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Revisiting the Fifth Element. Can Critical Realism Reconcile Competence and *Bildung* for a More Sustainable 21st-Century Education?

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Revisoning the Fifth Element. Can Critical Realism Reconcile Competence and *Bildung* for a More Sustainable 21st-Century Education?

This article addresses the concepts of competence and *Bildung* in contemporary education and how critical realism may contribute to reconciling these positions in a more sustainable theory of learning for the 21st century. Using the recent curriculum reform in Norway as a backdrop, the article discusses how unresolved disputes between competence and *Bildung* can provide fertile grounds for dichotomous theoretical positioning in research, short-sighted cherry-picking in policy and instrumental practice in schools. The author argues that it is possible, building on a critical realist ontology and learning environment, to resolve such disputes. Efforts to do so are needed to develop a better explanatory theory of learning and to mobilize research efforts to revision education as a protective force against unsustainable development.

Keywords: Critical realism, curriculum, learning theory, competence, *Bildung*

Subject classification codes:

Introduction

The current article is inspired by discussions during the 21st annual conference of the International Association for Critical Realism in 2018. Building on the conference topic of the crisis system¹ (Bhaskar 2016), concerning the four Es (ecological, ethical, economic and existential), the notion of a fifth E, education, was put forth by keynote speaker Heila Lotz-Sisitka. The proposition was made in reference to educational systems across the world increasingly becoming vessels for economic growth, exacerbating the global ecological and ethical crises and leaving behind those who lack access to education or have problems meeting the demands of formal schooling in the 21st century. The paper aims to add to these discussions by demonstrating how critical realism may contribute to reconciling some of the longstanding theoretical divisions that obstruct the path towards more sustainable educational policies and practices.

The article first provides an outline of the divisions between the educational concepts of competence and *Bildung* as a backdrop for discussing how an absence of a more coherent explanatory theory of learning impacts curriculum reform in Norway.

The article uses a theoretical framework in critical realism, focusing on the critical realist model of the laminar learning environment as a steppingstone towards a new and more ontologically coherent understanding of learning. The article discusses how the absence of a coherent explanatory theory of learning provides fertile grounds for dichotomous theoretical positioning in research, short-sighted cherry picking in policy and instrumentalist approaches in schools. Such absence drains energy from urgently needed efforts to build a more sustainable education system that can emancipate humanity from, rather than incarcerate it within, Bhaskar's notion of the global crisis

¹ IACR 2018 conference website: <http://konferanser.hil.no/iacr2018/about/>

system.

As an entry point for discussing the effects of the absence of an explanatory theory of learning in curriculum reform, I will provide some background on the concepts of competence and *Bildung*, both highly influential in framing the understanding of learning in the Norwegian context.

Understanding *Didaktik* and *Bildung*

Didaktik

Hopmann (2007) describes the German *Didaktik* tradition as characterized by a commitment to *Bildung*, the educative difference between matter and meaning, and the autonomy of teaching and learning (Hopmann 2007, 109). This tradition has a long history that spans from mediaeval mysticism and Romantic *Weltanschauung* to present-day curriculum and teaching research. As a movement, it has been highly influential across many European countries during the 20th century. The word *Didaktik* is difficult to translate into English, as it combines ‘elements of education, erudition, formation, experience, and whatever else is used in English to denote the process of unfolding individuality by learning’ (Hopmann 2007, 115).

From the perspective of *Didaktik*, the purpose of education is neither to transport knowledge from society to a learner through a certain curriculum nor to transport knowledge from scientific disciplines into the classroom. The purpose is, rather, the ‘use of knowledge as a transformative tool of unfolding the learner’s individuality and sociability, in short: the *Bildung* of the learners by teaching’ (Hopmann 2007, 115).

In *Didaktik*’s context of the school, matter (*Inhalt*) relates to the content of education, as in curricula or subjects of knowledge, while meaning (*Gehalt*) is the individually

attributed meaning—the learning of the student: ‘Any given matter can represent many different meanings, and any given meaning can be opened up by many different matters. But there is no matter without meaning, and no meaning without matter’ (Hopmann 2007, 116). Learning understood within the Didaktik tradition, then, is an emergent meaning that is generated when the content of education is enacted in the classroom. From this perspective, the individual attribution of meaning cannot be prescribed, objectified or measured. It also means that the question of educational content is given primacy over other educational hot topics such as classroom management, social-emotional learning and individual learning styles.

For this paper, I am principally concerned with the commitment of the Didaktik tradition to the concept of Bildung. Bildung can be understood as the goal and purpose of education; however, as Hopmann (2007) emphasizes, ‘Bildung is more than mastery of contents or development of competencies and abilities, more than “knowing something” or “being able to do it”’ (Hopmann 2007, 115). The distinctive ‘more’ of Bildung is the autonomous meaning making of the student. It is the individual’s ability to generate his or her own meaning from the encounter with the educational content that constitutes Bildung—not the mastery or prescribed knowledge or skills. As such, Bildung is a concept attuned to individual and cultural differences in the construction of knowledge. It offers a non-linear understanding that does not require specific combinations of matter and meaning as validations of learning, and it sees tests of individual competence as providing information on ‘important aspects of education[,] however[,] as being far from giving a complete picture of the impacts of teaching, let alone of Bildung’ (Hopmann 2007, 121).

