

**Education as an Open Question:
A Hermeneutical Approach to Problem-Based Learning**

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ABSTRACT

In this paper, this theme of the open question is offered as a hermeneutical approach to problem-based learning. Most of the scientific literature on problem-based learning is in the realm of the behavioral-sciences. To the extent that the latter becomes the exclusive focus of research on problem-based learning, there is a risk of instrumentalization. The hermeneutical approach of this paper is meant to complement this field of research. The subjects of humanities research are not directly available to a humanities scholar, at least not in the way experimental subjects are to a natural scientist. This is Wilhelm Dilthey's epoch-making understanding of the humanities in a nutshell. Philosophical anthropologist Helmuth Plessner, drawing on Dilthey, extends this insight to the historicity of human existence as such, summarizing the latter as an 'open question' that is always impressing itself upon us as human beings, but which at the same time cannot be answered definitively. It is through this process of asking and answering that we leave behind a history in the first place. I use these arguments to show that the theme of the open question yields a series of interconnected educational insights: notably the importance of subjectification, the social and historical context within which education necessarily takes place, and the construction of new knowledge and experience. These educational insights are rendered explicit and put into practice in problem-based learning. I hope in this way to develop a research perspective on problem-based learning as not only a set of behaviors, but as the scene of meaningful action.

Keywords: Problem-based learning, hermeneutics, Wilhelm Dilthey, Helmuth Plessner, open question

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INTRODUCTION

The historical roots of problem-based learning are in the field of medicine. It was first developed in 1969 by “five disgruntled doctors” at McMaster’s University, Canada who wanted to develop “a new approach to medical education” based not primarily on adherence to a distinctive philosophy of education or set of ideas, but the desire to offer their future students “a less boring experience” (Miklos-Servant 2018, 4). More than fifty years later, problem-based learning has been adopted by over 500 educational institutions worldwide (Schmidt et al. 2009). While there are many different versions of problem-based learning, the committee started by Bill Spaulding in 1966 with a view to establishing the new medical curriculum established three core principles that continue to distinguish problem-based learning from other approaches today. These are: (1) a self-directed, smallgroup, problem-based approach; (2) a systems-based approach to the curriculum; and (3) a community-oriented attitude to ensure a link to larger society (Servant 2016). The first two principles are accepted as a matter of course, but the status and specific meaning of the third principle, which emphasizes the community-oriented attitude of problem-based learning, is comparatively unclear, also in terms of what it requires. In earlier joint work I argued that the need to offer sustainable education in the present must require an orientation not only with respect to a given, local community, but must educate students for their futures in a world held in common. This implies an extension of the community-oriented attitude as one of the original principles behind problem-based learning (Noordegraaf-Eelens et al, 2019). Connecting community orientation in problem-based learning to sustainable education in this way also makes clear that the way in which problem-based learning relates to the relevant community, be it local or global, cannot take this community for granted or take its existing form as an absolute given. Using the vocabulary of educational philosophy, one might say that problem-based learning is not only about insertion into a given (social or professional) community, but also about how one positions itself in relation to this community as a whole, potentially also ‘outside’ of it (Biesta 2012, 13).

Community-orientation as a core principle of problem-based learning today thus raises several questions. First, how should the practice of problem-based learning relate to local communities and to the world at large? Second, and cautioning practitioners of problem-based learning about the danger of linking up with society all too readily, how can a certain distance be ensured, so that problem-based learning can not only ensure successful integration into the existing society, but also continue to reflect on it? In this paper, I offer a response in terms of what twentieth-century philosophical anthropologist Helmuth Plessner called the open question of human existence as such. The inquiry into who we are, individually and collectively, requires an answer. However, any such answer is necessarily non-definitive and leads to the re-opening of the question, and thus to further

open-ended answers. Plessner develops this understanding of human existence in connection with Wilhelm Dilthey's influential theoretical understanding of the humanities. I argue that the theme of the open question yields a series of interconnected educational insights: notably into the social and historical context within which education necessarily takes place, the construction of new knowledge and experience, and the importance of subjectification. These educational insights are rendered explicit and put into practice in problem-based learning, while Plessner's philosophical anthropology provides a way for problem-based learning to think through its own situatedness in a way that does justice to its principle of community-orientation. This is the outcome of a hermeneutical approach to problem-based learning, which is distinct from a behavioral-scientific approach in that it applies the method of the human sciences (or humanities) to provide an interpretation of its educational practices. The wider context within which this humanities approach is introduced is that both the behavioral-scientific and humanities approach have an important role to play in understanding problem-based learning.

Such an approach is all the more important because an exclusive focus on the behavioral sciences in the study of education risks an instrumentalization of education, since it focuses on the attainment of skills and educational outcomes independently defined. Part of the value of the hermeneutical approach supported by Plessner that I develop here is that it provides a coherent program of non-reduction (Kloeg 2020), avoiding both naturalist and culturalist monopolizations of education. In order to make this case, I first outline a tentative analysis of the challenge of instrumentalization that faces problem-based learning (section 1). In order to meet this challenge, I introduce Dilthey's understanding of the humanities and the hermeneutic approach of education, as well as Plessner's development of Dilthey in terms of the open question (section 2). I then develop the educational insights that follow from this perspective and indicate what it contributes to the practice of problem-based learning (section 3). Jointly, the sections aim to answer the following question: how should problem-based learning be interpreted from a hermeneutical view following Dilthey and Plessner, and how does this elucidate the theory and practice of problem-based learning?

