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Empowering political engagement with unsustainable actions: the possibilities and limitations of teaching guides for climate change education

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ABSTRACT

The UNESCO-led Global Action Programme (GAP) on Education for Sustainable Development (ESD) underscores the need to increase teachers' capacities to promote sustainable actions through ESD, and several capacity-building teaching guides have been developed with that purpose. From the perspectives of the pluralistic and transformative traditions of education, these guides should support teachers' capacity to facilitate democratic education processes through which students are empowered to engage with different ways to problematize unsustainable actions. However, social practice theory scholars' critique of behavior-oriented theories – which is largely neglected in ESD research – provides reasons to suspect that the latter theories' problematization of unsustainable actions dominates the guides. This would significantly limit their empowering potential. This study draws on the 'what's the problem represented to be?' approach, to explore how ESD guides for secondary climate change education problematize unsustainable actions and examine the possibilities and limitations these problematizations constitute for empowering political engagement.

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Introduction

> Global issues – such as climate change – urgently require a shift in our lifestyles and a transformation of the way we think and act (UNESCO 2017, 1).

The fact that the resilience of societies and ecosystems is undermined by human activities that cause climatic and other environmental changes (IPCC 2014; Steffen et al. 2015) underpins calls to change our unsustainable activities. These include UNESCO's (2017, 2019) calls for an education for sustainable development (ESD) that transforms '[…] the way we think and act', particularly through support for cognitive, socio-emotional and behavioral learning. This support encompasses teaching guides for ESD. How to understand the problem of unsustainable actions is, however, disputed in the social sciences (Batel et al. 2016; Shove 2010a). Thus, this study explores how unsustainable actions are problematized in guides for secondary climate change education (CCE) and how these problematizations enable and limit a democratically oriented ESD that empowers students to politically engage with unsustainable actions.

This paper is situated within the democratically oriented branch of ESD research,[1] which is differentiated from the technocratic branch. Different labels are used to describe this divide. Some

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researchers describe it in terms of the pluralistic (democratic) versus the normative (technocratic) tradition (Van Poeck, Wals, and König 2018; Öhman and Östman 2019), other in terms of the transformative (democratic) versus the transmissive (technocratic) tradition (Aboytes and Barth 2020; Nikel 2007). Regardless of the labels, there are important differences between these two branches.

From the viewpoint of the pluralistic and transformative traditions, teachers of ESD should facilitate democratic education processes that cultivate students' abilities to critically reflect on socio-environmental challenges, think outside the box and engage in democratic political processes. Different ways of framing and responding to issues like climate change, and the values and ideologies underpinning these, should be articulated and put to question. Importantly, the knowledge, values and skills to promote sustainable courses of action are not something that should simply be transmitted to students. Their content and meaning should be determined through democratic education processes (Balsiger et al. 2017; Mogren and Gericke 2017; Nikel 2007; Van Poeck, Wals, and König 2018; Öhman and Östman 2019).

From the perspective of the normative and transmissive traditions, ESD should promote particular knowledge, values and skills. These are generally known to the teacher beforehand and should be used to cultivate specific behaviors (Nikel 2007; Öhman and Östman 2019), for instance to reduce energy consumption. Accordingly, the approaches of the technocratic branch have an instrumental focus to convey expert knowledge on how students should behave (Mogren and Gericke 2017; Van Poeck, Wals, and König 2018).

Education research nevertheless highlights that the problem of transforming unsustainable actions are generally reduced to a matter of individual behaviors, both in the technocratic approaches (Mogren and Gericke 2017; Öhman and Östman 2019) and some democratic transformative approaches, particularly those based on Mezirow's (2000) influential approach (Aboytes and Barth 2020; Balsiger et al. 2017; Hoggan 2016). Proponents of other democratic ESD approaches, especially the transformative approaches that are based on critical pedagogy, criticize this behavior-orientation for disregarding systemic problematizations of unsustainable actions (Bellino and Adams 2017), for instance related to capitalism and power asymmetries (Balsiger et al. 2017; Oberman and Sainz 2021). Approaches that only problematize unsustainable actions as a matter of individual behaviors thus considerably reduce the democratic and empowering potential of ESD.

Education research that criticizes the behavior-orientation found in many ESD approaches and explores alternatives to these is, however, largely disconnected from the vibrant social science debate on unsustainable actions. In this debate, behavior-oriented theories, so-called ABC (Attitudes, Behavior, Choice) theories, are heavily criticized from the perspective of social practice theories (henceforth, practice theories) (e.g. Batel et al. 2016; Kurz et al. 2015; Shove 2010a; Whitmarsh, O'Neill, and Lorenzoni 2011). With the exception of one study on how waste education can draw on practice theories to overcome the limits of a behavior-oriented focus (Jørgensen, Madsen, and Laessøe 2018), there are few traces of practice-theory scholars' critique and alternative to the ABC in ESD research. This is unfortunate since engagement with practice theories could sharpen the critique of behavior-oriented ESD and support the development a stronger systemic focus.