Bildung

Hopmann (2007) describes Klafki's brand of Bildung as 'categorical', meaning that it provides students with categories in the form of exemplary concepts, languages and tools to 'open up the world and to open up themselves' (Hopmann 2007, 115). Klafki's ideas can be seen as a critique of two other strands of Bildung—the material and the formal. Material Bildung is typically understood as the acquisition of scientific knowledge and knowledge of classical works of art and literature in a prescribed cultural canon. Formal Bildung is understood as the development of desirable traits and abilities or a mastery of methods that help the individual to navigate through life. Klafki (2001) considers both directions theoretically deficient, as neither is 'able to decide on a theoretical framework to describe the nature of the phenomenon and process of Bildung' (Klafki 2001, 186). Bildung, according to Klafki, is always a whole and not a joining of the parts of Bildung, as a dialectic where conditions 'reveal their true nature [only] as part of a whole, and in concert with other conditions inside the whole' (Klafki 2001, 187). Bildung is then categorical in a dual sense, since the reality is of the world if opened to the human by understanding of these intransitive categories, and because the individual can apply these categorical insights to better understand herself.

The formal theories of Bildung, and in particular the functional emphasis on development of abilities, such as creativity, problem solving, communication and flexibility that permeate current understandings of competence, may, to Klafki, be worrisome indications that the qualifications that are disconnected from their historic and societal context and the content to which they are related. Such understanding, Klafki (2001) laments, makes the 'content of curricula relatively insignificant', and merely a 'means to describe qualifications' (Klafki 2001, 199). Although education students are provided with categories that enable Bildung, educational endeavours can

never fully prescribe or assess the Bildung of individual students, as such processes are entangled in multiple factors beyond the teacher's control.

Critique of Bildung

Scholars have criticized the concept of Bildung for being unclear and lacking in relevance for school and policy adaptation. Klette (2007) argues that the Didaktik tradition, with its emphasis on teaching, has contributed to a limited understanding of what goes on in schools and classrooms and how differences in teachers' activities affect students' learning. She also notes that 'while studies of teaching for a long period tended to depict learning and knowledge acquisition as a rather unproblematic and linear process of knowledge transmission, these assumptions have been contested during the last three decades, yet never properly disentangled' (Klette 2007, 147).

Adding to this, Priestley (2011) criticizes the Didactic tradition for what he sees as an insufficient understanding of educational change that has underpinned much of the research stemming from the perspective of Bildung. Recently Deng (2015) has called for new theories to bridge the continental ideas of Bildung with the concept of 21st-century competencies, recognizing that elements from both are highly relevant to academic debates on education and learning. Deng (2015) argues that it is necessary to build a new theory and vision of education centred on general competencies, while also including aspects of Bildung (Deng 2015, 782). For this to happen, the teaching of school subjects needs to shift from transmission of knowledge to the cultivation of desirable capabilities and dispositions. This requires a new theory of knowledge and content that is coherent within the context of the knowledge economy and globalization.

Illeris (2003) sees the ongoing debates on educational knowledge and learning as a result of global competition and the inadequacy of existing theories. He claims that

learning can no longer be understood as simply acquiring knowledge from the material referenced on a syllabus or in a curriculum. Instead, he defines ‘what-should-be-learned’—in both education and society—as a ‘complex totality of traditional up-to-date knowledge, orientation and overview, combined with professional and everyday life skills and a broad range of personal qualities such as flexibility, openness, independence, responsibility, creativity etc.’ (Illeris 2003, 397).

Such criticisms seem to juxtapose the tradition of Bildung with competence and learning. In the following, I will explore some historical and current concepts of competence and learning, starting with the idea of competency-based training.

Understanding competence and learning

Competency-based training

Hodge (2007) sees competency-based training not as a single clear-cut theory but as an ‘amalgam of separate theoretical components alloyed in the crucible of powerful political forces’ with ‘responsiveness to social and cultural pressures’ (Hodge 2007, 180). Hodge links competency-based training to the US-Soviet arms race of the cold war, with the Soviet launch of Sputnik sparking concerns in the United States about the quality of the American education system. Due to these concerns, reducing high drop-out rates, personalized teaching methods and greater accountability became the order of the day in schools (Hodge 2007, 184-5). The authorities found inspiration in the behavioural psychology of Pavlov and Skinner and in the systems theory of Bertalanffy and Crawford (Hodge 2007, 188). Despite theoretical shortcomings and a lack of empirical support, these theories provided policy makers with a new and seemingly scientific approach that suited the policy agenda. Support also came from curriculum research, notably Ralph Tyler who criticized contemporary curricula for

overemphasizing teachers' actions, arguing that 'curriculum design should be determined by explicit curriculum objectives expressed purely in terms of the changes the learning was supposed to produce in the behaviour of the students (Hodge 2007, 197) (see also Nordkvelle and Nyhus 2017). Humanistic theories, such as Bloom and Carrol's advocacy of the mastery learning, also played a part in developing minimum competency testing to counter the adverse effects of a grading system that seemed to reinforce differences between students. Systems theory thus helped to provide a flexible framing of competence, glued together by various components that fit the purpose of the system. The amalgam that Hodge refers to makes competence 'constitutionally responsive to a wide range of inputs' (Hodge 2007, 196).

The concept of competence is closely related to the idea of learning as an educational outcome. In the following, I will explore a contemporary understanding and a general model of learning as a basis for discussing competency and Bildung in the latter parts of the article.