1: INSTRUMENTALIZATION AS A CHALLENGE FOR PROBLEM-BASED LEARNING

The approach from science and philosophy to education, especially in practice, is one that has to be undertaken with considerable care. Instrumentalization lurks around every corner. This is not the place to offer a full categorization of instrumental approaches to education, but I will offer a tentative analysis below and consider how the approach from philosophical anthropology, as a transdisciplinary approach or *metabasis*, is able to avoid these pitfalls and what it can offer to a renewed understanding of problem-based learning.

The first way in which education can be instrumentalized is tied to a debate on how to interpret problem-based learning. In the information-processing model pioneered by Howard Barrows (Servant-Miklos 2018) education is put in the service of acquiring highly general skills that transcend differences between different disciplines: for instance, general clinical reasoning skills (Barrows & Tamblyn 1980). The supposed generality and independence of these skills is belied by both methodological (Ohlsson 2012) considerations and by the finding that problem-solving skills are in fact context-bound (Servant 2018). This also makes sense of the apparent importance of tutors' subject-matter expertise for the success of problem-based learning (Schmidt et al. 1993; Dolmans et al. 2002; for a complication, see Gilkison 2004). Attempting to inculcate such generalized skills thus risks isolating problem-based learning from the 'shared world' in which we exist as human beings (Noordegraaf-Eelens et al., 2019) and reduces education to a generic procedure designed to facilitate the development of equally generic and decontextualized skills.

A second way in which education can be instrumentalized is through the imposition of certain predetermined values which we then understand simply as needing to be inculcated in those who are to be educated. Paolo Freire refers to this as a form of sectarianism which potentially threatens both conservative and progressive forms of education (Freire 2000, 38). Hannah Arendt expresses a similar worry that "to prepare a new generation for a new world" determined in advance "can only mean that one wishes to strike from the newcomers' hands their own chance at the new" (Arendt 1969, 177; see Noordegraaf-Eelens & Kloeg 2020). This worry attaches itself in particular to forms of problem-based learning that attach problem-based learning to the development of substantial citizenship competencies (e.g. McInerney & Adshead 2013; Moraes et al. 2010) and in general where substantial values are held to be the goal of problem-based learning. This is where we can resist the imposition of pre-established ethical or political normativities and insist on a properly educational normativity, where the norm is generated by the practice of education itself (Biesta 2015b). This idea is bolstered by the hermeneutic approach from philosophy, to which I will return later.

Instrumentalization can also occur in reference to the tasks of education. According to Gert Biesta, the tasks of education are insertion into given social or professional communities, which he respectively calls socialization and qualification (Biesta 2012, 13). While both tasks are valuable, education cannot be limited to them without becoming a form of 'training'. In addition, education is but also about how one positions itself in relation to this community as a whole, potentially also 'outside' of it, which Biesta calls subjectification (Biesta 2012, 13). Training in this sense is clearly a form of instrumental use of education in the sense that the goals of the social and/or professional community are presupposed by and imposed on education, so that the only conceivable function of

education is to instill or express said goals. The goals can be understood in descriptive or in normative terms: in most cases, the goals relied upon explicitly or implicitly are best understood as descriptive/normative hybrids (see Van den Akker & Kloeg 2020, 68). This is true for ‘educational outcomes’ (Biesta 2017) such as employability, contribution to economic growth, and formal citizenship. Problem-based learning is under threat whenever it is assimilated to such outcomes.

Based on this analysis, instrumentalization of education occurs in the interrelated but analytically distinct guises of the inculcation of generic skills, the imposition of predetermined values, and the reduction of the tasks of education to insertion into given social or professional communities. From a more general perspective this casts education in the role of a means to an independently defined end. For problem-based learning and its place in the scientific study of education, this would mean that both the scope of research and the indication of success in practice are incentivized to focus on technical questions about the efficient attainment of learning outcomes. This is not only a natural phenomenon within the context of an educational culture of measurement (Biesta 2015a) but also means that problem-based learning potentially reinforces and strengthens said culture (Noordegraaf-Eelens et al., 2019). The reverse side of this phenomenon is that questions about the nature and tasks of education, as well as the potential reasons for education to critically relate to its independently defined ends as defined in other domains tend to go missing. The information-processing model of problem-based learning exemplifies these tendencies, with the paradigm of information-processing taken from computer sciences (Newell & Simon 1972; see Servant 2018). This model of education was an important part of the history of problem-based learning in McMasters University. Though it is no longer practiced there (Neville & Norman 2007), it remains an influential approach to problem-based learning globally (Schmidt et al. 2009). While the shortcomings of the information-processing model of problem-based learning do not directly affect the alternative Maastricht or Danish models, the pervasive influence of information-processing in the practice of problem-based learning is itself a reason for investigating how problem-based learning is situated with respect to the nature and tasks of education.

With regard to the scientific approach to problem-based learning, this discussion cannot be engaged exclusively from the perspective of the behavioral sciences, which focus on behavior and observable learning outcomes rather than meaningful action (Biesta 2015b, 665). The link between basic and applied cognitive and behavioral science and the practice of education has been assumed by much educational research, while at the same time this very link is increasingly coming under critical scrutiny (Perry et al. 2021). For these reasons I here favor involving the humanities, in the form of a hermeneutic approach to education in the nineteenth-century tradition of Wilhelm Dilthey and Friedrich

Schleiermacher. The more specific hermeneutic approach I argue for is derived from the philosophical-anthropological work of Helmuth Plessner. Plessner's philosophical anthropology avoids reductionism and instrumentalism (Kloeg 2020, Fischer 2014, De Mul 2014), while his use of Dilthey's theme of the open question offers a promising interpretation of the nature and function of the problem in problem-based learning. In the next section I expand on Dilthey's understanding of the humanities and Plessner's development of Dilthey in terms of the open question. I then develop the educational insights that follow from this philosophical-anthropological view of problem-based learning and begin to consider a number of practical implications.