An important aspect of practice-theory scholars' critique is that the ABC theories have depoliticizing and disempowering consequences through the way they are employed in policies. First of all, it is claimed that policies targeting unsustainable actions, such as energy consumption (Royston, Selby, and Shove 2018; Shove 2010a), generally are based exclusively on ABC theories. Reflecting education research's critique that dominant and naturalized ideologies hamper a democratically oriented ESD (Huckle and Wals 2015; Laessøe 2010), practice-theory scholars argue that the dominance of the ABC reproduces a particular ideological perspective on social change as 'neutral' and 'common sense' (Batel et al. 2016; Shove 2010a). As Shove (2010a, 1280) puts it, theories of the ABC are '[…] a template for intervention which locates citizens as consumers and decision makers and which positions governments and other institutions as enablers'.

Batel et al. (2016) argue that the ABC theories, thereby, reproduce the individualized neoliberal consumer-citizen, especially since they generally relegate climate actions to the private sphere. Reflecting education scholars' critique of behavior-oriented ESD (Bellino and Adams 2017), practice-theory scholars also emphasize that the ABC theories tend to impede critique and mobilization for systemic change. As Uzzell and Räthzel (2009, 342) suggest, '[…] attacking consumer behaviour simply addresses the 'down- stream' symptoms rather than the 'upstream' causes of environmental problems'.

Although empirical research is needed to discern whether the ABC also dominates capacity-building CCE guides (and ESD in general), and to examine the particular implications that the findings would have for a democratically oriented ESD, such dominance would not be surprising for at least two reasons. First, several literature reviews of research on action-oriented and transformative ESD indicate that ABC theories underpin most such studies. The notable exception is the aforementioned study by Jørgensen, Madsen, and Laessøe (2018). Otherwise, the research topics clearly reflect the ABC. Among these are for instance the efficacy of teaching approaches (Bowers and Creamer 2021; Chen and Liu 2020; Kleine and Brightwell 2015; Popescu et al. 2019; Rousell and Cutter-Mackenzie-Knowles 2020) and behavioral-change theories (Heimlich and Ardoin 2008; Palupi and Sawitri 2018) to incite behavioral change; the attitudes and knowledge that most significantly promote sustainable behaviors (Salas-Zapata, Ríos-Osorio, and Cardona-Arias 2018); and insights of how ESD could overcome the weak correlation between attitudes and behaviors (Arbuthnott 2009). Second, as mentioned, UNESCO emphasizes the importance of 'behavioral learning'. This choice of label suggests a bias towards ABC theories, although the definition of this learning dimension includes action competences for collective action and activism that are compatible with other theories (see UNESCO 2019).

In light of the above, the purposes of this study are to explore whether the problematizations of unsustainable actions in teaching guides for CCE correspond to those of the ABC and practice theories, and to examine the possibilities and limitations that these problematizations constitute for a democratically oriented ESD that empowers students to politically engage with unsustainable actions. Drawing on the Foucauldian-based 'what's the problem represented to be?' (WPR) approach (Bacchi 2009, 2012), it is stressed that any given policy prescription or guide to practice implicitly represent a problem that creates particular possibilities and limitations. The analysis is guided by the following WPR-inspired questions:

1. How are the problems and underlying assumptions of unsustainable actions represented through the CCE guides prescriptions, including those for cognitive, socio-emotional and behavioral/action-competence learning?
2. How do these problems constitute students as 'sustainable citizens', particularly concerning their roles and responsibilities for change?
3. What blind-spots are created?

The remaining part of the study is structured as follows. First, I introduce the reader to the WPR approach. I then briefly outline the central differences between the ABC theories and practice theories regarding their problematization and underlying assumptions of unsustainable actions. I thereafter present the methods used to retrieve the CCE guides and how I identified the problematizations and assumptions in these guides. Next, I report the answer to the first research question and thereby demonstrate that most, but not all, CCE guides are underpinned by a problematization and assumptions that correspond to the ABC theories. Finally, I present the concluding discussion, in which I answer the second and third research questions and elaborate on the possibilities and limitations constituted through the ABC problematization, as it is represented in the guides. Specifically, these issues are discussed in relation to ESD scholars' and practice-theory scholars' critique of behavior-orientated approaches. I conclude the section with a discussion of how practice theories could be used by researchers and developers of capacity-building guides to expand the possibilities for political engagement.

Analyzing problem representations

The analytical strategy of this study draws on the WPR approach. The WPR provides questions and tools to support policy research that examines the possibilities and limitations produced through the problematizations represented in policies, such as CCE guides (Bacchi 2009). Importantly, these problematizations are those implicitly represented through prescriptions (e.g. on how to facilitate education for sustainable actions), not explicit descriptions of problems (Bacchi 2009, 2012; Bacchi and Goodwin 2016).

Based on a Foucauldian understanding of power as productive, the WPR highlights that a problematization produces particular possibilities and limitations, for instance by constituting specific subjectivities and blind-spots (Bacchi 2009). A subjectivity could be a particular notion of the 'sustainable citizen', and the roles and responsibilities associated with it. A blind-spot could be other notions of the 'sustainable citizen' that this problematization forecloses. By identifying the problematization and its underlying assumptions in a policy (e.g. those of ABC theories), and comparing these to alternative ones (e.g. those of practice theories), it is possible to critically analyze these subjectivities and blind-spots.

