SAMPLE CHAPTER

Chapter 1: Two conceptions of education

1.1 Bildung versus Competences

Although competence-based education (CBE) has been widely deployed in professional, trade and military training for many decades, it is no exaggeration to say that CBE has now become the most widespread general approach to teaching and learning in the world. This fact is often explained—and even justified—by invoking the demands of the contemporary 'knowledge society'. This expression refers to economic and social systems in which a certain type of technical or expert knowledge has become a product to merchandise that is even more important than material goods themselves. This type of knowledge is used strategically as a factor of economic development and competition between companies as well as states and nations. As Ilmi Willbergh has emphasised, a distinctive feature of the knowledge society is the very fast pace of change in it.³ So, it becomes necessary for its members to be highly mobile occupationally, to switch jobs, perhaps to have more than one job simultaneously, to learn quickly and incessantly, in order to cope with new and complex problems, and to think critically and innovatively. In the knowledge society being and becoming competent is imperative, and competence itself has turned into a product to merchandise. Knowledge societies do invest in education and training in order to build up resources of human capital. The emphasis is often on lifelong education. But this is not for the sake of human fulfilment. Lifelong education is required in order for the individual to be able to respond to the changing nature of the workplace and the tasks that need to be done. If individuals do not keep up, they will quickly find themselves out of work.⁴ Within this context, CBE has become a sort of magic word used by policymakers to refer to the type of education required by contemporary societies.

To prevent possible misunderstanding, let us clarify that competences are not mere skills, though they are sometimes confused with them. The word 'skill' in education and job recruitment is typically used to refer to learnable ability to perform an action or a set of actions to attain a desired result. A competence is, on the other hand, a more complex disposition that incorporates skills together with other elements. Roughly, a competence is a learnable ability and inclination of a subject to coherently apply knowledge, skills and values for achieving certain expected results. For example, the competences required by computer graduates arguably include (among many others) the skills and attitudes to correct a poorly developed algorithm and modify the codes to suit problem at hand; to utilise application design methodologies, tools and current techniques to convert business requirements and logical models into a technical application design; to manage crisis arising from software team differences and forge ahead to accomplish the task at hand; and to provide mentoring and support to clients.⁵

CBE can basically be characterised as an outcome-based approach to education that incorporates modes of assessment designed to evaluate students' mastery of learning via the demonstration of competences. Some forms of CBE are strongly student-centred, since they allow students to use different learning methods and earn credentials by demonstrating competence mastery through types of assessment that take into account their individual needs

¹ See for instance Anderson (2008) and Voogt (2012).

² See Willbergh (2015).

³ We consider possible causes of this phenomenon at the end of Chapter 4.

⁴ Cf. Ozolins (2021: 4).

⁵ Cf. Ibezim and Chibuogwu (2017).

and learning styles, and can be undertaken at a personalised pace. Yet these are not the most prevalent forms of CBE today, which depend instead on a top-down approach to curricula and testing based on prearranged competence sets and assessment standards. We go deeper into the analysis of the notions of competence and CBE in the next chapter.

It is instructive to learn how CBE has recently become the credo of many, if not most, education policymakers in the world. Willbergh observes that around the turn of the millennium, various supranational organisations and forums—such as UNESCO, the OECD, the EU and the G8—started adopting the narrative of the knowledge society, according to which our economic and social system would require a range of novel skills and competences for the 21st century, and thus CBE. In accordance with this, many states members of the OECD and EU have now adopted what are commonly called the '21st century skills and competencies' in their school curricula at all levels. The 21st century skills and competences movement involves all levels of education, including life-long learning and adult education.⁸ In USA, competence standards were introduced with the No Child Left Behind Act in 2001, followed by A blueprint for reform: The reauthorization of the elementary and secondary education act in 2010.9 Furthermore, CBE is now a requirement for graduate medical program accreditation in USA, and there are teacher accreditation systems throughout the county with minimum standards of performance and minimum levels of competence. ¹⁰ A cursory examination of recent academic publications on CBE will reveal that similar transformations in national education systems have occurred or are occurring in almost every country in the world, regardless of continents or regions.¹¹

CBE has quickly become one of the most important areas of research in science and philosophy of education. A search of books and articles on 'competence based education', 'competence based assessment' and 'competence based curriculum' in *Google Scholar* yielded approximately 3,570,000, 4,950,000 and 3,270,000 results, respectively, in July 2023.