2: FROM DILTHEY'S HUMAN SCIENCES TO PLESSNER'S OPEN QUESTION

The hermeneutic approach to education

The proposed hermeneutical approach to education (and, granting that, to problem-based learning) builds on an understanding of the human sciences vis-à-vis the natural sciences that was first introduced by Wilhelm Dilthey. Dilthey sought to expand the Kantian paradigm of transcendental philosophy with historical experience in his project *The Critique of Historical Reason*, recalling Kant's *Critique of Pure Reason*. Transcendental philosophy (not to be confused with 'transcendent') here refers to asking for the conditions of the possibility of experience rather than straightforwardly assuming a positive relationship between the human faculty of reason and the external world as it exists in itself. Kant finds these conditions for the possibility of experience in *a priori* (that is, given in but prior to experience) forms of apperception, categories of understanding and ideas of reason (Kant 1974). Dilthey's approves of this approach and seeks to further it. Kant thought that he had arrived at a system of conditions for the possibility of experience that would be logically consistent and universally valid. These were thought-structures that were true of human existence as such, without reference to specific times or places. This is thus also finally the sense in which we can interpret Kant's assertion, in the final years of his life, that the fundamental question underlying his critical-philosophical project was: what is mankind? (Kant 1992, 538). In the generations directly following Kant, a myriad of thinkers attempted to continue or transform his thought. An important step was taken by G.W.F. Hegel, who moved away from Kant's understanding of reason as a static ability of human beings and general and proposed that reason instead develop itself throughout history. The corollary of this view was that the course of history itself was a reasonable process.

Dilthey connects Kant and history in a different way: he notes the contrast between historical sense and the experience of multiplicity on the one hand, and the "appeal of philosophers to universal validity" on the other hand (Marquard 1973, 108). Dilthey's

approach is not to impose a direction or logic onto history, but to start from the approach that “only history shows what mankind is” [*Was der Mensch sei, sagt nur die Geschichte*] (ibid, 117; Dilthey 1914-2005, IV, 529). Thus, the logically consistent and universally valid *a priori* constructions deduced by Kant are themselves the product of historical influences. This is what Dilthey calls the “historical *a priori*” (De Mul 2014, 140). Seen from this perspective, Kant’s own philosophy appears as a valuable and decisive innovation, since it broached the realm of transcendental questions; but at the same time, it appears as a limited exercise since only a limited notion of experience is considered. The notion of experience in Kant is mechanistic (Schelling 2004; Benjamin 1961) and suited mostly to the natural sciences, which are amenable to the purely causal mode of explanation Dilthey calls *erklären*. In Dilthey’s view, not every domain of human life allowed for this kind of explanation. In order to understand human existence in full, interpretative understanding or what Dilthey calls *verstehen* is required. This is the original formulation of what distinguishes the natural sciences (*Naturwissenschaften*) from the human sciences (*Geisteswissenschaften*). We need to move beyond Kant and his ‘lifeless, bloodless’ categories of the understanding: accomplishing a synthesis of human existence as knowing, feeling and thinking would be Dilthey’s ultimately unfinished life work.

This notion of *verstehen* is what is involved with the hermeneutical approach to education, with hermeneutics being defined as the science of interpretation and reflections on the nature of interpretation and *verstehen* in Dilthey’s sense as interpretive understanding. Already in his own work, Dilthey responds to a tendency to approach education with the tools of the natural sciences. Dilthey argued instead for the importance of cultural and historical factors in describing educational phenomena, so that the *Wissenschaft* of education – the study or science, in the broadest sense, of education – had to be a *Geisteswissenschaft* making use of historical and hermeneutical methods (Biesta 2015b, 669). This meant that Dilthey’s understanding of a scientific mode of education was not premised on deriving through scientific or normative-philosophical means a predetermined goal for education to aim at or to further, as it were taking extra-educational givens as the ultimate end of education and thus adopting an outside-in approach to education itself. Rather, Dilthey’s approach aimed to “clarify (proto)theoretical insights and understandings that (...) are always already at play in educational processes and practices” (ibid, 670). Dilthey’s approach was rooted in the thought of the earlier hermeneutic thinker Schleiermacher, who likewise sees educational reality as primary with respect to educational theory and who argues that this practice contains “forces of social power” and “theoretical assumptions” but also a “dignity” that is not instilled by theory, but is already present in the practice of education (Wulf 2015, 20; Wulf 2003, 277; Schleiermacher 1983, 10-11). Thus, the practice of education itself is generative of its principles, so that we might call this an inside-out approach to

education. While Dilthey's is far from the only approach to hermeneutics (see De Mul 2004, 4), this emphasis on the dignity of education as a practice is suitable for the practical nature of problem-based learning and connects directly to Plessner's notion of the open question.

