Deconstructing the Virtues of Openness and its Contribution to Bildung in the Digital Age

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Abstract

This contribution critically discusses the prospect of openness for Bildung in the digital age. The wave of openness has challenged certain foundations of education. One central concern is education as a public good with equality at its center. Prima facie, openness claims to boost Bildung as both concepts revolve around the idea of opening education. This article examines this nexus by deconstructing the understanding of openness as a unidirectional and monolithic block. This notion—sometimes implicitly—is based on the idea that all initiatives of openness in the context of education contribute to the general aim of Open Education or the broadening of access to education. An often-ignored fact is that various concepts are subsumed under the term 'openness' and are not interwoven but instead loosely coupled.

Moreover, these various efforts for openness focus on very different goals and types of problems, suggesting that openness is adopting the Bildung approach without adequately considering its pedagogical underpinnings. From a research perspective, the extent to which one initiative in the 'openness continuum' contributes to another's problem-solving requires critical review. Each initiative, such as Open Educational Resources (OER) or Open Educational Practices (OEP), goes hand in hand with a specific constellation of problems that supports different corridors of an opening to a greater or lesser extent. Furthermore, the discussion surrounding openness, which is often politically charged, can be counteracted in scientific discourse by understanding and further analyzing openness and mechanisms of opening in relation to closeness. Determining the added value of openness for Bildung in the digital age requires deliberately refraining from the normativity of the openness movement and the cascading understanding of the different concepts for Open Education. In this way, an alternative perspective is unveiled: openness understood less as a counter-concept to closeness and more as a mesh of relationships between different initiatives. From this perspective, it seems plausible to critically examine each concept independently and assess their respective contributions to Bildung in the digital age.

Introduction

'Openness' is in vogue; the term can be found in diverse contexts and disciplines, but it refers to very different things. In the educational science discussion, the concept of openness has evolved around several concepts, such as Open Education, Open Pedagogy, Open Educational Practice (OEP), Open Educational Resource (OER), or Open Informational Ecosystems. These terms all have in common that they position openness as a counter-concept to closeness and, in this way, programmatically set openness as a positively connoted target category to be achieved. Moreover, these concepts can all be associated with central discourses in educational science, including the discourse on broadening access to education and opening up educational institutions. Both discourses are linked to the political appeal for educational justice and social participation (for a critical discussion, see Bauer et al. 2014). Education as a project of the Enlightenment has always been connected with the promise of access to education for all. The current discussion can tie in with this line of argumentation. Since the beginnings of computer technology, its protagonists have used this promise—which has remained unfulfilled—to semantically enhance their digital solutions by offering the prospect of education for all, be it via suitable educational products or open learning platforms (see Hof 2018).

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Deimann (2014) refers to the frequently used rhetoric of liberation and criticizes the superficial adoption of the concept of Bildung in connection with 'openness' and its political connotations. Nevertheless, the educational science discussion has long recognized the narrow definition of the formula of 'Bildung for all', and literature has addressed the complex mechanisms of inclusion and exclusion in Bildung for social participation and the allocation of opportunities through mechanisms of selection in the educational system (and the inheritance of educational opportunities). Perhaps this vague overall picture is one of the reasons why, as Deimann (2018) has criticized, it is difficult for educational theory to become involved in the recent debate on openness in the context of digitalization.

The opening of education can first be classified as a political agenda that addresses specific social concerns about educational justice to overcome (existing or supposed) inequalities or injustices. Paradoxically, these education efforts relate to a system, the function of which is precisely to organize selection and justify the allocation of opportunities in a society based on proven competencies. However, the opening of certain educational pathways always simultaneously implies closure (Lenzen 2004). Thus, the value of a university degree changes when it is no longer achieved by a few but by the majority of a cohort. With the opening of a previously exclusive educational pathway, the institution's privilege closes. New mechanisms of social regulation of distinction emerge, for example, by establishing private (paid) universities or additional services such as stays abroad or a specific certificate as possibilities for differentiation.