Learning in curriculum reform

The Organisation for Economic Co-operation and Development (OECD) emphasizes the need to address the new and demanding kinds of learning summarized as 21st-century competences to attain the desired outcomes of education sought by many countries (OECD 2010, 23). In its 2010 report "The Nature of Learning", the organization's views on learning are outlined in some detail. The report states that the transmission model of learning, as advocated in behaviourist and cognitivist traditions, has been abandoned in favour of a more a constructivist view on learning. Building on the work of scholars such as Piaget and Bruner, learners are seen as sense makers actively constructing their own knowledge and skills, and following Vygotsky, learning

is situated as the ‘product of the activity, context and culture in which it is developed and used’ (OECD 2010, 40). The OECD describes learning aimed at promoting 21st-century adaptive competence as ‘CSSC learning: “constructive” as learners actively construct their knowledge and skills; “self-regulated” with people actively using strategies to learn; “situated” and best understood in context rather than abstracted from environment and “collaborative” not a solo activity’ (OECD 2010, 35). Despite the references to existing theories on learning, the OECD makes no attempt to unite these references in a coherent theoretical framework. Such efforts have, however, been undertaken by Illeris who, from a wide selection of available theories, has devised a general model of learning that I will explore in the following.

A general model of learning

Illeris (2018) describes a great variety of theoretical and epistemological approaches which are ‘more-or-less compatible’ and ‘more-or-less competitive’ in the global field of learning (Illeris 2018, 1). In his general model of learning, which he claims provides an overall understanding and a general and up-to date overview of the field (Illeris 2003, 2018), Illeris (2003) argues that ‘the modern concept of competence comprises not only relevant knowledge and skills, but also a range of personal qualities and the ability to perform adequately and flexibly in well-known and unknown situations’ (Illeris 2003, 396). He contends that the concept of learning should be understood in the same broad sense, to allow its application in both analysing and planning learning processes in education.

Illeris (2018) broadly defines learning as ‘any process that in living organisms leads to permanent capacity change and which is solely due to biological maturation or aging’ (Illeris 2018, 1). His general theory of learning is basically a constructivist meaning that

assumes the learner actively builds her learning as mental structures through a process of psychological functions interacting with the environment within society. This is done at four levels, according to Illeris (drawing in Piaget), by adding something new (cumulative), by adding to existing structures (assimilative), by adapting existing structures to new contexts (accommodative) or by completely remaking existing schemes, as in times of crisis (transformative).

For Illeris, learning implies the integration of both: a) an external interaction process (social constructivist) between the learner and her social, cultural and material environment; and b) an internal psychological (cognitive/behaviourist) process of acquisition and elaboration. It is an interplay between both: the fundamental psychological function of cognition, dealing with the learning content; and the function of emotion, dealing with mental balance and energy. Both cognitive and emotional functions and their interplay are dependent on the interaction of the learner with the environment (Illeris 2003, 401), while society provides the conditions for learning to take place. Therefore, ‘the endeavour of the learner is to construct meaning and ability to deal with the challenges of practical life and thereby develop an overall personal functionality’ (Illeris 2003, 399).

Critique of competence and learning

Biesta disapproves of the constructivist approach to learning that has gravitated away from the activities of the teacher, what he calls a shift from teaching to learning. He argues that ‘the point of education is never that children or students learn, but that they “learn something”, that they learn this for a “particular purpose”, and that they learn this “from someone”’ (Biesta 2013, 36). According to Biesta (2013, 37), the process of transmitting content knowledge from the teacher to the student is neglected in a concept

of learning that seeks to measure and control learning outcomes. This he sees as an uneducational extreme, built on the assumption ‘that the world—social and natural—simply is at our disposal and thus should obey to our whims rather than we acknowledge that it exists independently from us’ (Biesta 2013, 36). In a similar line of argument, Willbergh (2015) claims that contemporary ideas of competence ‘obscure and hide the content aspect of education from public debate’ (Willbergh 2015, 348). Instead, she proposes a new concept of Bildung to include the development of higher-order critical thinking, creativity and innovation and to reinvent content in a more consistent theoretical framing of education in the 21st century.

The debates on competency and learning that I have outlined above are seen by many (Biesta 2004; Priestley 2011; Nordkvelle and Nyhus 2017) as part of a neo-liberal agenda that increasingly employs education as a competitive tool in the global economy. The effects of such an agenda can be seen in research (Mølsted and Karseth 2016; Pettersson, Prøitz, and Forsberg 2017) demonstrating how the educational concepts of competence and learning have become commonplace in curricula across many European countries.

Points of contention in competence and Bildung

The tradition of Bildung emphasizes the autonomous meaning making of students based on content knowledge. What is learned in schools, from the perspective of categorical Bildung are categorical insights that can be applied to understand the world, and oneself in meaningful ways. These insights are transferable to other situations and serve as form of meta-knowledge that helps to student to acquire new knowledge in fields and situations that are not covered school curriculum. I will for the purpose of this article summarize the points of contention between competence and Bildung in three points.

First, the position of the teacher in The Bildung-tradition is envisioned more as a master passing on her wealth of knowledge to students, and more as facilitator of learning in the competence tradition with teacher possessing a wealth of teaching methods to help students find insights. Second, the task of the curriculum is seen in the Bildung-tradition as emphasizing the content of school subjects, whereas it is seen as highlighting the outcome of students leaning in the competence tradition. Third, the student role is seen as acquiring meaning and categorical insight in Building, while it is seen as acquiring skills and adaptability to deal new situations in the competence tradition.