The open question and *metabasis*

The work of Helmuth Plessner, which is my main focus in this contribution, provides a further stage of this development. This could be traced along multiple paths, focusing for instance on discussions in the philosophy of nature or as a further step in transcendental philosophy, both of which are valid and indeed important approaches. An important unifying factor in these possible approaches is the non-reductive nature of Plessner's work. Notably, philosophical anthropology as such is not beholden to any scientific discipline or form of reduction. Plessner understands his work as an engagement of the human question which should be understood as a historical necessity after the onset of the human sciences, in particular the onset of biology, psychology, history, and sociology (Plessner 2019b, 32–35). These sciences offer a picture of reality, and specifically the reality of the human, as a “multiplicity” (ibid, 30) and it is important to take the different aspects of human existence disclosed by these various approaches into consideration. Equally important is the independence of the position philosophical anthropology itself takes on with respect to the sciences. The way philosophical anthropology references the human sciences should thus be understood in terms of a principled ambiguity: the human question is revealed in many new ways by the human sciences, but the latter do not exhaust the former (see also Dietze 2006, 61). As Plessner clarifies in his recently published lecture series on philosophical anthropology (Plessner 2019b; see Kloeg 2019) this means that the specific contribution of philosophical anthropology begins by engaging in “epistemological and methodological questioning” of the scientific mode of proceeding as well as the understanding of human existence that makes this mode of proceeding possible in the first place (Plessner 2019b, 35). We then find that the question into the specifically human aspect of human existence cannot be resolved in terms of the natural or human sciences themselves. In Plessner's example, the evolutionary biologist invokes a specific conception of the specifically human when reflecting on the emergence of the human species in evolution. For instance, when can we say that a specifically human use of language has emerged? (ibid, 37) In this sense the human sciences ‘point beyond themselves’, in a shift towards a dimension Plessner calls “*metabasis*” (ibid)¹, which I understand as both present within the human sciences in that a specific interpretation of this further dimension is always presupposed, but at the same time outside of the human sciences. It is on the level of the *metabasis* that we have to answer a set of questions that are raised in a specific way by the human sciences precisely because answers to them are built into their respective modes of proceeding.

I want to pick up the trail starting from Plessner's invocation of Dilthey in his important but frequently overlooked 1931 work *Political Anthropology* (Plessner 2018). This work builds on Plessner's *magnum opus* from 1928, *The Levels of the Organic and Mankind* (Plessner 2019a), which sought to map out ideal types for the different forms of life – plant, animal and human life – in order to provide a *metabasis* with respect to our understanding of life. These categories of life are for Plessner the “material *a priori*” (GS IV, 172; De Mul 2018) – his corollary to Dilthey's historical *a priori*, introduced above). Plessner arrives at his notion of excentric positionality as a description of human existence, which is a principled ambiguity that sees the human being both as the center of their lived experience (centric) and as outside of this center and at a reflective distance from it (ex-centric) (Plessner 2019a, 271). One of the implications of the excentric positionality of the human lifeform is that it “continues to push for ever new realizations, and in this way leaves behind a history” (ibid, 314). With this emphasis on the historicity of human beings, Plessner joins Dilthey in arguing that only history can teach what man is. Already for Dilthey, this was one of the reasons why ‘human nature’ remains inexhaustible [*unerschöpflich*] and “unfathomable [*unergründlich*], yet accessible to the poet, the prophet, the religious man, the historian” (Dilthey 1914-2005, XIX, 329, Dilthey 1989, 489).

In *Political Anthropology*, Plessner proceeds from Dilthey's methodological continuation of Kant's critical project with the inclusion of historical experience (GS V, 173, 175, see De Mul 2004). This then discloses a specific difference between human sciences or humanities [*Geisteswissenschaften*], such as history, and the natural-empirical sciences (Plessner 2018, 180). The human sciences cannot “freely have its objects at their own disposal”, and their lack of a specific location in time or space entail the “immeasurability” of their nature (ibid, 181). In other words, the objects of investigation within the human sciences are unfathomable [*unergründlich*] as a matter of principle, and the questions of the human sciences are open questions (ibid). To broach the unfathomable and to commit to it was Dilthey's successful “counterpart to Kant's accomplishment”, according to Plessner (ibid, 184). This very commitment to the unfathomable [*Verbindlichkeit des Unergründlichen*] is what continually constitutes the ever-incomplete intellectual world through the thinking and acting of human beings (ibid, 182). Because of this unfathomability, the anthropological ‘Quest for the human being’ is inevitably an open question, which can never arrive at a fixed answer, neither empirically nor *a priori*:

It must remain open, for the sake of the universality of its view onto human life in the full scope of all cultures and epochs of which the human is capable. This is why the unfathomability [*Unergründlichkeit*] of the human moves to the center of anthropology, and the possibility of being-human that contains what makes the

human a human in the first place, that human radical, must yield to the standard of unfathomability (GS V, 160-1/Plessner 2018, 26).

Plessner's is a fruitful perspective from which to understand what problem-based learning contributes to the practice of education. Because education is not purely about behavior but at least always also about meaningful human action, a behavioral science of education is possible and in some senses necessary, but when it is cast in the role of the only viable scientific understanding of education risks answering the 'human question' in too definitive a way, which as I offered in the first section takes for granted the nature and ultimate ends of education. In a way such a purely behavioral understanding of education repeats the positivist paradigm to which Dilthey was already responding: the application of methods from the natural sciences to the study of education. With the benefit of hindsight, we can now add that such methods have an important role to play in understanding education (Wulf 2015, 19). At the same time Dilthey's cautions against making it the sole key to understanding still hold true. The more normatively focused alternatives, which for instance see education as an instrument to inculcate a specific set of values, perform the same reduction of education but from a different domain (for instance, normative political philosophy). In this context I also note that Plessner's overall goal in *Macht und menschliche Natur* is to contribute to "civic education and political theory through the indirect, remote route of philosophy" (Plessner 2018, 6) and in general to show the worthiness of politics and properly political drives as part of an intervention in Weimar culture, providing an alternative to its main theoretical modes of idealism and cynicism (Fischer 2018, 108–109). Plessner's work in general has been understood as aiming towards an "education into reality" [*Erziehung zur Wirklichkeit*] (Dietze 2022; Dietze 2011).