At the same time, there is the idea that the various initiatives of openness culminate in a social movement, the so-called 'Open Movement':

> *'The movement toward greater openness represents a change of philosophy, ethos, and government and a set of interrelated and complex changes that transform markets altering the modes of production and consumption, ushering in a new era based on the values of openness: an ethic of sharing and peer- to-peer collaboration enabled through new architectures of participation'. (Peters & Roberts 2011, p. 1)*

> *'Core business components are relabelled in order to align them to the overall openness movement which is characterised as a political and a social project'. (Peters 2008)*

At least implicitly, it is assumed that the various openness initiatives are all aimed at one goal and fit together like individual blocks to form a building. In this manner, they contribute to the overall goal of opening up education. However, this assumption will be questioned in the following section. Here, it will be argued that the various open initiatives pursue different and individual concerns that have the potential to build on each other but do not necessarily do so. One initiative can thus contribute to the achievements of another initiative, but it may not have to. The assumption of a cascading relationship between the various open initiatives leaves their relationship obscured and makes a more nuanced analysis of their mutual relationships difficult. Therefore, in this section, it is proposed to assume a multidimensional network of different efforts to achieve openness. Thus, it is essential to understand more precisely how the individual initiatives relate to each other, such as whether they stimulate or hamper one another. Knowledge about this mesh, so the hypothesis intends to help classify more precisely the different approaches to an opening according to their respective contributions. This section will also reveal that opening should be understood as a concept in relation to instead of a counter-concept of closure.

Dimensions of the opening

One of the first initiatives for openness is located within the context of software production, where the licensing model of 'open source'—beyond the traditional, closed licensing variants—revealed itself to be (in certain cases) a viable model for the sustainable development of software in the 1980s. Contrary to earlier assumptions, the release of source codes to the developer community, as in the case of the LINUX operating system, could help open up new ways of continuing software development in a community. The conditions of this fundamentally successful initiative of an open approach serve as a backdrop for the analysis of initiatives in the educational context labeled 'open'.

Table 1 contains a (non-exhaustive) overview of various strands of discussions on openness with relevance to the educational science field. Concerning the 'open movement', these strands can be understood in a hierarchical logic as a cascade of initiatives, in which one initiative contributes to the goals of the others. Open Education, for example, would be a superordinate approach aimed at further opening access to education. An Open University and OER would—subordinate to Open Education—support the goals of Open Education. If understood as a cascade, the use of open standards contributes to the implementation of OER, the consistent opening of design dimensions of education practices (in the sense of transparency and participation) contributes to the openness of education, and openness in education contributes to a social culture of sharing.

Approach	Goal	Authors et al.
Open Culture Open Innovation	Culture of sharing in society in organizations, e.g., as part of the innovation process	Powell (2015)
Open Education	Widening access to and participation in education	Peters (2008), Deimann & Farrow (2013)
Open University	University that has committed itself to open access (often also as a distance learning university)	Tait (2008)
Open Pedagogy	Consistent opening of all pedagogical design dimensions (including lesson planning, teaching, examinations, etc.) through transparency and joint participation of teachers and learners	Hegarty (2015)
Open Educational Practices	Willingness to share, cooperate and reflect together with others (teachers and students)	Ehlers (2011, 2013)
Open Informational Ecosystem	An environment that provides and shares access to materials, e.g., via metadata	Heinen und Kerres (2016)
Open Courses	Courses that can be taken by learners free of charge	Downes (2017)
Open Educational Resources, Open Text-books, Open Courseware	Teaching and learning materials with an open license, e.g., textbooks, course materials, online training	Hilton, Wiley, et al. (2010)
Open Content, Open Access	Materials with an open license, e.g., articles in academic journals	Kuhlen (2013)
Open Standards Open Source	Open standards, e.g., Creative Commons software products, the codes of which are freely accessible, editable, and redistributable	Rusell (2014)

Tab. 1: Current approaches to an opening in the educational science field.