ABC and practice theories

Although the two groups of social science theories labeled ABC and practice theories are both comprised of several theories, each group shares an overarching focus and conceptualization that differ significantly from the other (Batel et al. 2016; Shove 2010a, 2010b, 2011, 2014). By implication, each group of theories also represent the problematization and underlying assumptions of unsustainable actions differently from the other.

The ABC theories center on ways to support and motivate people to choose sustainable alternatives to their unsustainable behaviors. Specifically, this means that ABC research, primarily conducted in economics and (social-)psychology, focuses on identifying external drivers that influence individuals' choices of behavior. These drivers should propel shifts in attitudes and contexts to enable and incite individuals to relinquish their unsustainable behaviors for sustainable options (Shove 2010a).

Assumptions that underpin the ABC are that individuals are relatively autonomous and can be motivated and enabled to choose alternative courses of action, in spite of the particular needs, desires and other attachments they have to the unsustainable behaviors of their everyday lives. These attachments are barriers that individuals should overcome. This also means that individuals are assumed to be the primary agents of social change through their choices to abandon unsustainable behaviors in favor of alternatives (Shove 2010a, 2010b, 2011; Shove and Walker 2014). By implication, the persistence of unsustainable actions is problematized as being the result of inadequate support and motivation that trigger individuals to choose to disconnect themselves from their unsustainable behaviors in favor of sustainable alternatives.

Translated to ESD, the ABC problematization would entail an emphasis to foster learning that enables and encourages students to become frontrunners that choose to change their unsustainable behaviors in favor of alternative courses of action. Specifically, the educational focus would be to alter students' attitudes and empower them with knowledge and skills to choose sustainable behaviors, for instance to choose sustainable forms of transportation.

Contrary to the ABC, practice theories center on how the unsustainable practices of everyday life emerge and are reproduced as well as how these practices can be unmade and replaced, thereby setting the focus on systemic changes. As Shove (2010a, 1282) puts it, they direct the '[…] attention to the making and the erosion of "envirogenic" environments, these being ones that favour the reproduction of variously sustainable ways of life […]'. Developed in sociology, science and technology studies, history, complexity science, etc., practice theories are based on the assumption that attachments to practices emerge, persist and change as a result of the internal dynamics

of particular socio-technical arrangements. The focus is not on external drivers of behaviors, as in the ABC. Instead, it is the internal dynamics of socio-technical arrangements that need to be unmade and replaced to dissolve people's attachments to unsustainable practices and create environments in which sustainable practices are not alternative options but mainstream practices. Accordingly, people are also presumed to be strongly attached to the practices of everyday life (Shove 2010a, 2014; Shove and Walker 2014; Walker, Shove, and Brown 2014). By implication, the persistence of unsustainable actions is problematized as being the result of the (re)production of particular socio-technical arrangements that create needs, desires and other attachments to unsustainable practices as well as inaction to unmake and replace these with sustainable arrangements.

Translated to ESD, the practice-theory problematization would put the educational focus on how the needs, aspirations and desires, connected to specific practices, emerge and are reproduced through particular socio-technical arrangements, as well as how these arrangements could be deconstructed and replaced. In societies where car travel is a widespread mode of transportation, students could for instance be assigned to examine how the needs (e.g. related to infrastructure, stress, norms and expectations) and desires (e.g. connected to cultural identities, status and career opportunities) of car travels emerge and persist in their everyday lives and to explore how these could be altered through systemic changes.

Data and methods

The data is comprised of a sample of guides for secondary CCE. These guides are part of a network of guides – interlinked through references and databases – supporting the priority action area 3 of the Global Action Programme (GAP) on ESD: 'Building capacities of educators and trainers' (UNESCO 2014c, 20).

The sample of guides is relatively diverse and thereby provide a relatively good chance of identifying the problematizations of ABC and practice theories, provided that both are represented in the population of CCE guides. First of all, it is comprised of guides developed by several different organizations. Second, the guides vary in their character and focus. On the one hand, there are detailed instructions for entire lesson plans and single learning activities. On the other, there are 'good examples', proposed learning objectives, and facts and tools that teachers can use in CCE. The latter guides reflect the ambition to build educators' capacity through inspiring examples and supportive materials rather than detailed instructions.

The guides in the sample were retrieved from a combination of database searches and 'snowballing' (Esaiasson et al. 2012), conducted in August and September 2020. That is, I first retrieved a set of policy documents from database searches on UNESCO websites. I then scanned the references and lists of recommended resources in these documents to identify additional guides for secondary climate change education. As a result, I identified other CCE guides and websites, linked to the GAP, that I scanned for additional CCE guides. This combination of database searches and snowballing was repeated until no new CCE guides for secondary education were identified. Also, the searches were limited to guides in English. To delimit the quantity of guides included in the sample, those merely focused on climate impacts in small island states and other particularly vulnerable countries, as well as those specifically designed for the educational system of only one country, were excluded. This resulted in a sample of 34 documents (see Appendix 1), many of which included several CCE guides.