With Plessner we find a means to describe the historicity of human existence as such, summarizing the latter as an 'open question' that is always impressing itself upon us as human beings, but which at the same time cannot be answered definitively. I propose to extend this theme of the open question to a hermeneutical understanding of problem-based learning: it is through a process of asking and answering, which introduces collective and situated life horizons of familiarity and strangeness within which we define ourselves, that we leave behind a history in the first place. This emphasizes the fact that education necessarily takes place within a social and historical context, that knowledge is constructed as a response to this context, and that this back-and-forth of the open question takes place at a level that results from reflecting both on questions of natural and human sciences, namely on the level that Plessner calls *metabasis*. In the final section of this paper I develop a number of educational insights as principles for problem-based learning in connection with the hermeneutical understanding that I have introduced thus far.

3: IMPLICATIONS FOR THE THEORY AND PRACTICE OF PROBLEM-BASED LEARNING

If asking and answering is part of human existence, we can only expect it to be a part of education as well. In that sense, the problem as it figures in problem-based learning appears to be a readymade complement. This should not be taken at face value however, as the specific interpretation of this linkage will have significant consequences for the way problem-based learning is implemented. In this section, I want to reflect on several insights that on my view follow from the hermeneutical approach to education and, more specifically, the philosophical-anthropological view on education as connected to Plessner's theme of the open question. I intend these insights as principles that can elucidate and serve to further inform the theory and practice of problem-based learning. In what follows I discuss six such principles: (1) the breakthrough of immanence and the onset of subjectification, next to qualification and socialization; (2) an informed response to problems which are to a certain extent 'wicked' in that they cannot be definitively solved; (3) constructing knowledge and experience that is in some sense new, reflecting the novel contribution of those involved; (4) a sustained reflection on situatedness and historicity, also in terms of the world we share and in which we are irrevocably situated; and (5) allowing the future to remain open, such that it is not predetermined by the past or foreclosed through our very practice of education. I elaborate on each of these briefly below.

The most immediate question that has to be posed in order to achieve these principles is: how should we understand the relationship between the problems of problem-based learning and the theme of the open question? The open question in Plessner has two features: first, the necessity of asking, which means that there is no obvious answer from the initial situation of the student and that some judgment is in order as to what is relevant, what constitutes relevant prior knowledge and what remains unknown and has to be studied further. This highlights the moment at which the students themselves are asked to participate in their own learning process, as is well-known in the literature on problem-based learning. However, at the same time students are asked to assume the position of subject, in the sense that they are themselves asked to position themselves with respect to the problem at hand and also in the sense that they have to reflect. Students decide which of the things they treat as knowledge in everyday life qualify as knowledge relevant to the problem; whether what they in fact desire is really desirable, that is, something that is worth desiring and that they should desire. This reflects what Biesta has called the breakthrough of immanence, which calls the subject into being (Biesta 2008). This is our first principle: subjectification belongs intrinsically to problem-based learning.

A second feature of Plessner's open question is the necessity of providing a response to the problem at hand, which yet remains open-ended, so that further questions can still be

asked and further analysis performed. An implication of this view is that problem-based learning is not or at least not primarily a means to problem-*solving* in the sense of providing definitive solutions to stated problems which then entail that the problems at hand lose their status as problems: they are no longer ‘problematic’ now that they have been solved. While this may be controversial for some practitioners of problem-based learning who have a technical approach to questions and for whom the desired learning outcomes of a problem are mostly factual or technical in nature, the element of judgment can never be absent from problem-based learning or from education more widely without it ceasing to be education. As soon as that is the case, education becomes more akin to training, which lacks Biesta’s element of subjectification entirely, or, worse, indoctrination (Biesta 2015b, 674), which can be understood as an extreme version of instrumentalized education. To provide some examples: charts of human anatomy, while requiring a lot of factual knowledge on the part of the students, connect to discussions about how bodies that deviate from the typically male and Western standard figure in medicine, or the so-called Reference Man. Models in neoclassical micro-economics, while requiring a lot of calculation on the part of students, connect to discussions about the history of economic science, the performativity of economic models (Callon 2010), and how such models are today contested in view of the in-built assumptions about, for instance, ecological stability (Keen 2021).

Taken together, these twin aspects of problems that require an answer on the one hand, with every answer provided needing to be open-ended on the other hand, support and clarify another idea that has often been advanced in the literature on problem-based learning, namely that problem-based learning is suitable to address so-called wicked problems (Thomassen & Stenhof 2020; Murgratroyd 2010): not in order to solve them, but in order to find a way to address them that does not reduce to finding determinate solutions to ‘issues’ that can be defined in a straightforward manner. As we have considered, Plessner’s notion of the *metabasis* involves all relevant disciplines in their interconnection in the production of knowledge. This reflects our second principle: problem-based learning should not aim to solve but to respond.

This in turn means that what happens in problem-based learning is not just the recirculation of readymade information. What is aimed at is the construction of new knowledge, or knowledge that is newly combined, that allows for a new perspective on the problem at hand or involves new perspectives, if only the particular experiences of the students involved, on how that problem is expressed. That gives us further means to express the theme of the open question in the practice of problem-based learning: what is at stake is the renewal of who we are, what we know and the world we inhabit. Hannah Arendt expressed this by saying that “the essence of education is natality” (Arendt 1961, 174): that is to say: education concerns what each one of those involved can contribute to

the situation at hand that is *novel*. This is our third principle: problem-based learning constructs new knowledge or experience. It comes with a twin requirement: to allow the contribution of the students (as ‘newcomers’, in Arendt’s parlance) to be expressed without preempting it, while also ensuring that what is new remains connected to the existing world. Delving more deeply into this is beyond the scope of this contribution, but Arendt’s work on education offers specific if also at points controversial suggestions on how to thread this line (Kloeg 2022).