However, when we look at these initiatives' relationships, alternative arguments to the assumed interrelatedness can be made. The objectives of Open Education can be achieved with OER as well as with Closed Educational Resources. Broad societal access to education can be based on openly licensed teaching-learning materials as well as on materials provided to learners with a closed license. In the case of schools, this dualism has been resolved thus far through agreements with textbook publishers. Even if OER can contribute to opening education, the argument in this section is that the goal of Open Education does not depend on OER. From this perspective, however, it is necessary to evaluate whether and to what extent greater availability of OER actually leads to broader participation in education. For developing countries that may have poor educational infrastructure, OER seems promising as a means of making knowledge more broadly available; this is at least one of the explicitly expressed reasons for some foundations' commitment to OER. At the same time, this free export of Bildung from Western, industrialized countries is also being debated as an 'imperialism of Bildung' (Deimann 2018). Knowledge is never prepared in a culturally neutral manner but rather always implies the impartment of specific values.

If these positive effects of OER actually occur, or whether OER ultimately only promotes the already well-educated (in industrialized countries) to educate themselves further, remains to be examined in more detail (see Kortemeyer 2013). In research on Massive Open Online Courses (MOOCs), the latter tendency is evident due to the strong selectivity of participation (see Dillahunt, Wang, and Teasley 2014; Liyanagunawardena, Adams, and Williams 2013). However, the availability of a resource is not the same as Bildung, and a system of higher education institutions cannot be reduced to their libraries. Moreover, access to Bildung at the societal level is controlled by quite different mechanisms than the mere availability of educational resources (Kupfer 2011). It can therefore be expected that the license under which a medium for Bildung is provided has little impact on the quality of learning processes or the broader difficulty of opening up and participating in education.

Another perspective addresses the side effects of the open provision of materials on the Internet, which has received little attention in the often positively charged OER discussion. The increasing distribution of such materials, especially for school lessons, can also be seen critically. The established practice of authorizing textbooks for the school sector, which is practiced in Germany, can thereby be undermined (Tröhler and Oelkers 2005). Fey et al. (2015) and Höhne (2018) point out the implications of this practice: more and more private and interest-driven providers are making them—often attractively prepared but at the same time tendentious—materials available online for instruction (see also Neumann 2015). Open Educational Resources can thus be used as a vehicle for political infiltration and for influencing opinions (e.g., on what at first glance appears to be less political issues, such as 'where does our electricity actually come from?'). The extent to which this openly licensed material then leads to an open debate with other positions remains uncertain. Most notably, not all actors have the same opportunities and resources to reach teachers and learners with their OER in the competition for attention. This dynamic demonstrates that teaching and learning materials that are provided free of charge and licensed for subsequent open use do not automatically fulfill the overriding social goals of open Bildung. Simultaneously, it does not seem appropriate to ban such OER from the classroom as a matter of principle just because such attempts to influence exist. However, the ambivalence indicates that the implications of one opening towards an opening on a superordinate level have to be considered in a much more sophisticated way.
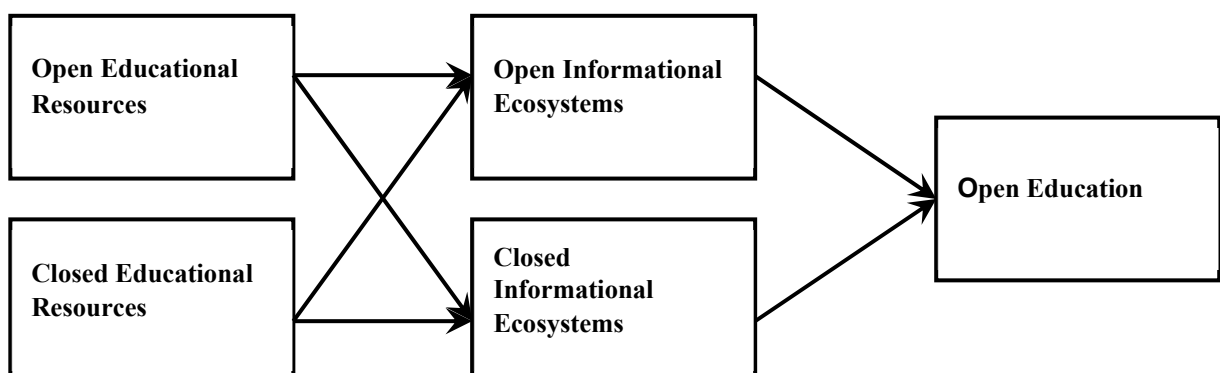
Fig. 1.: On the relation of (some) opening initiatives in education.