I coded the retrieved documents in NVivo 12, through a two-step process. First, I coded the textual content representing the problematization and assumptions of the ABC and practice theories. To support this, I used a coding scheme that, in addition to the problematizations and assumptions presented in Table 1, provided examples of more concrete questions and educational focus reflecting these assumptions and problematizations (see Appendix 2). Subsequently, another coding scheme was used to classify these codes as representations of the cognitive,

Table 1. Problematizations and assumptions of the ABC and practice theories.

	ABC theories	Practice theories
Primary problematization	The problem of unsustainable actions is inadequate support and motivation for individuals to choose to abandon their unsustainable behaviors in favor of sustainable alternatives	The problem of unsustainable actions is reproduction of, and inaction to unmake and replace, particular socio-technical arrangements from which strong needs, desires and other attachments to unsustainable practices emerge
Central assumptions	Individuals are relatively autonomous and can, with reasonable ease, choose to change their unsustainable behaviors	People have strong attachments, such as needs and desires, to particular practices that they carry out in their everyday lives, which makes it very difficult for them to change these
	Individuals are, through their choices, the primary agents of social continuity and change, which means that they should be supported and encouraged to choose to abandon their unsustainable ways of life in favor of sustainable alternatives	Social continuity primarily comes from reproduction of specific arrangements of socio-technical elements, which generate the needs, desires and other attachments people have to particular practices. Social change primarily comes about when these arrangements are unmade and replaced by other arrangements, which dissolve the needs, desires and other attachments to the previous practices
	External drivers with generic effect on individual choices, including attitudinal (such as triggers of value shifts and emotional responses) and contextual (such as economic incentives and awareness-raising education), should be used to support and motivate the choice of sustainable behaviors	Internal interactions in specific socio-technical arrangements create the needs, desires and other attachments of unsustainable practices as well as the practices themselves, which means that these should be unmade and replaced with sustainable arrangements to promote sustainable ways of life

Sources: Shove (2010a, 2011, 2014); Shove and Walker (2014); Walker, Shove, and Brown (2014).

socio-emotional and/or behavioral learning dimensions (see Table 2). As a result, I identified codes of the ABC and/or practice theories in 28 of the 34 documents of the sample (see Table 3).

Problem representations in the guides

This section presents the problematizations and assumptions of unsustainable actions represented in the CCE guides. As detailed below, the dominant problem representation and assumptions correspond to those of the ABC theories (see Table 3). Considering the number of guides in which this problematization is represented – many of the analyzed documents include several lesson plans, learning activities etc. – I only report illustrative examples, including prescriptions reflecting the cognitive, socio-emotional and behavioral learning dimensions. This part of the analysis is nevertheless much more extensive than the part on the practice-theory problematization, since the latter problematization is only represented in two guides.

Representations of the ABC problematization and assumptions

The problematization in the CCE guides that corresponds to the ABC can be described as: a shortage of education on how students can make sustainable choices and, individually and

Table 2. The three learning dimensions and examples of codes.

Learning dimensions	Examples of codes
Cognitive learning dimension: knowledge to understand the challenges of unsustainability	'Understand, know about, analyse, reason, evaluate, synthesize, apply knowledge, conceptualize, interpret or extrapolate, integrate, describe/explain, compare and contrast, recognize, differentiate, solve problems, think critically, think independently, think creatively' (UNESCO 2019, 35)
Socio-emotional learning dimension: social and emotional skills for facing the challenges of unsustainability	'Empathize, manage one's feelings, develop interpersonal skills, show care for others, avoid prejudice or bias, be inclusive, be cooperative, be kind, assertive, be able to negotiate and resolve conflicts, develop positive values such as care and compassion without discrimination, develop the ability to persevere, develop passion for and commitment to ESD/GCED themes, feel responsible, develop an inclusive sense of belonging to a society or country and the world (without negative attitudes towards particular social groups)' (UNESCO 2019, 35)
Behavioral learning dimension: competences to act in response to the challenges of unsustainability	'Learn to undertake some individual or collective action, community engagement as part of school activities or activism, be or plan to be a responsible citizen, regulate one's behavior in society, live in a sustainable manner, be a responsible consumer, undertake environmental or people-oriented action supportive of ESD/GCED goals' (UNESCO 2019, 35)

Comment: The table is based on a coding scheme developed for a report by UNESCO (2019).

Table 3. Documents representing the ABC and practice theories.

Document types	Problematization and assumptions of ABC	Problematization and assumptions of practice theories
Documents with lesson plans and instructions for other learning activities	British Council (n.d.) FAO (2009) FAO (2015) FAO (2020) Selby and Kagawa (2013) UNESCO (2010) UNESCO (2014a) UNESCO (2014b) UNICEF (n.d.) UNICEF and Alliance of Youth CEOs (n.d.) Volz (2011) weADAPT (2018) World's Largest Lesson (n.d.-b) World's Largest Lesson (n.d.-d) World's Largest Lesson (n.d.-e) World's Largest Lesson (n.d.-f) World's Largest Lesson (n.d.-j) World's Largest Lesson (n.d.-h) World's Largest Lesson (n.d.-g) World's Largest Lesson (n.d.-a) World's Largest Lesson (n.d.-c)	World's Largest Lesson (n.d.-i)
Documents with inspirational content and supportive material	Cade and Bowden (2011) Deeb et al. (2011) Gibb (2016) Talbot (2016) Thoresen (2010) von Hildebrand (2008)	Thoresen (2010)

collectively, support others to make such choices. As elaborated in the concluding discussion, some of these guides thus focus on collective actions or a combination of individual and collective actions in ways that reflect democratic approaches to ESD, while other mirror technocratic approaches.