As we will explain below, the present work is a reasoned exhortation to move away from the forms of CBE currently dominant in most school systems around the world and to adopt a qualified form of *Bildung-oriented education* (BOE). We will argue that these forms of CBE are too problematic and harmful to retain the hegemonic role they have in our school systems, and that it would be beneficial and more appropriate and just for students and society at large to replace them with a form of BOE.

But what is *Bildung*? Unfortunately, the German word '*Bildung*' has no literal translation in English, but it is often rendered with 'formation', 'edification', 'cultivation', 'nurture' or 'education', among other expressions. '*Bildung*' refers to an important sociophilosophical and educational tradition in central and northern Europe—mainly in the German-speaking countries and Scandinavia—that continues to attract the attention of philosophers and theorists of education.

The conception of BOE is typically traced back to Wilhelm Von Humboldt (1767-1835), who was heavily influenced by the views of the philosopher Immanuel Kant (1724-1804) and his student Johann Gottfried Herder (1744-1803). The idea of BOE was introduced

⁶ See for instance Gervais (2016).

⁷ See Willbergh (2015).

⁸ Cf. Trilling and Fadel (2009).

⁹ However, important elements of CBE, though only partly integrated into the school and academic setting, have been present in USA since the 1960s (see for instance Horton 2000, Barrick 2017 and Gallagher 2014). ¹⁰ Cf. Horton (2000).

¹¹ Here is a list of articles documenting some of these changes: Nsengimana *et al.* (2020) about Sub-Saharan Africa, Namwambah (2020) about Kenia, Taisaa (2013) about Mongolia, Nurdin *et al.* (2023) about Indonesia, Luo and Yu (2022) about China, Sadeq *et al.* (2021) about Kuwait, García (2021) about Mexico, Chantanathas *et al.* (2023) about Thailand, Japan, Singapore, United States, England, Canada, Sweden, Hong Kong, Taiwan, Korea, Finland, Denmark, Australia and New Zealand.

in Europe in close connection with the ideas of humanism and democracy. ¹² Although nowadays there are different understandings of *Bildung* and BOE, ¹³ it is not inaccurate to describe BOE as a view that takes education to be a life-long, holistic and transformative process of the self-formation of an individual consciousness whereby—according to the classical, neo-humanist understanding of *Bildung*—the individual attains to full humanity. This process takes place through a combination of enculturation, acquisition of knowledge, cultivation, and intellectual, emotional and moral development. '*Bildung*' refers to both this process and its final product. *Bildung* is conceived of as something that should be intentionally pursued by the individual, though it can be triggered, guided and supported by teaching—so, it is partly institutionalised. According to BOE theorists, the process of self-formation of an individual consciousness is accompanied by the individual's acquisition of a reflective disposition to responsibly interact with the social structures that surround them. The two ultimate goals pursued by BOE are thus the subject's agency, freedom and autonomy, on the one hand, and the subject's responsible citizenship, on the other. ¹⁴ We analyse the notions of *Bildung* and BOE in Chapter 4.

Although BOE and *some* versions of CBE may appear similar, in that they both aim to be student-centred, they also look very different in other respects. For example, BOE is holistic and teaching-oriented while CBE is essentially atomistic and assessment-oriented. In current science and philosophy of education, BOE is often opposed to CBE. There is an interesting historical explanation of this opposition. In the reminder of this chapter, we outline this explanation. This chapter concludes with a description of the principal aims of this book, and the structure and contents of the chapters that follow.

1.2 PISA amid competences and Bildung

In 1999, the Organisation for Economic Cooperation and Development (OECD) launched the Programme for International Student Assessment (PISA). PISA is a triennial study that measures the knowledge, skills and competences of 15-year-old students in the three main domains of reading, scientific, and mathematical literacy, where 'literacy' refers to the capacity of students 'to apply knowledge and skills, and to analyse, reason and communicate effectively as they identify, interpret and solve problems in a variety of situations'. Each cycle focuses on only one of these literacy domains. (However, problem solving, financial literacy and global competence were additionally tested in some cycles.) A presupposition of PISA designers is that 'parents, students and the public and those who run the education systems need to know the answer to ... questions' regarding how the education system prepares students for lifelong learning. PISA was introduced 'in response to this demand'. So, its key objective is to assess in students close to adulthood 'aspects of preparedness for adult life'. 18

A crucial assumption of PISA is that it is possible to measure the quality of a country's education by using *shared* indicators—namely, 'universal, independent of school systems, social structure, traditions, culture, natural conditions, ways of living, modes of

¹² Cf. Konrad (2012).