Heinen and Kerres (2015) described' Informational Ecosystems' as an essential link between Educational Resources and other levels of opening. Informational Ecosystems refer to an environment in which digital instructional learning materials are made available and can be found and reused in repositories—equipped with metadata—via search engines and portals. Informational Ecosystems can also include opening and closing mechanisms, such as making metadata available and providing information about their mechanisms for evaluating and providing materials. For example, portals for OERs can be found that remain technically closed to their environment, such as by not revealing metadata, thus making networking and exchange with other providers more difficult. Oliver (2015) discussed the significance of the 'permeability' of corresponding ecosystems for Open Education. An Open Informational Ecosystem, on the other hand, can contain both open and closed-licensed materials, for example, when it references materials from openly licensed repositories as well as commercial publishing products. Vice versa, the availability of OER does not automatically lead to an Open Informational Ecosystem. Moreover, an Open Informational Ecosystem that keeps its references and mechanisms open does not automatically contribute to the opening of education. This demonstrates that openness at each level has a function of its own that does not automatically contribute to another initiative's goals at another level.

Actors in the opening of educational resources

In order to understand how individual initiatives to open up education relate to each other, it is beneficial to consider the respective constellation of actors and, for example, to compare the OER initiative with the context of software production. This allows investigation of whether and which obstacles exist and whether and how OER contributes to Open Education and thus to a higher-level goal.

The initiative to license software as open-source came from software producers who were looking for a path to develop their software further. Contrary to the classic software distribution model, the producers who recognized that the release of code could lead to sustainability and possibly also to economic success, for example, by offering consulting services related to the software.

This path is hardly discernible for educational resources so far, meaning their provision does not—yet—open up any new business models through which authors (such as publishers) can refinance themselves.[2] For this reason, little effort is observed on the part of media producers (as in the software industry) to implement the release of teaching and learning materials as OER; instead, they stick to traditional models of media production and marketing.

Other players have become significant in this educational sector, including foundations that want to broaden access to education and state institutions that want to ensure the supply of higher education and schools with digital learning products. They recognize that it will be difficult to successfully integrate the future digital textbook via traditional development, production, and marketing (see Wiley and Gurrell 2009). From this point of view, alternative models of provision can be expected, for

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[2] In order to refinance the provision of MOOCs, we are increasingly finding business models in which refinancing of the production costs for the material is attempted through additional services (consulting, tutorial support, testing, certification).

example, when a federal state has a learning environment with educational resources developed or licensed for a specific topic/subject/school type and in this way ensures the provision and further development of the material. In this example, too, the question remains as to how open these media will be licensed, that is, to what extent the producer makes the resources available or can make them available with a Creative Commons (CC) license. For school authorities, schools and teachers, it is crucial that they can access a curated material pool in a legally secure way and make it available to their students in the first place; this also applies to materials that are not necessarily provided with an open license.

In the following step, from a pedagogical perspective, the question arises of what can be accomplished with the materials in everyday pedagogical work. Creative Commons licenses offer more possibilities for subsequent use, such as through editing, combining, or republishing on other servers than limited licenses. Consequently, these types of licensing are preferred in educational technology, and the various pedagogical scenarios associated with such an opening of materials have been demonstrated in the literature. Attention has been drawn to the pedagogical implications of such an opening and to the opportunities to design schools and lessons differently with OER (Deimann and Farrow 2013).

Nevertheless, the question remains as to whether the additional benefits of this far-reaching opening are sufficiently motivating or adequately recognized, and who is the driver of this opening. In the case of open-source, producers and users have a genuine interest in opening up to continue the sustainable operation and development of software. Further drivers are generally not necessary. Concerning educational resources, often, neither the producer (the teacher/publisher) nor the user (other teachers/learners) can see the additional benefits of this opening up strongly enough for themselves. Thus, the focus shifts to other stakeholders, such as state institutes, school boards, educational institutions, associations, and foundations, that may have a similar interest in the broad availability of OER.

