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## Transformative expectations in research on environmental and sustainability education

**Monica Carlsson**

Danish School of Education, Aarhus University, Denmark

### **Abstract**

*While education in general is seen as a crucial means for creating social change and transformation, environmental and sustainability education (ESE) is especially subject to transformative expectations in tackling escalating societal problems such as the lack of sustainable development. This article explores how ESE research addresses transformative expectations and justifies the knowledge it produces and its methods. It first explores examples of this within three different categories focusing on: transformative teaching in higher education, systemic transformative change in higher education institutions, and transformative change agency formation in community settings. Thereafter follows a discussion of the interfaces between the examples when it comes to their ontological, epistemological and methodological stances. The analysis illustrates different ways of conceptualizing transformative expectations, drawing on terms such as 'rethinking', 'revitalizing', 'disrupting', 'reframing' and 'transgressing'. It furthermore highlights two different foundations for methodological justifications in ESE research addressing transformative expectations: working for change within existing social*

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*frameworks (adaptation), or seeking improvement by transgressing norms (disruption). It is pointing out that such methodological justifications are likely to differ in terms of how they address change depending on whether the research is conducted within or outside formal education settings.*

*Keywords: transformative expectations, ESE research, justifications of knowledge and methods*

## **Introduction**

Rethinking education. Towards a global common good? (United Nations Educational, Scientific, and Cultural Organization [UNESCO], 2015), and Transforming our world: The 2030 agenda for sustainable development (United Nations [UN], 2015) are urgent calls for a transition toward more sustainable societies, positing education as a crucial means for social change and transformation. Education has always been seen as a means for creating social change, while the notions of social transition and transformation above underline that education is expected to play a crucial part in addressing sustainability challenges (environmental, social and economic) in what are potentially major changes to existing social systems and practices. A central question in critical enquiry addressing these calls is, in these times of the role-back of the welfare state, where education is reshaped through the language of edu-business (the privatization of education as a common good), how can we reimagine education as transformation for the common good? (Lotz -Sisitka, 2017). Given these contemporary realities and transitions in education, the calls can be seen as a wake-up call for educational research with transformative ambitions. “The times, they are a-changin’” as Bob Dylan sings – in other words, “Hurry up people, the clock's a-ticking!”

This is an exploratory article, presenting examples from qualitative research on environmental and sustainability education (ESE) explicitly addressing transformative expectations and providing insight into how these expectations are formulated and how the knowledge it produces and its methods are justified. The overall methodological approach in

the analysis draws inspiration from what Carter and Little (2007) characterize as an “observer-methodologist” position, describing methodology as justifications for methods, and as entangled with epistemology. In selecting examples from the research, the focus is on journal articles (rather than all scientific publications). The selected examples are in no way exhaustive in relation to the large body of research implicitly and explicitly addressing transformative perspectives in ESE research. However, the wide range of ontological, epistemological and methodological perspectives they present is sufficient for this article’s exploratory purpose.

The call for this special issue on transmethodology (Khawaja and Kousholt, 2021), pointed out that there can be many different ways of working “transmethodologically”, while noting that doing so involves working across boundaries in theory and practice and escaping existing research paradigms. With the aim of contextualizing transformative expectations in ESE research, this article takes its starting point in a conceptualization of overall assumptions regarding which issues to address in critical inquiry in education, exemplifying how these are influencing justifications for research in three critical research traditions within this field. Different conceptualizations of transformative expectations within ESE, as well as different ontological, epistemological and methodological positions in research within this field, can be seen as part of the process of establishing boundaries. The article draws on inspiration from Akkerman and Bakker’s explorative study on boundaries in research practice, defining boundaries as “sociocultural differences leading to discontinuities in action and interaction” (2011, p. 152). The increasing interest in exploring boundaries in research can be seen as a result of growing support within critical social theory for attempts to challenge unsustainable hegemony by focusing on the marginal and the decentred as alternatives to discourses of power of the center (Akkerman and Bakker, 2011, p. 135). The article, drawing on the idea of the potentiality of using demarcations of boundaries to explore justifications for research,

illustrates how references to different research traditions can be seen as a part of a process of both establishing and crossing boundaries. The fact that I draw inspiration from these traditions should not be regarded as an attempt to consolidate specific research traditions, or to reduce the plurality in the examples from ESE research, but as an engagement with boundaries. Engagement with boundaries in logics-in-use in research and attempts to identify one's own and/or others' perspectives and positions in a particular research field can help us to "see ourselves within our own terrain" (Hart, 2013, p. 507) and be part of the process of transgressing the boundaries of existing research paradigms.