¹³ See for instance Sjöström and Eilks (2018).

¹⁴ Cf. Schneider (2012), Rucker (2020) and Sjöström and Eilks (2018).

¹⁵ OECD (2019: 13).

¹⁶ OECD (2000: 3).

¹⁷ OECD (2000: 3).

¹⁸ OECD (2000: 3).

productions'. ¹⁹ Indeed, PISA does not have a *curriculum* approach but a *literacy* approach. The test content is supposed to be independent of the school curricula of the participating countries. The test assesses whether students are able to apply in real life situations what they have learned in school by the time they have finished their compulsory schooling. ²⁰ Although the test assesses—as already clarified—reading, scientific, and mathematical literacy, these literacies are broadly characterised in terms of competences. For instance, scientific literacy is defined by these three competences: explaining phenomena scientifically, evaluating and designing scientific enquiry, and interpreting data and evidence scientifically. ²¹ This approach is meant to reflect 'the fact that modern economies reward individuals not for what they know, but for what they can do with what they know'. ²²

The first PISA testing took place in 2000 in twenty-eight OECD countries and four non-OECD countries. The testing has then been repeated each three years with an increasingly higher number of countries assessed each time.²³ Importantly, since 2000, the publications of PISA rankings have created discomfort in many of the participating countries.²⁴ Because of this, many governments have launched educational reforms—sometime quite radical—as a direct response to a poor (or perceived as such) PISA score.²⁵ It is interesting to examine the effects of PISA in the German-speaking countries and Scandinavia.

Before 2000, the educational philosophy behind the schools of these countries was substantially that of *Bildung*, in accordance with some national or local version of it. Accordingly, the education systems of these countries largely focused on fostering the overall intellectual development of students and their relations with society. National educational standards based on competences and the assessment of students hinging on these standards had no place, or no crucial role, in the educational policies of these states. Typically, the content of teaching was loosely constrained by written curricula based on general objectives set by educational policies. So, teachers were to a large extent free to decide their educational agenda—namely, to decide which segments of the curriculum to enact and how to interpret them. Furthermore, teachers were responsible for their pedagogy, and thus for the assessment of students.²⁶ As we will see, these are all distinctive features of BOE.

As said, the publication of the 2000 (or 2003) PISA rankings and their wide media exposure in these countries led to a series of reforms concerning both assessments and curricula. Politicians and policymakers adduced evidence from low PISA scores—often uncritically²⁷—as the main reason for these changes.²⁸ They argued that controlling education is essentially about surviving in the global market and developing the competences in the learners that are necessary in the labour market. The PISA scores were widely assumed to

¹⁹ Sjøberg (2017: 338).

²⁰ Cf. Hopfenbeck et al. (2018).

²¹ Cf. OECD (2019: 100-101).

²² OECD (2000: 11).

²³ In 2018, they were seventy eight.

²⁴ The 'PISA shock' in 2000 in Germany was anticipated by the TIMSS shock in 1995, at which Germany also scored poorly (cf. Biehler and Niss 2019).

²⁵ See for instance OECD (2012), Wiseman (2013) and Sjøberg (2017).

²⁶ See for instance Ertl (2006), Neumann *et al.* (2010), Odendahl (2017) and Glaesser (2019) for Germany, Kanape-Willingshofer *et al.* (2016) for Austria, Egelund (2008), Dolin and Krogh (2010) for Denmark, Tveit (2014) for Norway, and Wikström (2016) for Sweden.

²⁷ See for instance Sjøberg (2017).

²⁸ In Germany this switch towards CBE had already started in the 1950s and the 1960s, though it culminated with the reforms after the 'PISA shock' (cf. Odendahl 2017 and Biehler and Niss 2019). Finland typically scores well on PISA tests. Nevertheless, its education system is slowly moving towards CBE. See for instance Hardy and Uljens (2018).