The ABC problematization is represented through various instructions for CCE, centered on enabling and motivating students to choose sustainable behaviors. Such instructions recur in most guides, including those for lesson plans and other learning activities, as well as those providing inspirational and supportive content for CCE (see Table 3). In what follows, I provide illustrations and summaries of guides representing this problematization and its underlying assumptions, starting with those focused on cognitive learning.

Cognitive learning

The ambition to foster cognitive learning to motivate students to choose sustainable alternatives to their unsustainable behaviors is reflected in a document that provides inspirational content and that calls for education that fosters '[i]nsight into how individual lifestyle choices influence social, economic and environmental development […] [and the] [a]bility to acquire, assess and use information on the consequences of consumption especially on the environment' (Thoresen 2010, 25). The stress on cultivating this insight and ability mirrors the ABC assumption that drivers of behavior, in this case cognitive learning, should be employed to propel individual students, as agents of change, to give up their unsustainable behaviors and make sustainable choices.

The presumptions that cognitive drivers will influence individual choices and, thereby, turn students into agents of social change also emerge in documents with detailed instructions for lesson plans and other learning activities. They for example underpin the instructions for learning activities in two documents centered on so-called climate change challenge badges (FAO 2009, 2015), as indicated by this passage from the introduction of one of the documents:

> Climate change is a global problem but many of its causes are **due to individual lifestyle choices**. The challenge badge will raise awareness of how our everyday activities contribute to climate change […]. [–-] The badge will **motivate** the individual to **take actions** […] and encourage their local communities to become more environmentally-friendly (FAO 2009, 3, emphasis is original).

Not only is it underscored that individual lifestyle choices are primary causes of climate change, the passage also reflects the ABC assumption that awareness raising is a driver that can propel sustainable choices, in this case students' choices to become frontrunners of social change. This assumption underpins several instructions for learning activities in both these and other documents, as in those to facilitate knowledge and awareness of how consumption of everyday goods – such as different kinds of food, electronics, packaging and transports – emits greenhouse gases and depletes carbon sinks (e.g. British Council n.d.; FAO 2009, 2015; World's Largest Lesson n.d.-d, n.d.-e, n.d.-h). One example is an instruction for the learning activity 'Energetic Edibles', which focuses on fostering cognitive learning of students' food consumption based on the assumption that it will motivate them to change their dietary choices and become agents of change:

> Did you know that different foods take different amounts of energy to produce? […] Pick your favourite food and do some research to find out how much energy is used in its production. […] Do your findings make you want to change some eating habits? (FAO 2015, 111).

This ABC assumption, moreover, underpins guides that stress the importance to facilitate learning of students' and schools' carbon footprints to support and incite informed climate action (e.g. British Council n.d.; FAO 2015; Volz 2011). Under the theme 'Making a difference and finding solutions' in the education pack 'Climate4Classrooms', the following is stated in the background information of instructions to a learning activity:

> China has over one hundred million school students and if they and their partners around the world can be empowered to understand climate change and adopt sustainable practices their engagement could produce positive change on a vast scale. […] this pack provides links to on-line tools to help individual pupils and schools to work out in detail their emission levels or 'carbon footprints'. This allows for the measurement of any reduction in carbon emissions following a course of action (British Council n.d., 12).

In other words, the presumption is that cognitive learning of students' and schools' carbon footprints will propel students to take individual and collective actions that will motivate others to follow their example. This education should trigger students, as relatively autonomous agents, to abandon their unsustainable behaviors in favor of sustainable options and thereby become frontrunners for social change.

Socio-emotional learning

The ABC problematization is also represented in guides that reflect the aspiration to foster socio-emotional learning that changes students' attitudes, particularly through emotional triggers. For instance, concerning resilience to disaster risks (including climate risks), there are instructions for a lesson that has the ambition to '[…] develop students' creativity and empathy, which will in turn foster the attitudes that build up resilience' (UNESCO 2014b, 17). Reflecting the ABC presumptions of external drivers and of individuals as the agents of change, this lesson is oriented towards cultivating attitudes supporting sustainable choices.

CCE guides focused on promoting a sense of care and responsibility for the wellbeing of the environment are other examples representing the ABC problematization (FAO 2015, 2020; World's Largest Lesson n.d.-a), as in the instructions for the lesson 'Community Conversations for Climate Change':

> Ask students to close their eyes. Tell them you are going to say an emotion and you want them to imagine somewhere they would want to be when they're feeling that emotion. Go through a range of different emotions. […] Draw conclusions that many of the places we want to go to when we feel positive emotions, are special and need to be protected (World's Largest Lesson n.d.-a, 2).