## **Contextualizing transformative expectations in ESE research**

In this section, I will outline three critical research traditions within the field of ESE that explicitly address transformative expectations. First, a clarification of the ESE (environmental and sustainability education) term is needed as it is not a homogeneous field, but can be seen as a collection of different conceptualizations of 'ecological', 'environmental', 'climate change' and 'sustainability' education, addressing learning for change and transformation in different ways (Jucker & Mathar, 2014, Vare & Scott, 2007). The term sustainability education is used in many different forms ('education for/about/from/as sustainable development'), and much energy has been expended debating EE (environmental education) versus ESD (education for sustainable development). This debate is rooted in what has been described as the ambiguity of the term sustainable development. Stables (2013), for example, points out that the term can be described as an oxymoron, composed of two contradictory concepts, while Kopnina (2012) argues that ESD, with its focus on human welfare, equality, rights and the fair distribution of resources, represents a shift away from EE's focus on 'the environment'. Meanwhile, Mckeown and Hopkins (2007) highlight the potential of ESD's transdisciplinary approach to help education

fulfil its role of moving communities and nations toward a more sustainable future, underlining the need to address transboundary/transdisciplinary educational issues, such as the education of girls and women and education for and about refugees.<sup>1</sup>

Apple (2016) points out that a robust understanding of critical education involves a commitment toward social transformation based in a realization of that issues surrounding the politics of redistribution (exploitative economic processes and dynamics) and the politics of recognition (cultural struggles against domination and struggles over identity) need to be jointly considered. The outline below draws on Lotz-Sisitka et al.'s (2013) examination of the ontological, epistemological and methodological stances in three critical research traditions within the field of ESE: critical research, post-structural research and critical realist research. These traditions address transformative expectations and issues rooted in the dynamics of power and inequality in different ways, and assign research and researchers a role as active and engaged partners in processes of emancipatory change and transformation.

- In critical research, knowledge and issues of equity and power are seen as closely intertwined; such research can be characterized by its emphasis on that interpretations of (material or social) reality can be controlled by human relations, and on the role of values and power in shaping what counts as knowledge. The aims of understanding the practices and effects of power and inequality and of empowering people to transform environmental and social conditions are foregrounded in methodological approaches. Two intermeshed streams of critical theory, especially influential in action research methodologies within ESE, have their foundation in imperatives to facilitate emancipatory change and a democratizing shift to participatory inclusion (O'Donoghue, 2018).

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<sup>1</sup> The combination of environmental and sustainability education in the term ESE (used in the European Educational Research Association's ESER research network) can be seen as an attempt to move beyond the EE versus ESD debate (see <https://eera-ecer.de/networks/30-environmental-and-sustainability-education-research-eser/>).

- In post-structural research, the focus shifts from external politics to the multiple representations of reality constituted in language and discourse. Events are here understood in terms of powerful discourses that constitute social reality, with research drawing on methodologies of deconstruction that reveal how dominant interests preserve social inequality through language and discourse. Russell et al.'s (2017) article "Fatties cause global warming" can be used to exemplify this perspective, describing the interplay between the discourses in ESE practice and young people's complex, embodied identity positions and arguing that obesity prevention discourses have joined forces with climate change prevention discourses to fuel weight-based oppression.

- Critical realist research moves away from this focus on discourse, arguing that not everything can be reduced to language as phenomena and practices are both materially and discursively construed. Drawing on Bhaskar's 'depth ontology of the real', events and experiences are understood as influenced by underlying generative mechanisms that may not always be visible, and the nature of reality as transitive, where phenomena, although they may not (yet) be actualized, can be perceived as real (Lotz-Sisitka and Price, 2016)). The overall methodological approach to critical inquiry is described as explanatory critique that seeks to identify emancipatory options for hindering causal factors constraining actions, or enabling actions. Temper et al.'s (2019) study, described as a 'guide' for the theoretically informed activist scholar, provides an example of this approach, foregrounding principles of decolonizing research procedures.