²⁸ See for instance Sjøberg (2017).

provide reliable measures of the total quality of overall school systems. Thus, reforms were introduced to meet the perceived or alleged challenges. In particular, national educational standards prescribing competences that students should acquire at the end of certain grades were ubiquitously introduced, and school curricula were aligned with these standards. These national standards came together with national quality assessment systems and policies that include cyclical tests at local or national level inspired by the PISA framework. Also, curricula specifying learning outcomes in terms of skills and competences were very often designed and made binding.²⁹

Since the grounding assumptions, motivating values, reliability and significance of PISA tests can be questioned,³⁰ a number of education theorists and philosophers of education have expressed perplexity or even alarm at these reforms. For instance, Jens Dolin and Lars Krogh have noted that

[i]n the case of Denmark, one could ask why Denmark is doing so well in the international economy when Danish young people achieve such a mediocre score on international comparative tests.³¹

The very same question could be asked about other Nordic countries, and especially Germany. More generally, Svein Sjøberg stresses that

the main concern [of PISA] is the national economy, not the personal development of the learner. There is also the underlying assumption that competition is always good, and that a free-market economy always promotes quality. The increasing role taken by the OECD is pushing aside the influence of international organization with different agendas and ideals, like UNESCO and UNICEF. Since studies like PISA by design cannot identify causal relationships behind neither success nor failure, the educational consequences of the studies are not clear. In many countries, PISA results are used to legitimize market-driven reforms, control of the teachers, payment by test results for teachers and principals, erosion of the public school system, privatization and the introduction of more testing regimes. In this development, the OECD now operates in close contact with the world's largest commercial company in the education sector, Pearson Inc. The success of PISA as an instrument of governance is currently expanded also to target schools and their teaching in a more direct way: a PISA-like instrument, 'PISA for Schools' is developed for local use, for schools and school districts, enabling them to compare their own schools to 'PISA winners'. This development may also create anxiety and concern not only at the national or federal level, but also at the local level. This test is also a commercial product, opening up a large and untapped market.³²

While we agree with Sjøberg on all or most of these points,³³ what we would like to stress at this juncture is that most countries with traditions of BOE that experienced alarm at the PISA

²⁹ See for example Ertl (2006), Dolin and Krogh (2010), Pepper (2011), Tveit (2014), Chaiklin (2016), Kanape-Willingshofer *et al.* (2016), Mølstad and Karseth (2016), Wikström (2016), Sjøberg (2017) and Glaesser (2019). ³⁰ The most comprehensive and detailed synthesis of objections to PISA is in Zhao (2020).

³¹ Dolin and Krogh (2010: 586).

³² Sjøberg (2017: 327). See also Grek (2009), Rizvi and Lingard (2009), Dolin and Krogh (2010), Tröhler (2012), Odendahl (2017) and Zhao (2020).

³³ In some cases the OECD agenda seems to converge with those of international organisations like the UN and UNESCO (see for instance Gilomen 2003 and OECD 2019: 165-215). Yet, as some have noted, this convergence is puzzling because it risks making the OECD programme—which is basically driven by human capital theory—internally incoherent (cf. Engel *et al.* 2019).

reforms nevertheless pushed in the direction of CBE. The introduction of competence-based assessment and curricula was in fact the overarching rationale of these changes. Because of this, philosophers of education and education theorists have started contrasting BOE with CBE.³⁴ In many cases these two conceptions of education have been presented as incompatible alternatives; this is for instance Willbergh's view.³⁵

It is important to realise, however, that although the PISA framework is meant to assess competences, and thus rests on a competence-based approach to education, this framework does not coincide with or exhausts CBE. Therefore, criticising the PISA tests and distrusting them does not necessarily commit one to criticising and distrusting CBE as a whole. One might suppose that a form of BOE could be implemented together with a version of CBE, independently of the PISA framework and the OECD's agenda, to form a sort of functional and harmonious whole. This is not our view: we agree with Willbergh and many others that BOE and CBE are incompatible.³⁶ We have at least three reasons to think so: firstly, while for CBE the acquisition of certain competences is the ultimate goal of education, for BOE acquiring 'competences' can only be a means to Bildung (among other possible means such as acquiring factual knowledge, understanding, general attitudes, skills, etc.). Furthermore, the 'competences' that can be a means to Bildung in BOE cannot be the same ones presupposed by CBE. For the latter but not the former are required to be objectively measurable, but there is reason to think that this requirement cannot be satisfied (which means CBE is flawed in its own right). Last but not least, CBE is designed as a topdown approach to education that subjects teachers to a logic of control and accountability. Thus, in CBE, which competences are to be taught and assessed in school and their assessment methods and standards is typically determined by national or regional curricula. On the other hand, the approach of BOE to education privileges teacher freedom and responsibility. This means that teachers need to be free to decide which 'competences' (if any) to teach and assess, and the assessment methods and standards. The next chapters will expand on and hopefully vindicate all these claims.