Through a focus to foster positive emotions for the environment, these instructions reflect the ABC assumption that attitudinal shifts are important to propel students to choose to protect the environment.

Additional examples are instructions that depict injustices and unfair situations, such as those of climate refugees (FAO 2015; UNICEF n.d.), in order to trigger attitudinal changes in support of just climate actions (Selby and Kagawa 2013; Volz 2011). The lesson plan 'Climate Change Cartoons', having the objective '[t]o look at the place of cartoons in fostering the attitudes and dispositions for promoting social change and justice' (Selby and Kagawa 2013, 416 (414)), is a case in point. The assumption that attitudinal shifts will trigger individual and joined actions for a justice-oriented social transformation is central to this objective.

A final example are guides for promoting learning to overcome emotional barriers to sustainable choices (Selby and Kagawa 2013; World's Largest Lesson n.d.g), as in the lesson plan 'Climate Change Despair and Empowerment Sequence' that instructs teachers

> [t]o work primarily at an affective level by looking at personal responses to climate change [and] [t]o engage with feelings of despair, hopelessness and powerlessness in the face of climate change and work on translating those feelings into feelings of purposefulness and commitment to transformative action (Selby and Kagawa 2013, 443 (443)).

Students should thus learn to overcome emotional barriers and develop feelings that trigger them to become agents of transformative action. This clearly reflects the language of attitudinal drivers that characterizes the ABC, and the presumption that changed attitudes will incite individuals to alter their unsustainable behaviors.

Behavioral learning

The CCE guides reflecting the behavioral learning dimension focus on action competences for individual and collective climate actions. Among these are instructions for how teachers can facilitate lessons in which students learn to perform actions to raise awareness of climate impacts as well as share knowledge on climate change adaptation in their local communities. The former

include instructions to paint murals by flood-prone rivers to create public awareness of climate-related risks in those areas (UNESCO 2014a); to write and perform theater plays on the impacts of climate change (FAO 2015; UNESCO 2014a); and to create posters that portray the effects of climate change on everyday life situations (FAO 2015; Gibb 2016). The latter include instructions for actions through which students help improve the adaptive capacity in their local community (e.g.UNESCO 2010, 2014b), as in one that stresses that students should '[s]trengthen preparedness by extending to community members the skills, knowledge and attitudes about preparedness that have been developed at school […]' (UNESCO 2014b, 22). There are thus guides for both individual and collective climate actions, which through their focus on awareness raising, attitudes and knowledge dissemination reflect the ABC terminology to promote drivers that enable people to choose sustainable behaviors.

Additionally, there are guides for collective actions through which students should learn to support and motivate their families and community to choose to reduce greenhouse gas emissions (British Council n.d.; FAO 2009, 2015; UNICEF & Alliance of Youth CEOs n.d.; Volz 2011). One example is a guide stressing the objective of facilitating learning of how students can '[d]eliver key messages about climate-friendly habits at school or in the community in a creative way' (Volz 2011, 66) by creating and displaying posters or sculptures promoting awareness of why consumption habits need to change (Volz 2011). Another example is an instruction on how students can become advocates for reduced greenhouse gas emissions through information campaigns for leaders at their school and local government (British Council n.d.). These guides are thus focused on promoting students' know-how for collective actions. However, these actions are centered on raising awareness of unsustainable behaviors and that these need to change. They thereby mirror the ABC assumption that awareness is a driver of sustainable choices. Importantly, these collective actions are not based on analyses of how the socio-technical arrangements that reproduce unsustainable practices could be unmade and replaced, as would be the case from a practice-theory perspective.

Representations of the ABC problematization are also made in guides for fostering behavioral learning of individual actions, thereby making students frontrunners of social change. Among these are guides to facilitate education that trains and challenges students to make everyday life choices that reduce their greenhouse gas emissions (e.g. British Council n.d.; FAO 2009; UNESCO 2010; World's Largest Lesson n.d.-d, n.d.-h). Examples include choices concerning modes of transportation (e.g. using public transportation more frequently instead of car travels), personal hygiene (e.g. taking shorter showers), possessions (e.g. switching cellphones less often) and food (e.g. cooking vegetarian meals) (FAO 2009, 2015; UNICEF & Alliance of Youth CEOs n.d.; World's Largest Lesson n.d.-f). The following instruction is a good illustration of this behavioral focus:

> Consider how your daily life has an impact on your environment. […] Make a list of the ways how [sic] you can reduce the impact you have and the energy you use. Make a plan and follow your plan for a month. Then share your experience with your class […] and encourage them to follow your example (FAO 2009, 9).

In the language of the ABC, students should be driven to choose sustainable alternatives to their unsustainable behaviors and, through their example, become agents of transformation.

Representations of the practice-theory problematization and assumptions

The problematization in the CCE guides that correspond to practice theories can be described as: ignorance of how attachments to practices are reproduced. It is represented in two guides that reflect the cognitive learning dimension. Importantly, these guides lack a focus on how needs, desires and other attachments to unsustainable practices can be unmade and replaced.

