2018). Simulation and Thought Experiments. The Example of Contractualism. *Croatian Journal of Philosophy*, 18(1), 161–190.

Nussbaum, M. C. (2000): *Women and Human Development. The Capabilities Approach*. New York: Cambridge University Press.

Nussbaum, M. C. (2007). Human Rights and Human Capabilities. *Harvard Human Rights Journal*, 20, 21–24.

Rath, M. (2017). Vom Ende der Profession. *MedienJournal*, 40(2), 20–33. doi: 10.24989/medienjournal.v40i2.49

Rath, M. (2019). Metaprozesse als conditio humana – Zur ethischen Potenz einer philosophischen Leerstelle. In L. Krainer, & M. Litschka (Eds.), *Der Mensch im digitalen Zeitalter: Ethische Fragen zum Einfluss von Ökonomisierung, Digitalisierung und Mediatisierung auf die conditio humana* (pp. 11–29). Wiesbaden: Springer VS.

Rath, M. (in print). Sind "moral machines" kulturrelativ? Maschinenethische Anmerkungen zu einem psychologisch-informatischen Experiment. In M. Prinzing, & N. Köberer (Eds.), *Orientierungssuche im Digitalen – zwischen Innovationsdruck, Postfaktizität und sich auflösenden Kommunikations- und Wahrnehmungsgewissheiten*. Baden-Baden: Nomos.

Rawls, J. (1999). *Theory of Justice*. Revised Edition. Cambridge, Mass: The Belknap Press.

Redecker, C., & Punie, Y. (2017). *European Framework for the Digital Competence of Educators: DigCompE-du. Luxembourg: Publications Office of the European Union*. Retrieved from http://publications.jrc.ec.europa.eu/repository/handle/JRC107466

Rose, D. H., & Meyer, A. (Eds.). (2006). *A Practical Reader in Universal Design for Learning*. Cambridge, Mass: Harvard Education Press.

Schmid, U., Goertz, L., Radomski, S., & Thom, S. (2017). *Monitor Digitale Bildung. Die Hochschulen im digitalen Zeitalter*. Gütersloh: Bertelsmann Stiftung. Retrieved from https://www.bertelsmann-stitung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/DigiMonitor_Hochschulen_final.pdf

Schnoor, Birger (2018): *Soziale Herkunft und Bildungssprache*. Wiesbaden: Springer VS.

Snell, J. (2013) Dialect, interaction and class positioning at school: from deficit to difference to repertoire. Language and Education, 27(2), 110–128. doi: 10.1080/09500782.2012.760584

Weinert, F. E. (2001). Concept of competence: A conceptual clarification. In D. S. Rychen, & L. H. Salganik (Eds.), *Defining and selecting key competencies* (pp. 45–65). Bern: Hogrefe & Huber Publishers.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem-solving. *Journal of Child Psychology and Psychiatry*, 17, 89–100.