As said, this work can be described as a reasoned exhortation to move from CBE, currently dominant in most school systems, to a qualified form of BOE, which essentially expands the conception of education articulated by Wolfgang Klafki (a still relatively unknown scholar in the English-speaking world) mainly in the second half of the last century. As we will explain in detail in Chapter 4, in Klafki's conception of BOE, Herder and Humboldt's classical theory of *Bildung* blends in an original and fruitful way with both the hermeneutic understanding of the human sciences, originated from Dilthey's work, and forms of social critique championed by the Frankfurt school.

We not only intend to demonstrate that CBE is in more than one sense internally incoherent, but we will also provide good reasons to think that its implementation fails to endow students with the type of autonomy and capacity for self-determination they deserve as human beings. We will also argue that CBE contributes to structural forms of oppression and injustice, and might favour various social pathologies, whereas BOE, on the other hand, appears capable of countering or healing them. Our discussion will often unfold through an analysis of the views developed by scholars who can broadly be identified as critical theorists or social philosophers. (The thinkers who have influenced our arguments more than any other are probably Jürgen Habermas, Iris M. Young, René Gorz and Rahel Jaeggi). We are well

³⁴ See for instance Ertl (2006), Dolin and Krogh (2010), Neumann *et al.* (2010), Deng (2015), Willbergh (2015), Kovalainen (2018), Restad (2019) and Biehler and Niss (2019).

³⁵ Cf. Willbergh (2015).

³⁶ We therefore think that the complaints of those who argue that the attempts to merge CBE and BOE in some countries after the 'PISA shock' have made the national education systems incoherent are justified (see for example Ertl 2006, Hopmann 2007, Dolin and Krogh 2010, Tveit 2014, Willbergh 2016 and Restad 2019).

aware that the viewpoints of these scholars are or may be in tension with each other, but it is not our intention to provide any sort of *unified theory* here. We only aim to avail the reader a series of useful points of view from which to compare and contrast CBE and BOE. Furthermore, we are more interested in the *analyses* afforded by these scholars—which often complement and enrich each other—rather than the *solutions* they propose—which may diverge and conflict. While we have no overarching theory, we want to make it clear that we are not postmodernists in an important sense: we still think—or at least hope—that some version of what Habermas calls 'the project of modernity'—that is, the project of personal and collective emancipation through the use of reason that has its roots in the Enlightenment³⁷—is still worth pursuing in life and education.

1.3 The plan

Chapter 2 focuses on CBE. After a brief historical introduction to the notion of competence, which highlights links between the emergence of this conceptual tool and important transformations in the world of work including the rise of Taylorism, we concentrate on the influential characterisation of competence elaborated by the OECD. Next, we present the two principal CBE models—the one focusing on student self-directed learning and the much more widespread model based on a top-down approach to curricula and assessment—and their main theoretical assumptions. We then evaluate the adequacy of the more widespread models of CBE and of CBE in general. We substantially argue that CBE does not deliver what it promises. CBE's advocates claim that it enables students to learn effectively and prepare for real life, and helps teachers enhance pedagogical precision and the accuracy of assessment. We contend that these claims are dubious or just false: we suggest that CBE might not prepare the new generations for the world they will have to live in. Furthermore, we contend that CBE encourages reductive conceptions and practices of education that are inadequate with regards to well-established educational goals, important educational contents and teaching methods, and crucial functions of teachers. Most importantly, we also argue that CBE's assessment methods are in more than one sense arbitrary, internally inconsistent and incomplete. Because of this, it is very doubtful that they can measure the degree to which students master anything.