One of the representations of this problematization is from an inspirational document that lists competences needed for education for sustainable consumption, among which are the '[a]

bility to recognize, decode and reflect critically upon messages from the media and the market […] [and] [k]nowledge of social networks responsible for shaping consumption patterns (peer pressure, status, etc) [sic]' (Thoresen 2010, 25). These cognitive competences reflect the notion that students need to learn to criticize and question the ways in which needs and desires for unsustainable consumption practices are reproduced. To use the language of practice theories, the focus is on how these practices are reproduced through socio-technical arrangements, which here include the market, the media, peer pressure, status, etc.

The other guide is the lesson plan 'Redesigning Plastic Packaging', which encompasses instructions that represent the practice-theory problematization. One of its learning objectives is to foster understanding of the '[…] systemic challenges around plastic packaging […]' (World's Largest Lesson n.d.-i, 1). This entails a focus on how needs for plastics emerge and persist:

> […] plastics are easily incorporated into many skin and hair care products. Plastic keeps your coif in that perfect Flock of Seagulls swoop, makes your waterproof mascara waterproof, and suspends those little beads in your eye gel. Speaking of beads, tiny polyethylene spheres are frequently used in exfoliating scrubs. The products are generally marketed as 'extra gentle', since they are perfectly round and do not damage the skin's surface […] Q: Why do companies use plastics in all these products? (World's Largest Lesson n.d.-i, 3).

This passage reflects the ambition to foster cognitive learning of how needs for unsustainable uses of plastics in production practices are reproduced through socio-technical arrangements that include interactions between particular properties of plastics on the one hand, and fashion, styling and beauty ideals on the other. Accordingly, it represents the practice-theory problematization and its assumptions that unsustainable practices persist due to strong attachments that are reproduced by particular socio-technical arrangements.

Concluding discussion

The analysis shows that the CCE guides are dominated by a problematization of unsustainable actions that corresponds to the ABC. Practice-theory scholars' claim that policies generally are underpinned by ABC theories, and not practice theories (e.g. Royston, Selby, and Shove 2018; Shove 2010a, 2014), is thus supported regarding these CCE guides. However, as discussed below, other critical claims put forth by practice-theory scholars, which concern the possibilities and limitations of the ABC, are only partially supported. On the one hand, many guides represent the ABC problematization in ways that constitute more possibilities to empower political engagement than some of the critique of the ABC would suggest. On the other hand, the ABC dominance nevertheless imposes significant limitations on the guides' empowering potential, in line with other critical claims. Below, I first discuss the possibilities and limitations of the guides in relation the former critique and then move on to the latter. Subsequently, I discuss how the current limitations could be reduced.

First of all, the analysis of the guides do not support practice theory scholars' claims that ABC theories generally position citizens as consumers (Batel et al. 2016; Shove 2010a) and thereby depoliticize the meaning of sustainable actions by relegating these to the private sphere of consumption (Batel et al. 2016). On the contrary, many guides that represent the ABC problematization set the educational focus on knowledge for politically-oriented actions in the public sphere. One example of this is the proposal to use measurements of carbon footprints as a means to inform and incite school-based actions (cognitive learning) (British Council n.d.). Another is the instructions on how cartoons can be employed '[…] in fostering the attitudes and dispositions for promoting social change and justice' (socio-emotional learning) (Selby and Kagawa 2013, 416 [414]). Two final examples are CCE instructions for collective actions, such as performance of theater plays to create awareness of climate-related risks and the need for adaptation (FAO 2015; UNESCO 2014a), and information campaigns to promote awareness of

the need to reduce greenhouse gas emissions among local decision makers (British Council n.d.). Although, these guides represent the ABC problematization of unsustainable actions, they reflect the democratically oriented approaches to ESD. Namely, they set the focus on fostering learning for individual and collective climate actions in the public sphere. The content and meaning of these actions are, moreover, opened to different interpretations and negotiation (cf. Mogren and Gericke 2017; Nikel 2007; Öhman and Östman 2019). In this sense, students are positioned as political agents. Through CCE, they should be encouraged and enabled to become frontrunners who choose to act for social change in the public sphere.

Indeed, many guides that represent the ABC problematization also fit the description of practice-theory scholars' aforementioned critique, such as those designed to promote awareness (cognitive learning) as a way to change '[…] individual lifestyle choices […]' (FAO 2009, 3) and skills (behavioral learning) to change consumption-behaviors related to personal hygiene, technological devises and food (see FAO 2009, 2015; UNICEF & Alliance of Youth CEOs n.d.; World's Largest Lesson n.d.-f). These guides mirror the technocratic approaches to ESD through their focus on skills for particular consumer behaviors (see Mogren and Gericke 2017; Nikel 2007; Öhman and Östman 2019). Accordingly, they clearly position students as consumers and climate action as a matter of individual consumption. My point is that the ABC problematization is represented in ways that reflect both democratic and technocratic approaches to ESD. In the former, it is employed in ways that constitute certain possibilities for political engagement.

There is, however, another critique of the behavioral focus constituted through the ABC, which is fully supported by my findings. Namely, scholars of both practice theory (Batel et al. 2016; Shove 2010a) and critical pedagogy (Bellino and Adams 2017) have argued that the behavior-orientation excludes systemic analysis and critique, and thus fails to promote political engagement with the systemic roots of unsustainable actions.