The discourse about openness

The different initiatives for openness previously mentioned, which are discussed and developed in the various discourses of opening, each pursue specific objectives. However, they are not directly interrelated and can hardly be unidirectionally assigned to one overarching social openness goal. When referring to 'openness as a movement' (Peter and Deimann 2013; Edwards 2015; Oliver 2015; Schlagwein et al. 2017), however, an attempt is made to subordinate the various initiatives under a single purpose: 'The notion of openness in education stems from core Enlightenment concepts of freedom, equality, democracy and creativity' (Peters 2008, 11). This raises the question of how the attempt to create such a framework has to be classified and what significance it has (see the critical review of Schulmeister 2013).

Internationally, a discussion has developed reflecting on the construction of an openness movement. It asks what is meant by referring to a 'movement' in the context of the various initiatives of openness. Gourlay (2015) states,

> *'The movement towards 'openness' in education has tended to position itself as inherently democratising, radical, egalitarian and critical of powerful gatekeepers to learning. [...] allegedly 'radical' claims of the 'openness' movement in education may in fact serve to reinforce rather than challenge utopic thinking, fantasies of the human, and monolithic social categories, fixity and power, and as such may be seen as indicative of a "heterotopia of desire"'.*

The criticism is that with openness as a movement, a utopia is formulated only vaguely related to its initiatives. According to Funes and Mackness (2018), this discourse on openness may even contribute to a closure:

> 'this aspirational, utopian narrative – while intending to include and encourage diversity – can lead to exclusion and homogeneity. [...] aspirational norms create a buffer that enables people to ignore what actually happens'.

Thus, Funes and Mackness (2018) identify social justice as the central telos of the openness movement, which, through the normative charging of the individual initiatives associated with it, can have the opposite effect: 'Participants become moral magnets, grouping in the safety of echo chambers and losing the potential for diversity. Norms inside the temple intended to include and foster diversity lead to the opposite'. The discussion within the Open Education movement only works if this telos is recognized. Open communication then tends to conflict with the aspirations of a normatively charged movement. Funes and Mackness (2018) refer to the heated discussion between Stephan Downes and David Wiley about 'real' openness, in which demands for 'right' behavior were made, such as the norm to use certain licenses if one wants to belong to the movement. Farrow (2017) speaks of 'openwashing', with which commercial providers also want to present themselves in a positive light. Openness thus loses a socio-political claim and can become an advertising formula usable for everything.

Mejias (2013) refers to the double affordance of the online world in which A and non-A can simultaneously occur, mainly because the ambiguity of the character is much higher in the online world due to a lack of context. Jacques Derrida makes it possible to say 'to open a space denies the closed spaces that make such an opening possible'[3] or 'the opening of a space closes other spaces'[4] (Derrida 1997, 152f). Likewise, Edwards (2015) notes, 'all forms of openness entail forms of closedness, and it is only through certain closings that certain openings become open and vice versa'. In his comprehensive critique of the OER Movement, Knox (2013) even explains that the usual arguments can contribute to a further 'efficiency orientation' and 'economization' of education. Könitz (2018) follows this argumentation and asks whether OER leads to 'self-inflicted digital immaturity'.[5]

These critics have not questioned central goals, such as opening up access to education more widely or ensuring the freedom of discussion spaces. Their critique does not question objectives such as the broader opening of access to education or securing the freedom of discussion spaces. It relates solely to the argumentation presented and the construction of a normatively charged openness movement, which may achieve precisely the opposite (see also Mishra 2017). Funes and Mackness (2018) therefore propose 'a research strategy that is more descriptive than normative may offer a richer language for open online education' (2018, 12).

Openness as a value?