These points are not contradictions in the absolute sense that they are incompatible, but contradictory in the sense that they emphasize different aspects and espouse different normative directions for curricula and practice in schools. The concepts of Building and competence resemble one another as they both recognize content knowledge and practical skills as important aspects of education, and the aim of education to prepare students for life outside the classroom. Both traditions also employ the term learning to describe the process of students' and teachers' engagement with curricula in schools, but with different emphasis and understanding, and rarely with an explicit theory of learning to support such practice.

Building on this background, I will now explore how the understanding of competence and Bildung is negotiated in a practical educational setting using the recent curriculum reform in Norway as a case in point.

Competence and Bildung in Norwegian curriculum reform

Norwegian curriculum reform is an interesting illustration of how tensions between the traditions of competence and Bildung are negotiated in contemporary curricula.

Research has found that the Norwegian curriculum is historically engrained by the

German traditions of Didaktik and Bildung (Karseth and Sivesind 2010), while also being significantly influenced by the Anglo-American tradition of competency and learning. Mølstad et al. (2016) have investigated the role of learning outcomes in curriculum in Norway and Finland. They find significant differences in how such outcomes are incorporated, with the Norwegian curriculum positioned further from the content-oriented tradition than the Finnish curriculum. The Norwegian national curriculum defines the outcome of learning as competence. Learning goals are described at the local level based on the competency aims of the central curriculum (Mølstad and Karseth 2016).

In the recently revised core curriculum of Norway, the definition of competence is given: ‘Competence is acquiring and applying knowledge and skills to manage challenges and solve problems in familiar and unfamiliar settings and situations. Competence entails understanding, reflection and critical thinking’ (St.meld nr. 28 (2015-2016)). In the white paper preceding the reform, the government reaffirms its commitment to the OECD framework of key competencies (OECD 2005) in the national curriculum, stating that ‘the tasks and situations that students meet in school and later in life are often complex and demand that students not only acquire knowledge and skills, but also to use them in concrete tasks and situations’ (St.meld nr. 28 (2015-2016), 27). This curricular alignment is indicative of a global discourse on learning spearheaded by the OECD emphasizing 21st-century skills and the ability to adapt and apply knowledge and skills in a variety of contexts and situations (OECD 2010). According to the OECD, research on learning is plagued by a ‘great disconnect’ of theory from practice, rendering many theories limited in practical value to teachers and difficult to implement in a practical school setting. Although the report points to numerous advances in the learning sciences, it nonetheless calls for continued

theoretical and empirical research ‘to elaborate a more thorough explanatory theory of the learning processes that facilitate and enhance the acquisition of adaptive competence’ (OECD 2010, 56).

Hilt, Riese, and Søreide (2019) argue that the curriculum reform in Norway indicates a shift towards a more economically driven system of education where ‘skills are now promoted to ensure the production of human capital for economic prosperity’ (393). Such a shift, they argue, may preclude the expression of certain types of identities and end up excluding students who do not conform to the narrow ideals of the education system. Willbergh (2016) further argues that the limited knowledge base underlying the Norwegian curriculum reform (NOU 2015:8 2015) risks subordinating the role of content knowledge by failing to formally address the contents of the curriculum through public debate. Willbergh thus fears the Norwegian curriculum is becoming a formal functional model of Bildung, emphasizing practical skills and competencies over students’ acquisition of content knowledge.

In the new General Core Curriculum (Ministry of Education and Research 2017), schools are obligated to provide students with both competence and Bildung by helping them to acquire knowledge, practical experience, and to work in cooperation with others. The curriculum emphasizes the goal of supporting students to develop all aspects of their personality and abilities. Despite these descriptions, it is not clear what concept of Bildung the new curriculum subscribes to. The task of decoding what Bildung actually means is given to teachers, as they ‘must carefully consider what, how and why students learn, and how they best can lead and support the learning, development and Bildung of students’ (Ministry of Education and Research 2017, 18).

As the above text illustrates, there are a number of contradictions underlying the

discussions on competence and Bildung in the Norwegian curriculum reform. These contradictions include a lack of theoretical grounding for the amalgam concept of competence, while formally obligating teachers to view competence as learning, and by failing to provide a clear definition that allows teachers to determine how they will support students' Bildung. Each tradition serves as a critique of the other, with the competency-based argument highlighting the lack of policy relevance in the Bildung tradition, and the Bildung tradition criticizing competence for its reduction of the complex phenomena of students learning to meet measurable outcomes. As these contradictions remain unresolved, I will explore how critical realism may contribute to reconciling competence and Bildung. I start by visiting some recent examples of critical realist research on curriculum, learning and the learning environment.

Critical realist contributions to education and learning

Reinvigorating curriculum theory

Priestley (2011) argues that many contemporary curricula are theory agnostic and riddled with contradictions. Proponents of such curricula, he claims, seek to combine the best features of top-down and bottom-up approaches, to provide both strong central guidance and local flexibility (Priestley 2011, 222). Such efforts create new contradictions as 'the new curriculum models fail to differentiate between theoretical and everyday knowledge, depriving students of a basis to develop and critique disciplinary knowledge' (Priestley 2011, 223). This may lead to an instrumental approach to learning—with curricula 'concerned with setting out not what children are expected to know, but how they should be' (Priestley 2011, 223). The problem, as Priestley (2011) sees it, is that the current curricular emphasis on learning fails to address the core questions of what learning is, thereby degrading debates on educational

policy to a set of ‘common-sense orthodoxies’ (225). In his view, a reinvigoration of curriculum theory is sorely needed to counter such degradation. Critical realism, he argues, offers one way to revisit problems that may be only partially understood by ‘tracking the ebbs and flows of morphogenic cycles over time’ and allowing us to ‘infer the existence and nature of the mechanisms that underpin such events and entities’ (Priestley 2011, 234).