One requirement that stems from the connection between education and world is that education indeed always takes place in a particular historical episode. If there is, following Plessner, no definitive answer to questions concerning human existence but that different answers follow each other over the course of time, then it matters a lot when and where problem-based learning is taking place. This can be called in a general vein the importance of situatedness. At the same time, this is not a backward-looking concern in which we strive to reconstruct from a supposedly neutral position the historical factors that lead to a specific situation. In another image by Arendt, we should guide students to become pearl-divers diving into the oceans of the past (Arendt 1970; Baluch, 2020; Korsgaard, 2019). The point of the pearl-diving metaphor is that remnants of the past have been ‘sea-changed’ into ‘pearls and corals’ that the pearl-diver brings to the surface (Arendt, 1970, 206). Students who are educated as pearl-divers can find the crystallised forms—‘those ideas and values that, though they have undergone change, have survived in a different form and can be used to interrupt, critique, and transform the present’ (Gordon, 1999, 170). The old thoughts, when brought to the surface, are not directly relevant ‘as old thoughts’ but now carry ‘the “deadly impact” of new thoughts (...)’ (Arendt, 1970, 201). Compared to Dilthey’s mostly reconstructive hermeneutics, this is a more constructive exercise that seeks to adapt existing knowledge and experience to new purposes (De Mul 2014, 4). This shows how our fourth principle, that problem-based learning should respond from within a certain historical context and incorporate that fact into its practice, is of one kind with the third principle of constructing new knowledge and experience. Both positively require each other.

In a further development of this thought, we can add that situatedness is also important in the sense of what Arendt calls worldliness: that is, rootedness in a situation which is the combination of a wide diversity of perspectives, the multiplicity of which finally makes up what we call the world: namely the world of shared meanings, institutions and concepts (Vlieghe & Swillens 2020). This resonates with the third core principle of problem-based learning as it was originally formulated – a community-oriented attitude to ensure a link to larger society (Servant 2016) – and seeks to not only affirm this principle but to extend its scope to the world as such (Noordegraaf-Eelens et al. 2019). This introduces a new set of questions to the theory and practice of problem-based

learning: for instance how it should relate to both local communities and the world at large (including the material earth), how educational success should be conceptualized, and also concerning, for instance, the importance of involving societal partners (Justo et al. 2013; Wieck et al. 2014). Asking and responding to such questions is part of the practice of problem-based learning.

The theme of the open question not only has implications for how we relate to the past, but also for how we relate to the future. If we allow old ideas to enter with the force of the new, we at the same time enable a future that is more than a simple continuation of the past. This is a relatively hopeful message that brings home not only that a lot is at stake for and in education today, but also that it is precisely within education that we can strive to renew the world (without, for that, seeking to predetermine or foreclose the future). This is our fifth and final principle: problem-based learning should be practiced with an eye to the future, which can never be determined in advance and should remain open.

As a hermeneutical approach to problem-based learning, the theme of the open question thus contains a number of important principles that can elucidate and serve to further inform the practice of problem-based learning: the essential role of subjectification, next to qualification and socialization; responding to ‘wicked’ problems rather than claiming to definitively solve them; constructing knowledge and experience that reflects the novel contribution of those involved; situatedness and historicity as essential components, also in terms of the world we share and in which we are irrevocably situated; and, finally, allowing the future to remain open, such that it is not predetermined by the past or foreclosed through educational practice itself. Education is in this sense an art of plural possibilities (Noordegraaf-Eelens & Kloeg 2020, 556). Philosophical anthropology, which informs Plessner’s open question, can only serve these ends if we allow for a “pluralization” of anthropological knowledge, since otherwise we would be imposing a specific and fixed ‘image of man’ on educational processes – this centrally includes an openness to cultural diversity (Bollnow 1965; Wulf 2015, 11-13). It also important to emphasize once more that while I take this hermeneutical approach to be important to providing an interpretive understanding (in Dilthey’s sense of *verstehen*) of education that is able to address the worry of instrumentalization, quantitative and behavioral research remains an important part of educational research; *verstehen* and *erklären* should speak to each other more and should be brought into contact with each other by those in the field of education (Wulf 2015, 19).

CONCLUSION

Problem-based learning is not quite in its young years anymore: as an innovative approach to education, it stands to reason that it should continue to develop in response to our ever-changing world and the challenges that come with it. This goes in particular for the founding principle of community-orientation, which is not clear in terms of what it requires of problem-based learning. The scientific literature mostly approaches problem-based learning from a behavioral-scientific approach, which comes with the specific risk of instrumentalizing education to attain generic skills, impose predetermined values, and to reduce the task of education to insertion into given social or professional communities. In response I have contributed to a hermeneutic approach to education, following Wilhelm Dilthey's example. In particular, I have used the theme of the open question from Helmuth Plessner's continuation of Dilthey, which in Plessner becomes a way to understand human existence as such, as a hermeneutical interpretation and clarification of problem-based learning. This approach brings into view several important principles that are relevant to the practice of problem-based learning. These include the importance of subjectification, the open-endedness of responses to (wicked) problems, the construction of new knowledge and experience, our relationship to local communities and the world at large, and the openness of the future. Plessner's approach also has the advantage of operating at the level of what he calls *metabasis*, which relates to both natural sciences and human sciences or humanities.