While openness is mostly valued positively, the closure of knowledge seems to have a negative connotation. The question remains to what extent such a valuation is justified. The opening and closing of knowledge refer to modes of social interaction with knowledge, both of which must always occur in every society (see Kuhlen 2013). Therefore, authors prefer to see the authorship of their works secured and want to be able to determine their further use. Companies can be dependent on closing off knowledge from their activities, such as in research and development processes, to bring a product to market readiness and commercialize it. Patents, registered designs, and other variants offer the

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[3] Translated by the author.
[4] Translated by the author.
[5] Translated by the author.

opportunity to restrict access to or the use of knowledge and to limit its exploitation. An author's rights, the possibility of registering patents, and utility models are fundamental components of cultural conventions developed over centuries, all codified in the legal system.

At the same time, society will be interested in the fact that existing knowledge is openly accessible to make it available through the educational system, media, and other ways of participation and thus to secure this knowledge. It is a society's concern to make the state of knowledge available and to convey it to the next generation. Every act of social progress is based on the fact that available knowledge can be and is passed on; only in this way can the educated become proactive and generate new knowledge. Therefore, if certain knowledge were not openly available, society would not be able to generate new knowledge. At the same time, social institutions and organizations would not be able to generate protected knowledge (see features of knowledge ecology according to Kuhlen 2013), for example, by making an invention or developing a patent. Even the police or the secret service will only be capable of working for society's benefit if it is possible to conceal certain pieces of knowledge.

Possibilities for opening and closing knowledge are much more interdependent than antagonistic. Their interplay can be regarded as an elementary mechanism of social development that requires constant social negotiations. Media theories demonstrate how new paths of the production and distribution of knowledge in society are emerging with media technologies, shifting power constellations in society (Baecker 2007). With the printing of books, the church's monopoly on knowledge—which encompassed the power to close access to libraries and books and thus to knowledge—experienced a massive blow. With every new media technology, the question arises as to who has what capabilities to open up vs. close knowledge and in what way (see also Martin 2016). In the transition to every new (media) epoch, actors emerge who seize the new opportunities for knowledge for themselves. A new power constellation evolves in which the new approaches to knowledge production and distribution are redefined.

Nevertheless, the mechanisms of opening and closing in the digital epoch appear more subtle than in the world of books: the library building in the city is recognizable, and it is easy to determine whether one can enter the building or not. A systematology transparently describes the organization of the content of a library. On the other hand, the Internet promises a place where everything is available to everyone, anywhere in the world. However, knowledge is structured, for example, by a company using an algorithm so that the access to information is either open or closed.

In the transition to the digital era, business enterprises have quickly secured access to data and knowledge worldwide through new business models, thus creating entirely new power constellations. Further social debates will be needed to determine which mechanisms for opening and closing knowledge in a digital world will be sufficient (Kerres 2018). It is crucial to balance this power constellation in future discourses. Above all, questions arise as to who can use which data under which conditions and how and where taxes for creating economic value with this data should be imposed to finance general social tasks such as Bildung.

Can openness be considered a value like freedom, justice, equality, or solidarity? Strack et al. (2008) have structured personal value systems from a social psychological perspective based on factor-analytical investigations in a value system. They have differentiated these into traditional values, self-determination values, universalistic values, and egocentric values. Interestingly, openness does not appear in these analyses and could instead be assigned to so-called secondary values such as honesty, reliability, sincerity, and punctuality (see Rokeach 2008).

According to Carl Rogers (1961), in the person-centered approach, it is openness respectively congruence (in addition to empathy and unconditional appreciation) that counts as one of three basic attitudes for a positive relationship between people. This concerns the ability to express what one

feels with respect to the agreement of what is said with what is felt. This attitude helps one harmonize with one's feelings and is a prerequisite for empathy or the ability to recognize others' feelings. The opening would here be classified as a contribution to mental health. Apart from a counseling or therapy situation, however, it appears inappropriate to demand openness in principle. To live in harmony with other people in a society, it is also necessary to be able to practice non-openness to adhere to certain culturally established rules when articulating emotions (Ekman et al. 1987). Thus, it remains challenging to advocate openness as an ethical-normative value per se.

Conclusion

If one follows these considerations, the various initiatives of an opening are understood as specific solutions to different problems in a multidimensional structure. They appear to be 'loosely coupled' (see Orton and Weick 1990) rather than systematically interconnected: each initiative aims to solve a specific problem. The extent to which each initiative contributes to the solution of another initiative's problem must be examined more closely. Each initiative is accompanied by different constellations that support different corridors of an opening more or less fittingly.