Dispelling reductionist views on learning

Tikly (2015) is critical of the ‘what works agenda’, ‘in which the task of research is to empirically test the effectiveness of interventions aimed at raising learning outcomes’ (239). Tikly also criticises the interpretivist views on learning, including social constructivism, that emphasis the situated and social nature of learning, thereby negating reality outside interpretation and favouring the individual and group representation of reality over reality itself. Both the empiricist and interpretivist concepts of learning are dispelled as reductionist and ontologically deficient for explaining learning in an open school system. Tikly (2015) argues that ‘critical realism has the potential to build on the strengths, while avoiding the pitfalls of both empiricism and interpretivism’ (237), recognizing learning as an empirical outcome and causal tendencies at one level of reality, while also maintaining that, at other levels, there are always powers at work than those we can empirically observe. Using critical realism Tikly (2015) explains: the ‘aim of research into learning ought to be to understand what causes (or indeed prevents) learning from occurring, causality can never be determined in that the range of causes at play inevitably vary in relation to the context and to the individual learner’ (239). The starting point for critical realists is, then, the underlying structures and mechanisms that give rise to observed empirical reality and to present ‘a middle way’ between empiricism and interpretivism (Tikly 2015, 242).

Overcoming dualisms

In a recent contribution, Nunez (2013a, 2013b, 2015) demonstrates the power of critical realism by proposing to overcome the unresolved dualisms in activity theory. In her work, Nunez explains how the nature of learning constitutes itself as a stratum emerging from the need to rectify mental inconsistencies left by what we have yet to explain in our understanding of human reality. She develops her critique, in the field of mathematics education, by criticizing the constructivist theories of Piaget for failing to consider the independent prior existence and causal efficacy of objects in the dimension of ontology, and she criticizes the social constructivist theories of Vygotsky for focusing too narrowly on interactions between individuals rather than between social phenomena and for giving primacy to language over practice. In Nunez, we find an example of how the tenets of critical realism can be employed to expand existing theories, foregrounding ontological assumptions and theoretical inconsistencies to underlabour for a more consistent theoretical framework of learning. As such, Nunez' work is indicative of the critical realist (see also Bhaskar 2008, 2016; Danermark 2011) vocation of building a middle way based on an ontology that is 'less concerned with defining and measuring the relationship between the observable parts of the system as in representing the dynamic, dialectical nature of the relationship between the underlying structures and mechanisms that give rise to learning over time' (Tikly 2015, 245). To further advance research, policy and practice, Tikly (2015) argues, 'it is important to be clear about our starting ontological assumptions, i.e. about what learning is and the structures and mechanisms that facilitate or inhibit learning in different contexts' (248).

The laminar model of the learning environment

Zembylas (2017) describes the ontological turn in education as a move away from cognitive, psychologized, phenomenological and interpretive approaches from discourse

and interaction, to the objects of education themselves. The ontological turn offers a reconceptualization of learning as a ‘de-centred practice of human and nonhuman entanglements, as events that make visible singularities, which are not captured by the mere language of learning outcomes’ (Zembylas 2017, 1411). As an example, Zembylas points to Brown (2009), who sees the learning environment as ‘a complex ensemble of causal mechanisms that enable and constrain learning’ (31). Learning environments, according to Brown, are layered open systems that respond to both internal and external factors, changing morphogenically over time. They are laminar systems, where learning is an emergent property with multiple and tiered determinants. Any experienced teacher, Brown (2009) argues, will easily recognize how ‘learning is enabled and constrained by the lighting, heat, time of the day, time in the week and spatial layout (mechanisms operation at the physical level), by whether the children are hungry or sated, tired or alert, well or unwell (mechanisms operation at the biological level), and by the learners’ motivation, aptitude and confidence (at the psychological level)’ (24).

Adding to the physical, biological and psychological levels, Brown argues that there are also mechanisms operating at the sociocultural level—such as group dynamics in the classroom, and at the curricular level where meaning (intended and unintended) from curricular content has causal effects on learning (see Figure 1).