References

- Arendt, H. (1961). *Between past and future*. Penguin.
- Arendt, H. (1970) Walter Benjamin: 1892–1940. In: *Men in dark times*. New York: Harcourt, Brace & World, pp. 153–206.
- Baluch, F. (2020) Thinking with Arendt: education and temporality. In: Veck, W. & Gunter, H. (Eds.) *Hannah Arendt on educational thinking and practice in dark times: education for a world in crisis*. London & New York: Bloomsbury Academic, pp. 32–45.
- Benjamin, W. (1961). *Zur Kritik der Gewalt und andere Aufsätze*, Suhrkamp Verlag, 7-28.
- Biesta, G. (2008). Pedagogy with empty hands: Levinas, education, and the question of being human. In *Lévinas and education*. Routledge, 210-222.
- Biesta, G. (2015a). *Good education in an age of measurement: Ethics, politics, democracy*. Routledge.

- Biesta, G. (2015b). Teaching, teacher education, and the humanities: Reconsidering education as a Geisteswissenschaft. *Educational theory*, 65(6), 665-679. <https://doi.org/10.1111/edth.12141>
- Biesta, G. 2012. The future of teacher education: Evidence, competence or wisdom? *RoSE—Research on Steiner Education* 3(1): 8–21.
- Callon, M. (2010). Performativity, misfires and politics. *Journal of cultural economy*, 3(2), 163-169. <https://doi.org/10.1080/17530350.2010.494119>
- De Mul, J. (2004). *The Tragedy of Finitude. Dilthey's Hermeneutics of Life*. New Haven: Yale University Press
- De Mul, J. (2014). Artificial by Nature. *An Introduction to Plessner's Philosophical Anthropology*. In *Plessner's Philosophical Anthropology* (ed. J. de Mul), Amsterdam University Press, 11-37.
- De Mul, J. (2019). The Emergence of Practical Self-Understanding. *Human Studies*, 42(1), 65-82. <https://doi.org/10.1007/s10746-018-09483-2>
- Dietze, C. (2006). *Nachgeholtes Leben : Helmuth Plessner, 1892-1985*. Göttingen: Wallstein Verlag.
- Dietze, C. (2011). Erziehung zur Wirklichkeit. Der Beitrag Helmuth Plessners zur intellektuellen Gründung der Bundesrepublik. *Rückblickend in die Zukunft. Politische Öffentlichkeit und intellektuelle Positionen in Deutschland um 1950 und um 1930*, 312-334.
- Dietze, C. (2022). Education in reality.: Helmuth Plessner's contribution to the intellectual foundation of the Federal Republic of Germany. *Thaumàzein*, 9(2), 14-50.
- Dilthey, W. 1914-2005. *Gesammelte Schriften*. 23 Bdn. vols. Stuttgart/Göttingen: B.G.Teubner, Vandenhoeck & Ruprecht.
- Dolmans, D. H., Gijssels, W. H., Moust, J. H., Grave, W. S. D., Wolfhagen, I. H., & Vleuten, C. P. V. D. (2002). Trends in research on the tutor in problem-based learning: conclusions and implications for educational practice and research. *Medical teacher*, 24(2), 173-180. <https://doi.org/10.1080/01421590220125277>
- Fischer, J. (2014). Philosophical Anthropology: A Third Way between Darwinism and Foucaultianism. In *Plessner's Philosophical Anthropology* (ed. J. de Mul), Amsterdam University Press, 41-56.
- Fischer, J. (2018). "Epilogue: Political Anthropology: Plessner's Fascinating Voice from Weimar." In *Political Anthropology*, edited by Helmuth Plessner, 89-110. Evanston, Illinois: Northwestern University Press.
- Freire, P. (2000). Pedagogy of the oppressed: 30th anniversary. *New York: Continuum*.

- Gilkison, A. (2004). Problem-based learning tutor expertise: the need for different questions. *Medical Education*, 38(9), 925-926. <https://doi.org/10.1111/j.1365-2929.2004.01939.x>
- Gordon, M. (1999) Hannah Arendt on authority: conservatism in education reconsidered. *Educational theory*, 49(2), 161–180. <https://doi.org/10.1111/j.1741-5446.1999.00161.x>
- Justo, S., McCauley, S., & Stephens, J. C. (2013). Integrating shared action learning into higher education for sustainability. *Journal of Sustainability Education*, 5, 1–22.
- Kant, I. (1974). *Kritik der reinen Vernunft*. Suhrkamp Verlag.
- Kant, I. (1992). *Lectures on Logic* (ed. J. Young). Cambridge: Cambridge University Press.
- Keen, S. (2021). The appallingly bad neoclassical economics of climate change. *Globalizations*, 18(7), 1149-1177. <https://doi.org/10.1080/14747731.2020.1807856>
- Kloeg, J. (2022). Where is education? Arendt's educational philosophy in between private and public. *Journal of Philosophy of Education*. <https://doi.org/10.1111/1467-9752.12662>
- Kloeg, J. (2020). "Plessner's Principle of Openness." *Internationales Jahrbuch für philosophische Anthropologie* 10:33-46.
- Kloeg, J. (2019). Helmuth Plessner: Philosophische Anthropologie: Göttinger Vorlesung vom Sommersemester 1961. *Phenomenological Reviews*. <https://open.org/pub-229184>
- Korsgaard, M.T. (2019) Diving for pearls: thoughts on pedagogical practice and theory. *Journal of Philosophy of Education*, 53(1), 180–199. <https://doi.org/10.1111/1467-9752.12318>
- Marquard, O. (1973). *Schwierigkeiten mit der Geschichtsphilosophie: Aufsätze*. Suhrkamp Verlag.
- McInerney, C., & Adshead, M. (2013). Problem-Based Learning and Civic Engagement—Shifting the Focus of Learning in Public Policy Education. *PS: Political Science & Politics*, 46(3), 630-636. <https://doi.org/10.1017/S1049096513000620>
- Moraes, J. D., Castellar, S. M. V., Castellar, S. V., & Castellar, S. V. (2010). Scientific literacy, problem based learning and citizenship: a suggestion for geography studies teaching. *Problems of Education in the 21st Century*, 19, 119-127.
- Murgatroyd, S. (2010). 'Wicked problems' and the work of the school. *European Journal of Education*, 45(2), 259-279. <https://doi.org/10.1111/j.1465-3435.2010.01428.x>