The literature in the field of ESE research points out that methodology should not be seen as entirely fixed by the boundaries of research traditions and methodological frameworks as it is a broad and emerging (young) field of research (Lotz-Sisitka et al., 2013; Hart, 2013). The analysis below is inspired by the above outline of the different research traditions. However, the intention is not to uphold fixed boundaries between research

traditions, but to use this outline as a tool for exploring the plurality of justifications for research and how these justifications are both linked to and transcend such boundaries.

## **Methodological and analytical framework**

I will begin by describing the overall methodological approach, before outlining the article search procedure and selection process, and the analytical approach. The overall methodological approach in the analysis draws inspiration from what Carter and Little (2007) describe as an “observer-methodologist” position, arguing that it is necessary to also engage with epistemology when observing methodologies as epistemology justifies the knowledge produced and guides methodology. Hart (2013) likewise argues researchers need to engage with both epistemological and methodological perspectives in order to understand each other, despite, or perhaps through, their differences. Carter and Little describe methodology as the logic justifying methods in data generation and analysis. In the exploration of the many ways of formulating transformative expectation and justifications of knowledge development in the selected research examples, I’m focusing on what they formulate as the “reconstructed logic-in-use”, i.e. researchers’ explicit attempts to articulate, analyse and evaluate logics-in-use in research (Carter and Little, 2007, pp. 1317-8). This includes seeking insight into which aspects of change and transformation are addressed in these expectations. Ontology, i.e. questions concerning the nature of (material or social) reality, is excluded from Carter and Little’s account, with the argument that researchers “generally treat social concepts as if they are real enough to be named, investigated, and analyzed” (Carter and Little, 2007, p. 1326). However, and as they point out, this is a potential limitation, as ontology can be perceived as a foundational element of qualitative research. In the article, I explore arguments regarding the need for a certain critical approach, as this can be considered as part of an ontological stance in research, related to understandings of the nature of reality. I furthermore discuss

examples where authors implicitly or explicitly engage with and present ontological stances as a foundation for justifications of knowledge and methods in research.

### ***Article search procedure and selection process***

ESE research is an emerging research field that has expanded radically over the last 20 years, with a corresponding rise in the volume of publications such as journals and handbooks. ERIC lists more than 20 journals within this area, as well as a number of journals with a broader educational focus that often address ESE topics. An initial search in ERIC aimed at locating research on ESE based on three single keywords - “environmental AND sustainability AND education” - found 1797 journal articles published during the last 20 years. More than one third of these are from the last 5 years, mirroring the continuing growth in ESE research. To facilitate the selection of articles that could provide examples of transformative expectations in ESE research, a second, more focused search was performed covering the same 20-year period as the initial search. The intention was to provide a retrospective account of ESE research articulating transformative expectations, rather than to conduct a comprehensive and exhaustive search and review of literature. The first part of this focused search was implemented to locate articles addressing transformative expectations in ESE research, adding “transformative”, “transformation”, “transformative approaches” and “transformative methodology” to the terms used in the initial search. This resulted in 153 articles. In the second part of the search, to give a better overview, journal filters were applied, with a continued screening of articles in each of the main journals identified in the search based on titles, keywords and abstracts. This initial screening narrowed the selection to 40 articles. After a thorough reading of these articles, assessing how clearly transformative expectations and justifications of knowledge and methods in research were described, I selected 8 articles, presented in the overview below. Considering the interfaces between the articles selected for the analysis, Wals is referenced in 5 of the other articles, regarded as an



‘early adopter’ and developer of transformative learning theory in the field of ESE, while Lotz-Sisitka et al(2017). and Macintyre and Chaves’s (2017) articles are part of the same research project – the Transgressive-learning project (<https://transgressivelearning.org/>).<sup>2</sup>