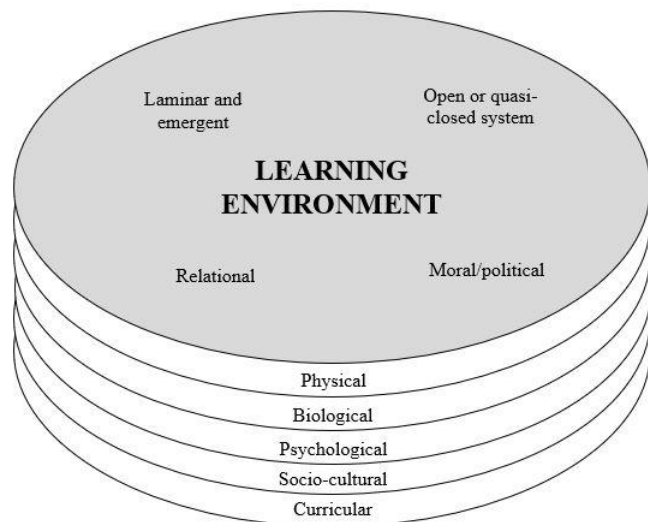


Figure 1: Critical realist model of learning environment

(adapted from Brown 2009)

Brown (2009) emphasises that ‘The mechanisms operating at these levels interactively determine learning, but learning,

which is emergent from them, cannot be reduced to any particular element or level’

(25). It must, rather, be seen as an emergent property of the interacting mechanism (both enabling and constraining) at all levels. These mechanisms are facilitated by social relations and language that enable teachers and students to interact meaningfully in the classroom. The learning environment is, then, viewed as an open system, susceptible to influences that penetrate the porous walls of the classroom.

In summary, the works of Priestley, Tikly and Zembylas all have a commitment to ontology and a stratified view of the world. They share an interest in the structures and causal mechanisms that underline their phenomena of their research and shy away from reductionist explanations of simple input-output logic. These interests and commitments can all be seen as general traits of applied critical realism (Price and Martin 2018) that have been adopted in a range of academic fields over the past decades. Of particular interest for this article is the criticism of reductionist theories of learning—as illustrated by Tikly’s rejection of both objectivist and interpretivist approaches and in Nunez’ efforts to overcome dualisms in activity theory. These examples illustrate how critical realism can be usefully applied as an underlabourer for a more ontologically coherent understanding of learning. In the following, I will build on Brown’s model of the

laminar learning environment to discuss how the concepts of competence and Bildung can be theoretically reconciled in a critical realist ontology.

How can critical realism add to the debates on competence and Bildung?

The problems of competence and Bildung

The concepts of competence and Bildung both present unresolved issues in the field of education and learning. Hodge (2007) argues that competency-based training lacks theoretical grounding, leaving it open to flexible interpretation and application. This fits well with the 'what works agenda' criticized by Biesta (2013), Nordkvelle (2017) and Priestley (2011) as it makes competence oriented curriculum an instrument of policy in a competitive global economy. Adding to this, Willbergh (2015) criticizes the concept of competence for being educationally inept and unpractical in teaching.

Brown (2009) argues that it is 'demonstrably not the case that following even a straightforward teaching procedure leads to intended learning outcomes' (11).

Knowledge, he argues, by its very nature is fluid and indeterminate since students construct meaning in a variety of ways, and knowledge therefore cannot be categorized as objective. Brown is also critical of the constructivist position for recognizing any and all constructs of knowledge as being of equal value, making it difficult to deal with the public character of knowledge. Such judgemental relativism is rejected in critical realism, and by Brown, who argues that the constructivist accounts do not provide the criteria needed to meet the planned outcomes of curriculum.

Similarly, the tradition of Bildung does not support a view of learning as meeting planned outcomes. By insisting that Bildung is always a whole and rejecting the possibility of any form of 'part-Bildung' as an empirical reality, this position also

reduces its view on learning to what it can theoretically support in a flat ontology.

Neither the position of competence nor the position of Bildung seems to recognize the intransitive nature of learning, with a reality outside of what is objectively observable or subjectively and socially constructed (Brown 2009, 15). Both positions also fail to recognize schools as open systems influenced by internal and external forces that make it inherently difficult to control how knowledge is constructed and acquired. The critical realist assertion of the stratified and intransitive world, revealing itself in the empirical, while staying hidden in the actual and the real, rejects such reductionist tendencies by understanding learning as emergent from generative mechanisms at multiple layers.

I take issue with the proposition of Deng and Willbergh that the contradictions between competence and Bildung can be resolved by merely developing new theories of knowledge, without also dealing with issues at the ontological level. Rather, I contend, these traditions need an ontological platform in critical realism before any coherent theory can be devised to bridge these concepts. In the following, I will explore how Brown's laminar model of the learning environment can provide a steppingstone towards reconciling the problems of competence and Bildung that we have discussed so far.

Laminar reconciliation

Brown's model provides an understanding of the learning environment as an open social structure that defines and limits options for teachers and students, while at the same time enabling them to act to reproduce or transform the structure over time. There are a number of advantages to this model. First, by welcoming epistemic plurality, the critical realist ontology recognizes both objectivist and constructivist accounts of learning, as well as those espoused in competence and Bildung, while at the same time

providing a deep ontology to counter the reductionist tendencies of these perspectives. Second, learning is seen as an emergent property of the learning environment, creating conditions for transitive competence and Bildung at the empirical level, while acknowledging both competence and Bildung as more than ‘knowing something’ or ‘being able to do it’ (Hopmann 2007, 115) in the intransitive dimension. Third, Brown’s framework addresses the role of content and the purpose of education and adds the moral political level of curriculum as a generative mechanism in the learning environment. This allows a recognition of curricular content and teaching as causal mechanisms and means that Bildung can be seen as intransitive learning in the ongoing struggle to create meaning from opening up the world and being opened to it. Fourth, Brown argues that the learning environment is a moral political entity, as education in both practice and policy involve decisions about how and why things should be done in schools. These decisions influence how mechanisms are activated, and by consequence, how learning emerges through the environment. Questions of values and purpose are brought to the fore, providing an emancipatory impulse to educate students to flourish and become self-determinant. From his perspective, students should ‘possess the knowledge to act in their own real interests (cognitive outcome), have the skill and capability to access the resources and opportunities to do so (skills outcome) and are disposed to so act (affective outcome)’ in accordance with those interests (Brown 2009, 28). This notion is, in many respects, similar to those expressed in Klafki’s concept of categorical Bildung.