First of all, the guides that represent the ABC problematization constitute the students as relatively autonomous individuals that, through CCE, should become frontrunners of sustainable actions. The focus is to inspire and support students to perform individual and collective actions that drive themselves and others to choose alternative behaviors and lifestyles over those that currently form part of their everyday lives. This, moreover, frames the responsibility for unsustainable actions as a matter of individual choice. If students were to fail to make unsustainable choices in spite of the knowledge, emotional drivers and skills provided, the behavior-oriented focus implies that this would be the result of their inability to choose properly. Importantly, the asymmetric relations of power and agency, playing a significant part in reproducing unsustainable forms of organization, such as those reproducing particular modes of production and exchange (see Bell 2015; Hornborg 2015b; Jorgensen and Givens 2013), escape scrutiny, responsibility and blame. In this sense, I argue that the emphasis of these guides is on the symptoms (unsustainable choices of behavior) rather than the systemic causes (unsustainable modes of organization).

In line with practice-theory scholars' critique of the ABC (Batel et al. 2016; Shove 2010a), my findings thus demonstrate that the ABC problematization creates a significant blind spot in all guides that represent it: the absence of education to cultivate knowledge that empowers students' abilities to analyze, problematize and confront the systemic causes of unsustainable actions. Hence, this problematization imposes considerable limits on the CCE guides' potential to build capacity for a democratically oriented ESD. Guides based on this problematization neither provide instructions on how to facilitate education that empowers students to understand and tackle systemic causes of unsustainable actions, nor do they provide ideas on how responses to such actions could be politicized beyond a focus on unsustainable behaviors. Accordingly, the ABC problematization for instance reduces the possibility to cultivate students' 'critical consciousness', as stressed in critical pedagogy, since this is aimed at '[…] 'problematizing' the world to enable action upon it' (Oberman and Sainz 2021, 74).

Considering that nearly all guides have this blind spot, their potential to support a democratically oriented ESD that empowers political engagement with unsustainable actions is significantly

limited. To reduce these limitations, I suggest that those that develop CCE guides as well as researchers that seek to develop and promote alternatives to behavior-oriented ESD could draw on practice theories. The latter could for instance use practice theories to develop ESD research on transformative learning that, influenced by Freire, stresses the need for a critical systemic focus (see Balsiger et al. 2017; Bellino and Adams 2017) and research that, influenced by Zizek and Lacan, suggests that bad practices provide important learning opportunities (see Lysgaard 2018).

The two CCE guides that represent the problematization and underlying assumptions of practice theories provide a glimpse of what this alternative could entail in ESD. Namely, these guides focus on developing students' capabilities to understand and critically reflect on how unsustainable practices are reproduced through diverse socio-technical arrangements, such as how unsustainable consumption patterns are reproduced through complex relations between the market, the media, peer pressure, status, etc. (Thoresen 2010).

These guides are, however, limited to a focus on cognitive learning of how unsustainable practice are reproduced, which corresponds to the academic critique that practice theories provide few insights on how social change can come about (Batel et al. 2016).

There is nevertheless practice-theory research that highlights possibilities for social change. Insights from this research could be developed further in future research as well as employed and adapted by those that develop teaching guides, especially to enable learning beyond the cognitive dimension. One example is a study by Wilhite (2013) that demonstrates how different cultures provide particular opportunities for practice-oriented change. Another is Batel et al.'s (2016) suggestion to combine so-called social representations theory with practice theories to promote agency for practice-oriented change. A final example is the aforementioned study by Jørgensen, Madsen, and Laessøe (2018), which provides ideas on how collective school-based actions, grounded on a practice-theory perspective, could come about.

Researchers and policy-makers could draw on these studies to develop practice-oriented ESD that also includes action competences (corresponding to 'behavioral learning') and socio-emotional learning. The school-based actions, suggested by Jørgensen, Madsen, and Laessøe (2018), would for instance enable a form of action-competence learning. Discussions of strong and weak cultural attachments to unsustainable practices and how the weak attachments could be unmade, which reflects Wilhite (2013), could be an example of how socio-emotional learning can be enacted. Importantly, this would create possibilities for an ESD through which students also enact practice-oriented change, not only learn about how unsustainable practices are reproduced.

To conclude, this study points to the importance and possibilities of developing a CCE and, more broadly, ESD that empowers students to *also* problematize and challenge the systemic modes of organization that reproduce unsustainable actions. It is, however, not suggested that this systemic focus should replace the ABC perspective. In the spirit of democratic approaches to ESD, students should gain knowledge and understanding of both, since this dual perspective could empower political engagement in which they problematize and challenge their own and others' unsustainable actions from different viewpoints. Such dual perspective would broaden the horizon beyond the focus on behavioral change and provide additional possibilities for ESD to contribute to a '[…] shift in our lifestyles and a transformation of the way we think and act' (UNESCO 2017, 1).

Note

1. I use ESD as an umbrella term for the different but nevertheless overlapping fields of ESD, environmental and sustainability education (ESE) and environmental education (EE), which include CCE.

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