**Table 1: Overview of articles included in the analysis**

<p>Adomssent, M., Godemann, J. &amp; Michelsen, G. (2007). Transferability of Approaches to Sustainable Development at Universities as a Challenge. <i>International Journal of Sustainability in Higher Education</i>, 8(4), 385-402.</p> <p>Blake, J. Sterling, S. &amp; Goodson, I. (2013). Transformative Learning for a Sustainable Future: An Exploration of Pedagogies for Change at an Alternative College. <i>Sustainability</i>, 5, 5347-5372.</p> <p>Lange, E. (2018). Transforming Transformative Education through Ontologies of Relationality. <i>Journal of Transformative Education</i>, 16(4), 280-301.</p> <p>Lotz-Sisitka, H., Mukute, M., Chikunda, C., Baloi, B. &amp; Pesanayi, T. (2017). Transgressing the Norm: Transformative Agency in Community-Based Learning for Sustainability in Southern African Contexts. <i>International Review of Education</i>, 63, 897–914.</p> <p>Macintyre, T. &amp; Chaves, M. (2017). Balancing the Warrior and the Empathic Activist: The Role of the Transgressive Researcher in Environmental Education. <i>Canadian Journal of Environmental Education</i>, 22, 80-96.</p> <p>Moyer, J.M., Sinclair, A.J. &amp; Quinn, L. (2016). Transitioning to a More Sustainable Society: Unpacking the Role of the Learning–Action Nexus. <i>International Journal of Lifelong Education</i>, 35(3), 313-329.</p>
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<sup>2</sup> The articles furthermore draw on research from many different geographic areas. 4 are presenting research from North and West Europe (Adomssent et al., Lange, Ojala, and Wals), 1 from UK (Blake et al.), 1 from South Africa (Lotz-Sisitka et al.), 1 from Latin-America (Macintyre and Chaves), and 1 from Kenya/Canada (Moyer et al.).

Ojala, M. (2016). Facing Anxiety in Climate Change Education: From Therapeutic Practice to Hopeful Transgressive Learning. *Canadian Journal of Environmental Education*, 21, 41-56.

Wals, A.E.J. (2010). Mirroring, Gestaltswitching and Transformative Social Learning: Stepping Stones for Developing Sustainability Competence. *International Journal of Sustainability in Higher Education*, 11(4), 380-390.

Table 1: Overview of the selected 8 articles included in the analysis

### ***The analytical approach***

When interpreting justifications of knowledge and methods in the selected examples of ESE research, I draw inspiration from the understandings of ontology, epistemology and methodology in the three different research orientations outlined above. Due to research method conventions, scientific articles may provide a clear and coherent description of these justifications, but such descriptions might also be characterized by ambiguity, difference and a diversity of views. Dillon and Wals (2006) highlight ESE research's tendency to describe methods without necessarily articulating methodology, while justifications of knowledge drawing on axiological perspectives are more in focus. Thus, determining justifications for research will likely require what Berlin has described as 'trying to pin down a butterfly' - "too many, too swift, too intermingled to be caught and pinned down and labeled like so many individual butterflies ..." (Berlin, 1996, p. 27 in Schwandt, 2005, p. 325). This requires an approach that engages with "a hermeneutic process of noting, interpreting, moving between, and reinterpreting different cues, for thereby indicating assumptions not directly expressed" (Alvesson and Sandberg, 2014, p. 5). One possible way of strengthening reflexivity in this process involves consideration of one's position in relation to the object of inquiry, different research orientations and choice of theories represented in the literature (Alvesson and Sandberg, 2014; Berger, 2015; Carter and Little, 2007). As an example, I considered

including interpretivism/hermeneutic research as a separate category in the outline of critical research traditions above. However, hermeneutics, an approach centred on the identification and analysis of people's constructions and interpretations of reality to extend understandings, can also be seen as a step in analytical approaches within the critical research tradition (Alvesson and Sandberg, 2014; Freeman, 2017). I have therefore, for the purpose of this article, chosen to regard the use of hermeneutics as part of critical research methodology. The focus on critical research traditions is based on an ethical stance, attributing value to critical research's engagement in processes of learning, social change and transformation. This stance is rooted in my research practice and socialization within a critical research tradition, inspired by theories of action, participation and change agency formation (see e.g. Carlsson and Sanders, 2008; Carlsson, 2018), and in my practice of teaching sustainability education courses in higher education.