Although providing a more ontologically coherent framework in his model of the laminar learning environment, there are problems with Brown’s argument. First, it would seem Brown (2009) haphazardly conflates learning with knowledge when he writes, ‘it is the ontology that enables and constrains the acquisition of knowledge, that

is, learning' (14). Here Brown can be interpreted as reducing the critical realist concept of learning to the individual acquisition of knowledge. Further, Brown (2009) 'foregrounds the learning environment, arising from the critical realist premise that the possibilities for knowledge are given in the ontology' (5). This emphasis overshadows any real engagement with the question of what learning is and the way students actually learn anything. One could also argue that the position that students at all levels possess the necessary knowledge to act in accordance with their own interests underestimates the power leveraged over students by institutionalized schooling and educational policies.

Taken together, it would seem that Brown is unclear about how learning in schools can be understood and how it relates to the environmental conditions that he describes in his model. To answer Tikly's call to determine 'what learning is', there is a need to develop a more coherent explanatory theory of learning. Given the tensions I have described above, such a theory should also contribute to reconciling the tensions between competence and Bildung for a more sustainable view on learning in the 21st century.

Expanding new theory

Nunez aptly demonstrates how critical realism can be used to develop existing theories, such as the sociocultural theory of learning by Vygotsky and the later developments of activity theory by Engeström and others. There are two major problems with this approach. First, as Priestley states, most modern curricula are theory agnostic, meaning that educational policy rarely subscribes to any particular theory of learning. This makes it difficult to develop a transformative critique that has relevance for educational policy and practice. Second, as Illeris states, there is a great variety of more-or-less compatible theories competing for attention in the global educational marketplace. To follow

Nunez' example, in order to critique an individual theory of learning requires that one would have to argue for the relevance of that critique in the face of the myriad of other theories available in the marketplace. Trying to critique any and all existing theories of learning from a critical realist perspective would be a daunting task and certainly beyond the scope of this paper. Also, since the discussions on learning in curriculum draw on an amalgam of concepts from different theoretical perspectives, such efforts seem impractical and time consuming if one is trying to make an impact on educational realities. Instead, I will try to expand on the critical realist model of the learning environment by adding insights from Illeris' general model of learning to open up a path towards reconciling competence and Bildung. Finally, I will investigate how the absence of an explanatory theory impacts contemporary curriculum development.

Illeris' model of learning coincides with Brown's model of the learning environment in a number of ways. First, it recognizes the interaction of factors at the psychological (cognition/emotion), curricular (learning content) and sociocultural (environment) levels. Second, it grounds the possibilities for learning in society (social ontology), recognizing the interaction of internal and external forces and the possibility of learning as objective empirical outcomes in the classroom. It also recognizes the intransitive dimension of learning as existing when a time of crisis compels the learner to reconfigure everything she thought she knew about herself and the world.

Another interesting point is Illeris' (2003) attentiveness to absence: 'very often people do not learn what they could learn or what they are supposed to learn' (403). Such non-learning can be seen in light of the conditions created by modern society. To cope with complexity of the human existence and information overload, modern learners employ defence mechanisms to deal with elements that do not correspond to pre-existing understanding by either rejecting or distorting such influences. Such elements can be

seen as examples of psychological counteracting mechanisms that are generative of learning, in the sense that ‘learning very often becomes a question of what can penetrate the individual, semi-automatic defence mechanisms and under what conditions’ (Illeris 2003, 404).

Illeris’ model presents a number of valuable additions to Brown’s model. Notably, it explains generative mechanisms and absence at multiple levels and recognizes learning as transformative and intransitive. There are, of course, also problems. From a critical realist perspective, it would seem that Illeris’ understanding of generative mechanisms at the physical and biological levels are underdeveloped. His emphasis on managing the challenges of practical life and personal functionality, does not take into account the moral political dimension of Brown’s learning environment or the critical realist impulse that education and learning should help students flourish and become self-determinant. I argue that what is missing from Illeris’ model is a concept of categorical *Bildung* as a moral purpose of teaching and learning. Moreover, it seems clear that Illeris’ model, although including the environment and society as conditions for learning, does not provide an explanation of how structures and mechanisms interact to create such conditions. This can also be seen as a lack of ontological clarity, as Illeris suggests with his recognition of something (out there) existing beyond the individual learner, though he does not address what that something is or how it effects the process of learning.

It would seem, then, that Brown’s theory of the laminar learning environment and Illeris’ general model of learning have much to offer each other. The former providing ontological clarity and specificity to structures and mechanisms affecting the environment and the latter providing depth and clarity to the process of individual learning in laminar and the open system of the school.

From this I argue that existing theories of learning, summarized in Illeris' general model of learning, lack ontological depth and fail to explain how structures and mechanisms at multiple layers of reality interact in the emergence of learning. In the final section of this discussion, I will deliberate on the effects of the absence of an explanatory theory of learning in contemporary curriculum reform.