In Chapter 3 we investigate the problems of CBE that arise in the broader context of society; to this end we introduce views elaborated by important social theorists—namely, Jürgen Habermas, Axel Honneth, Miranda Fricker, José Medina, Michael Sandel, Raffaele Ventura and Hartmut Rosa—which we will also draw on in the following chapters. We contend that a central shortcoming of CBE is that it only aims to equip students with the appropriate competences to perpetuate a society that already exists without giving them intellectual resources to criticise and possibly transform it in order to enhance well-being and make life more meaningful. We also argue that the predominant CBE models not only ignore important social functions of education—for example, promoting deliberative democracy, controlling the colonisation of the lifeworld, facilitating relations of mutual recognition, and reducing epistemic injustice—but they may also contribute to various types of social pathologies—for instance, a malignant form of meritocracy, a type of myopic and compartmentalised thinking, and forms of social acceleration. The conclusions of this and the previous chapter encourage us to look at a different model of education.

Chapter 4 focuses on BOE. We begin with a historical and analytical introduction to the classical notion of *Bildung*, which revolves around ideas of Johann Gottfried Herder and

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³⁷ See Chapter 3.

Wilhelm Von Humboldt, highlighting its religious, rationalist, neo-humanist and romantic ingredients. Then, we move on to examining BOE within the German Didaktik tradition, focusing on its recent declination by Wolfgang Klafki, which combines the principle that teachers are free to choose educational methods and assessment procedures with a hermeneutical approach to Bildung and ideas born within the Frankfurt School. We show how Klafki's ideas can contribute to the debate on powerful knowledge initiated by Michael Young in curriculum theory. After that, we further articulate and enhance Klafki's conception of BOE with the help of insights drawn from recent discussion about epistemic injustice, political agonism, communicative inclusion and social recognition. We pay particular attention to Iris M. Young's conception of communicative democracy. Next, we assess our own model of BOE and find that it is not affected by the problems that afflict CBE, and resists objections made by critical theorists, poststructuralists and postcolonial thinkers. We also dispel possible doubts about the general adequacy of its general assessment methods. BOE turns out to be an internally coherent and flexible conception of education guided by a vision of the human being as both autonomous and socially cooperative which is central to Western civilisation and perhaps also essential to most traditions and cultures of the world. We argue that these reasons make BOE preferable to CBE. However, we find BOE at odds with a widespread corporate mindset that today imposes a logic of accountability and efficiency on organisations and institutions in the world, including schools and education systems. We conclude that large-scale implementation of BOE would require changing this mentality.

In Chapter 5 we assess which education model between CBE with BOE fares better with the problem of cultural imperialism, especially with regard to assessment methods. We begin with an analysis of Iris M. Young's work on social injustice as structural oppression and her claim that the ideal of impartiality, celebrated in contemporary liberal democracies, is a disguised form of cultural imperialism. We then explore connections between Young's views and Alasdair MacIntyre's work on intellectual traditions and his critique of liberal individualism. With the help of these analyses, we conclude that the forms of CBE adopted in schools presuppose a view of the society in which students should live as adults conforming to the interests and values of the groups in power. As a consequence, CBE's assessment methods favour certain types of students and certain conceptions of the human being over others that would deserve recognition. We then discuss André Gorz's account of economic rationality, which we suggest is the form of rationality underpinning the corporate mindset currently governing most institutions and organisations in the world. Gorz's ideas shed light on the reasons of the hegemony of CBE and offer explanations for why people tend to be blind to its cultural imperialist implications. Next, we argue that because student assessment in BOE is essentially conceived of as a responsible, far-reaching but fallible judgment (rather than a normalising measurement, as in CBE), it is less likely to promote cultural imperialism and can help counter it.

In Chapter 6 we contrast again CBE and BOE to establish how CBE and BOE fare when faced with problems that afflict our societies. While we do not concentrate on any problem in particular, we make a general case that draws on Rahel Jaeggi's conception of a form of life as an organised cluster of practices with a normative character. Forms of life are basic constituents of the social world. We first dissect the notion of form of life and that of immanent critique, which is, according to Jaeggi, the type of critique used by participants in a form of life to overcome the crises and make the form of life flourish. We then maintain—following Jaeggi—that forms of life can be conceptualised as collective problem-solving and learning activities, and that emancipatory forms of life are those that progressively resolve their own problems by learning about social reality through the exercise of immanent critique. After that, we contend that CBE is a deviant form of life because its capacity for

critical transformation is structurally limited. Next, we argue that while BOE is well suited to equip students with the abilities required to heal the pathologies of forms of life, CBE does not stimulate these abilities, and might even hinder their development. The conclusions of this chapter include our final thoughts on the overall project developed in this book.