Although educational research has mainly studied transformation by focusing on boundaries in relation to (other) professional practices (such as science, technology design, and teaching), the notion that transformation takes place at boundaries can also be applied when reflecting on researchers' attempts to articulate logics-in-use in research. I'm drawing on the idea of the potentiality of using demarcations of boundaries in the categorization of aspects of transformation and change from the examples of research, and in the discussion of ontological, epistemological and methodological stances in these examples. Boundary crossing in research refers to situations when researchers might search for ways to connect and mobilize across divisions so as to avoid fragmentation and increase the potential for knowledge development (Akkerman and Bakker, 2011). One such example is when we "enter onto territory in which we are unfamiliar" and "face the challenge of negotiating and combining ingredients from different contexts to achieve hybrid situations" (Suchman respectively Engeström et al. in Akkerman and Bakker, 2011, p. 134). Claims regarding the

potentials of boundaries are an explicit part of the learning theories developed by Wenger and by Engeström. In Engeström's theory of expansive learning, boundaries, in the form of contradictions between activity systems, are seen as vital forces for change and development, while Wenger argues that learning at the boundaries is necessary if communities of practice do not want to lose their dynamism and become stale (as discussed in Akkerman and Bakker, 2011, p. 136). Contradictions and differences are thus not regarded as problematic, or something that should be overcome or avoided, but as valuable, carrying the potential for learning.

## **Analysis**

The mapping of transformative expectations during the search and selection process enabled a broad categorization of different formulations that will be used to structure the analysis of the research examples. The three resulting categories are based on an assessment of which aspects of transformation and change that are in focus; transformative teaching in higher education, systemic transformative change in higher education institutions, and transformative change agency formation in community settings. The categories should not be seen as mutually exclusive; there are multiple connections between them, including a shared focus on the role of learning in transformation.

1. "Transformative teaching in higher education": addressing education principles, teaching approaches and methodologies, and students' learning.
2. "Systemic transformative change in higher education institutions": addressing a whole system response and a systemic transformative approach to sustainable development, focusing on the relation between policy, management, curriculum and pedagogies.
3. "Transformative change agency formation in community settings": addressing the relation between individual, collective, institution and society in processes of change agency formation.

### ***Transformative teaching in higher education***

Wals, Lange and Ojala (2016) describe their articles as primarily conceptual/theoretical, articulating educational principles in sustainability education within higher education based on the concepts of transformative and transgressive learning, drawing on cases from and reflection on their own teaching practice in higher education to support their reasoning. Wals emphasizes the educational principle of ‘transformative disruptions’ originating in students’ “own problematization and critical analyses of everyday events or products” (Wals, 2010, p. 386). This conceptualization resonates with critical thinking as an element of emancipatory education, and with the imperative in critical research to facilitate emancipatory change. Lange underlines ‘process thinking’ as an educational principle, defined as “a framework for thinking about transformation and how culture and habits of thought can make some things visible and ignore or never see other things, to open up possibilities or foreclose them” (Lange, 2018, p. 290). This account can be seen as aligned with the methodological approach of explanatory critique in the critical realist research tradition, aimed at identifying emancipatory options. The jumping-off point for the article by Ojala is a critique of Mezirow-based descriptions of transformative learning. Ojala (2016) emphasizes the role of emotions, arguing that it is necessary “to show that if aiming for transgressive learning and transformation, it is not enough to disrupt unsustainable cognition/thinking, norms, and practices; there is also a need to include critical emotional awareness and to disrupt unsustainable emotion-regulation patterns” (p. 42). The understanding of emotions as discursive practices, can be seen as linked to an epistemological stance in poststructural research regarding the value of addressing powerful discourses that constitute social reality. The reference to transgression, as “the practical confrontation of different power/knowledge constellations in order to show that things do not have to be the way they currently are” (Ojala, 2016, p. 48 quoting Biesta, 2013), articulates a perspective on

transformation as learning that takes place through reflections on the difference between what is and what could be.