- Neville, A. J., & Norman, G. R. (2007). PBL in the undergraduate MD program at McMaster University: Three iterations in three decades. *Academic Medicine*, 82, 370–374. <https://doi.org/10.1097/acm.0b013e318033385d>.
- Newell, A., & Simon, H. A. (1972). *Human problem solving*. Englewood Cliffs, NJ: Prentice-Hall.
- Noordegraaf-Eelens, L., & Kloeg, J. (2020). Insisting on action in education: Students are unique but not irreplaceable. *Studies in Philosophy and Education*, 39(5), 549-558. <https://doi.org/10.1007/s11217-020-09716-x>
- Noordegraaf-Eelens, L., Kloeg, J., & Noordzij, G. (2019). PBL and sustainable education: addressing the problem of isolation. *Advances in Health Sciences Education*, 24(5), 971-979. <https://doi.org/10.1007/s10459-019-09927-z>
- Perry, T., Lea, R., Jørgensen, C. R., Cordingley, P., Shapiro, K., Youdell, D., ... & Pomareda, C. (2021). *Cognitive science in the classroom*. London: Education Endowment Foundation (EEF).
- Plessner, H. 1980. *Gesammelte Schriften*. 1. Aufl. ed. Suhrkamp.
- Plessner, Helmuth. 2018. *Political anthropology, Northwestern University studies in phenomenology and existential philosophy*. Northwestern University Press.
- Plessner, Helmuth. 2019a. *Levels of Organic Life and the Human*. Translated by Millay Hyatt. Fordham University Press.
- Plessner, Helmuth. 2019b. *Philosophische Anthropologie*. Suhrkamp Verlag.
- Schelling, F. W. J. (2004). *First Outline of a System of the Philosophy of Nature*, trans. Keith R. Peterson, New York: State University of New York Press.
- Schleiermacher, F (1983). *Pädagogische schriften, Vol 1*. (ed. T. Schulze, T. & E. Weniger), M. Ullstein.
- Schmidt, H. G., Van der Molen, H. T., Te Winkel, W. W., & Wijnen, W. H. (2009). Constructivist, problem-based learning does work: A meta-analysis of curricular comparisons involving a single medical school. *Educational Psychologist*, 44, 227–249. <https://doi.org/10.1080/00461520903213592>
- Schmidt, H., Van der Arend, A., Moust, J., Kokx, I., & Boon, L. (1993). Influence of tutors' subject-matter expertise on student effort and achievement in problem-based learning. *Academic Medicine*, 68(10), 784-791. <https://doi.org/10.1097/00001888-199310000-00018>
- Servant, V. F. (2016). *Revolutions and re-iterations*. Doctoral dissertation. Retrieved from <http://hdl.handle.net/1765/94113>
- Servant-Miklos, V. F. (2018). Problem solving skills versus knowledge acquisition: The historical dispute that split problem-based learning into two camps. *Advances in*

Health Sciences Education, 24(3), 619-635. <https://doi.org/10.1007/s10459-018-9835-0>

- Swillens, V., & Vlieghe, J. (2020). Finding soil in an age of climate trouble: Designing a new compass for education with Arendt and Latour. *Journal of Philosophy of Education*, 54(4), 1019-1031. <https://doi.org/10.1111/1467-9752.12462>
- Thomassen, A. O., & Stenoft, D. (2020). Educating students for a complex future – why integrating a problem analysis in problem-based learning has something to offer. *The Interdisciplinary Journal of Problem-Based Learning*, 14(2). <https://doi.org/10.14434/ijpbl.v14i2.28804>
- Van den Akker, R., & Kloeg, J. (2020). The metamodern condition, populism, and the new universal. Or, as if an sich and as if für sich. *The missing denominator: universalism and progressive cultural politics*, 59-85.
- Wiek, A., Xiong, A., Brundiars, K., & Van Der Leeuw, S. (2014). Integrating problem- and project-based learning into sustainability programs: A case study on the School of Sustainability at Arizona State University. *International Journal of Sustainability in Higher Education*, 15(4), 431-444. <https://doi.org/10.1108/IJSHE-02-2013-0013>.
- Wulf, C. (2003). The dream of education. *Journal of curriculum studies*, 35(3), 263-280. <https://doi.org/10.1080/00220270305530>
- Wulf, C. (2015). Pädagogische Anthropologie. *Zeitschrift für Erziehungswissenschaft*, 18(1), 5-25. <https://doi.org/10.1007/s11618-015-0612-z>

¹ Plessner uses this term affirmatively in his lectures, which is notable as it derives from a phrase by Aristotle (*Metábasis eis állo génos*) which denotes an unjustified jump to another logical domain. Plessner himself had used the phrase in that meaning previously: see e.g. Plessner 2019a, 69.