The effects of absence in curriculum reform

How can a more ontologically coherent theory of learning benefit current efforts to develop curriculum? As Hodge's rendition of competency-based training makes clear, there are distinct benefits to ontological unclarity, rendering concepts to be flexibly applied in many policy contexts. It can also be argued that critical realism does not lend itself to grand theorizing, and that the underlabouring contributions of Brown, Priestley and Nunez are about as far as we should go in addressing learning. My argument in favour of more critical realist theorizing of learning is, however, not derived from a functional inclination towards theories that are easily adaptable to policy, nor is it from a hegemonic impulse to explain everything in a coherent theoretical framework. Rather, as I will argue in the following, I believe the absence of more a coherent explanatory theory of learning may have a real and negative impact on curriculum development in many countries. Using the Norwegian curriculum reform as an example, I will briefly comment on some of these impacts.

First, at the research level, this paper illustrates a long-standing division between competence and Bildung, two concepts that arguably have much to offer, and that, in the case of Norway, are engrained in the national curriculum. Although both the policy and practice fields have long since adopted the language of learning in education, the absence of a more comprehensive and ontologically coherent theory of learning

provides fertile soil for dichotomous positioning among researchers, as expressed in the notion of ‘bringing the teachers back in’ (as if they were ever really gone) from the perspective of Bildung and of ‘child-centred approaches’ (as if teaching is anything but) from the perspective of competence. This absence leads to continued divisions, missed opportunities for dialogue and the underuse of multidisciplinary approaches to development of new theoretical understandings of competence and Bildung for the 21st century.

At the policy level, as illustrated by Willbergh’s critique, the absence of a more coherent theory of learning provides policymakers with a shallow knowledge base and a continued inclination for an unbalanced cherry-picking of research in line with the ‘what works agenda’. Policymakers have a democratic obligation to make public the grounds on which they base their decisions and to use the best evidence available to them. When scholarly fields are at odds and unable to provide clear and balanced guidance, policymakers are left with suboptimal choices that in recent years have favoured reductionist theories claiming that learning outcomes can be reliably produced and measured in classrooms or simply that educational outcomes do not matter. This absence feeds the ‘what works agenda’ in education and obstructs the development of policies that balance learning outcomes with the development of autonomous self-determining students and teacher professionalism.

At the practice level, the absence of a more coherent explanatory theory of learning leaves teachers to rationalize their teaching methods based on a limited understanding of the complexity of learning that they encounter in their classrooms. In the Norwegian example, teachers are left to deal with the contradictions of competence and Bildung that are ingrained in the national curriculum. This makes teachers vulnerable to influences from both policy and research that emphasizes a narrow and instrumental

view of learning that can undermine their professionalism. Children in schools experience the absence of a broader theoretical understanding as a narrowing window of success and increased use of educational metrics that make it difficult for students to maintain a positive sense of self when they do not perform according to the standard. The autonomy and self-determination of students may become collateral damage in an educational system that risks marginalizing children that do not 'measure up' to society's expectations.

Finally, and on a more reconciliatory note, an understanding of learning grounded in a critical realist ontology can cater to both empiricists, who want to measure competence as an outcome of learning, and those who want to support the autonomous meaning making of students through Bildung by recognizing that educational measurements do not capture all aspects of learning in an open system of education. Critical realism is at its core is an emancipatory philosophy with an impulse to liberate humanity from master-slave relations and enabling communities of free and self-determining individuals (Bhaskar 2008, 2016). Critical realists should make every effort to counter the damaging effects of school systems that create outsiders and exacerbate growing inequalities. Underlabouring for a more coherent explanatory theory to unite competence and Bildung thus becomes important, not only in answering Tikly's call for progress in research, policy and practice, but also to mobilize the research community to prevent our educational systems from becoming the fifth E in the global crisis system.

Is education in crisis?

In the film *The Fifth Element* (Besson 1997), the lead character Leeloo after studying all of human history tearfully utters; 'Humans act so strange... Everything you create is used to destroy.' Her counterpart, the disgruntled taxi driver Korben Dallas, answers:

‘Yeah, we call it human nature’.

If we are to respond to the crisis system in more sustainable ways, more work needs to be done to ensure that education can protect against, rather than exacerbate, the problems facing humanity in the 21st century. In this article, I have outlined some of the longstanding disputes between the concepts of competence and Bildung and how the absence of a theory to reconcile these concepts impacts current efforts to develop curricula. These disputes, I have argued, have a negative impact that provide fertile ground for dichotomous theoretical positioning in research, short-sighted cherry picking in policy and instrumental practice in schools. This being the case, valuable energy is wasted that could be spent more productively in bringing the research community together to tackle the very real challenges facing education today. Building on the ideas of a stratified ontology and epistemological plurality, I have argued that critical realism may provide a ‘middle way’ to reconcile these positions. I have also argued that the critical realist laminar model of the learning environment provides a steppingstone towards theoretical expansions that, combined with an explanatory theory, may outline a more ontologically coherent framework for learning. The absence of such a framework, I have argued, may have causal effects on curriculum development not just in Norway but in many countries across the world. Failing to provide a more coherent theory of learning may reinforce the unsustainable view of learning as merely a commodity in an expanding global knowledge economy and strengthen the claims of those who see education as part of the global crisis system. Rather than succumbing to this grim proposition, I propose to harness the transformative power of critical realism to revision education, not as a fifth E, but as the Fifth Element of Luc Besson’s 1997 film; the element that protects humanity from self-destruction.

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