Wals refers to social learning as “learning by mirroring one’s own ideas, views, values, and perspectives with those of others” (2010 p. 385), based on the assumption that people learn more from each other when they are different from one another than when they are like-minded, provided there is social cohesion in the group. The conceptualization of mirroring, and the description of ‘transformative’ as “a shift of switch to a new way of being and seeing” (p. 380) (switching back and forth between different mind-sets), indicates an ontological understanding where the focus of transformative learning is on the individual. His account of educational principles seems to have origins in a perspective on transformation as learning that takes place through a process of raising awareness by acknowledging differences in axiological perspectives on sustainability issues, following the tradition of critical consciousness-raising as means to facilitate emancipatory change in critical pedagogy and research. From a foundation in an onto-epistemological approach, Lange argues that the relational turn has remained somewhat unexplored in sustainability education, offering possibilities for “revitalizing the field” of transformative learning theory (p. 280). She points out that, in a relational ontology, transformative learning would attend to nested systems (ecological, human, social) and the dynamics of the whole, rather than merely the worldview of individuals, indicating a foundation in a critical realist ontological stance where a phenomena does not necessary have to be visible to be perceived as real. Ojala (2016) draws on theoretical argumentation, student narratives and self-reflective discourses analysing her own experiences teaching climate change education in higher education to address transgressive learning and transformation. This approach seems founded in a hermeneutic/interpretive research tradition emphasizing the value of interpretations of reality and self-reflecting discourses (Ertl et al., 2015), while also drawing on a description of

emotions as discourses and tools of governance, in consonance with post-structural understandings of the multiple representations of reality.

Wals describes the role of his research in terms of its potential “to help teachers of university courses in re-designing their educational processes with sustainability competence in mind” (p. 380). This formulation, and the demonstration of how deconstructing a “Happy Meal” can be a transformative teaching activity, seems to originate in an understanding where the role of research is to support deliberations in educational practice. Lange describes the role of her research as to “reframe our understandings of transformative education, particularly toward socially just and regenerative cultures, completing the work of unfinished justice and climate movements” (p. 280). Providing opportunities for students to name the systems they are nested within, their positionality and the porous boundaries between systems, and to experience these connectivities, is attributed a special potentiality for transformative learning. Meanwhile, Ojala (2016) addresses the role of research in supporting deliberations in educational practice development. She suggests how critical awareness of emotions can be addressed in climate change education, pointing out that, when focusing on how these emotions are coped with and regulated, “a whole new network of power relations opens up for scrutiny” (p. 52).

### ***Systemic transformative change in higher education institutions***

The next two articles focus on the development of sustainable institutional practices in university and college settings, arguing in favour of a whole system response and a systemic transformative approach to sustainable development. In both articles, higher education is characterized as a system comprised of many subsystems, where the potentials and barriers in creating a space for transformative learning lie in the ability to navigate in relation to external forces or systems (such as managerialism, competition and accountability). Blake et al. (2013) point out that “transformative learning requires a whole system response, valuing a

participative, collaborative and explorative approach to the design and methodology of learning” (p. 5370). They argue for the need to address “the type of learning that is consistent with and helps manifest individual, organizational and social change towards more sustainable practices” (p. 5348). Their underlining of the learning potential in ‘seeing things differently’, quoting Bateson’s definition of epistemic learning, “seeing our worldview rather than seeing with our worldview” (p. 5352), can be seen as a reference to contextual reflexivity in knowledge development, understanding and respecting other worldviews and realities. Adomssent et al. (2007) suggest that a systemic transformative approach is indispensable, encompassing the strategic relationships between sustainability fields of action. They justify their study in the need for “exploring and testing potentials/capabilities for sustainable development of a single institution (...) and making this kind of development transferable to other universities” (p. 385).