In the context of educational policy and theory, this line of argumentation reveals that openness can hardly be justified as a value with a fundamentally positive connotation. An opening of Bildung is thus to be understood in relation to its closing implications. Opening imperatives in education can create illusions that obscure the view of social inequalities. Lenzen (2014) refers to the paradox that educational institutions' social function—in the medium of comparison—is based on the selective allocation of individual opportunities that fundamentally contradict a demand for openness and equal opportunities. The often political-emphatic charge of the discussion about openness can be countered in scientific discourse by understanding and further analyzing openness and mechanisms of opening in their relation to closedness and closure.

In the transition to the digital era, power shifts can be observed. The possibilities of actors to open and close access to knowledge and participate in education on the Internet are fundamentally renegotiated (Baecker 2017). If Bildung in lifelong learning is increasingly taking place in digitally mediatized spaces, the question becomes how Bildung figures in these contexts. In the transition phase to the digital era, how Bildung in the digital world is based on the monopolization of knowledge (platforms) and their marketing will be decided. Bildung can rely on knowledge participation in a culture of sharing (see Kerres 2018).

The question of the availability of freely available and openly licensed knowledge resources must be further discussed in the context of such shifts. Even though there have always been autodidactic forms of lifelong learning with media, learning media and libraries have in the past regularly been closely related to organized educational opportunities in schools and universities. With the ubiquitous availability of such resources and their seamless integration into the living and working environments, their relationship to organized education must be reconsidered.

It is essential to point out the difference between OER and Open Education. The availability of information or openly licensed knowledge resources on the Internet does not automatically contribute to more education and the reduction of educational inequities. The decision to prepare and make available a certain type of knowledge for teaching/learning purposes implies the decision to mark a certain type of knowledge as learning-relevant for a culture that excludes other types of knowledge in the first place. The preparation of this knowledge resource will always be in one language, thus excluding other languages; it will always use a culturally shaped means of presentation, thus excluding

other ways.[6] As long as we move within a given cultural context, such disparities are less striking. However, there are sufficient examples worldwide in which certain content in certain languages is not available as a media-based knowledge resource and thus has an exclusionary effect. In Africa, for example, not even the simplest textbooks for learning the basic skills of reading and mathematics exist for many of the languages of origin in those regions (Bunyi 1999). Indeed, the existence of such resources for teaching and learning will always privilege those who can acquire such knowledge and exclude others who do not. Beyond the technological prerequisites of Internet access, the most important factors are personal preconditions, such as prior training in the use of adequate resources and the time to engage with them, as well as the possibility of obtaining support from an educational institution that can monitor the learning and development process.

Self-directed, lifelong learning based on open Internet resources—without the framing of an education provider—will continue to gain importance, especially if AI-based support can foster the teaching-learning process. The idea that with the availability of knowledge resources on the Internet, all knowledge is now freely available to all people fails to recognize the importance of an educational system in the development of competencies in a society. Educational providers will be able to redefine their role and play a more prominent part in the design of appropriate digital services. However, they will adjust to the fact that these services will be organized less course-like on respective platforms. It remains to be seen whether lifelong learning on the Internet will cause the educational system to withdraw from the social function of selecting and allocating social opportunities and whether alternative mechanisms will be established within or outside of the educational system as a society can hardly cope without such mechanisms.[7]

It will be necessary to elaborate on the contribution of OER to Open Education with regard to broad participation in education, social development, and an open discourse. It is evident that the mere provision of materials with certain licenses can hardly fulfill such goals and that an argumentation based on this will be intricate for the actors to maintain. However, if such overriding social goals are pursued, the at best loosely coupled structure of the various opening initiatives will have to be further examined in educational science discussions.

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[6] As such, we can assume that teaching concepts and teaching styles are different from one culture to another (see, for example, Ramburuth and McCormick 2001).

[7] See, for example, the discussion on (open) 'badges' as a peer-to-peer mechanism through which competencies are documented on the Internet.

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