Both articles draw on a case study design. In Adomssent et al. (2007), each sustainability field of action (management, research, teaching, etc.) is explored as a case, based on a survey of representatives from each of these fields focusing on their strategic relationships and synergies as intertwined subsystems. The case-based design and explanatory system analysis is justified by it being “essential to process partial findings on key areas of university activity in such manner that they present as many openings for transfer as possible” (p. 387). This can be interpreted as a methodological stance seeking to explore the broader mechanisms at work in a specific setting that can contribute with insights into what works. Blake et al. describe their analytical approach in their methodology as “based upon an explicitly interpretive research paradigm (...), essentially about understanding participants’ subjective experiences in a particular context” (p. 5350). They argue in favour of this approach with reference to the deliberative purpose of interpretive research, drawing on hermeneutics to extend understandings. The systemic methodological



approach in both studies draws on a perspective on transformative change as something that takes place through experimentation and navigation in social systems. The justifications of both methodologies seems to be rooted in assumptions of that institutional transformative change requires an adaptive approach, i.e. focusing more on continuous than disruptive change. Blake et al. address systemic transformative change based on a holistic assumption that different fields of action, the perspectives of different actors and change on different levels can be integrated into broader ways of thinking about transformation toward more sustainable practices. Adomssent et al. (2007) is describing transformative processes as a foundation for an optimistic view that shapes a conceivable future within the scope of the normative, orienting paradigm of sustainable development.

Addressing the role of research, Adomssent et al. (2007) emphasize the value of research-evidence-informed development of sustainable institutional practices in university settings, while Blake et al. underline the relevance of including different accounts of knowledge construction and different levels of learning in processes aimed at implementing sustainable development practices in universities.

### ***Transformative change agency formation in community settings***

The last three articles address change and transformation in community settings, drawing on concepts of transgressive, expansive and transformative learning and agency. Lotz-Sisitka et al. (2017) argue that there has been little exploration of how learning processes in ESE shape collective expressions of transformative agency, and that there is a need to explore the potential of education to contribute to reframing processes via norm transgressions. Their conceptualization of transformative agency as both materially and discursively constructed indicates the study's roots in the critical realist research tradition. Macintyre and Chaves (2017) suggest that, with the increasing interest in radical learning-based transformations to confront sustainability challenges, there is a need to explore "the

complex relationship between environmental education and researcher activism from the perspective of transgressive learning” (p. 80). The jumping-off point for the article by Moyer et al. (2016) is a critical discussion of Mezirow based concepts of transformative learning, pointing out that these have focused almost exclusively on individual transformation avoiding the agenda of learning for social change and action. They argue that action is an important element in the development of transformative learning, distinguishing between learning that takes place through actions and action as a result of learning. Comparing learning in community and formal education settings and in different community settings, they underline that culture and context influence assumptions about appropriate forms of learning and action for particular situations.

The methodological approach in Lotz-Sisitka et al (2017), draws on “research change laboratories working through the expansive learning cycle” (p. 904), including questioning (of contradictions in activities and practices), analysis (reflecting on problems and tensions), modelling (considering alternatives or model solutions) and examining the model (testing the viability of model solutions). It is described as a formative interventionist research approach not unlike action research, justified by that the monitoring of transformative agency requires a co-engaged learning and research process. The approach is further elaborated as “built on a dialectical ontology of developing systems which integrates properties, relationships and movement, and posits that systems develop by overcoming inner contradictions” (p. 900). The authors highlight transformative processes, not as a reaction to external influences, but as learning about what is “not yet there”. This seems to be a reference to an ontological understanding of reality as transitive, where phenomena can be perceived as real, although they may not (yet) be actualized or visible, indicating a foundation in a critical realist ontological stance. Macintyre and Chaves (2017) underline the importance of contextual reflexivity, understanding and respecting other worldviews and realities, and creating

knowledge in collaboration with research subjects. They underline that “through our researcher narratives, we are producing storied performativity” (p. 91), which can be interpreted as drawing on a methodological stance within post-structural research and its interest in the performativity of discourses. The emphasis they place on understanding and respecting other worldviews and realities suggests a foundation in a relational ontology position. With the focus on participants’ self-directed learning, actions and reflections on transformative learning experiences and action outcomes, and an analytical approach based on a distinction between individual, interpersonal and collective actions, Moyer et al.’s (2016) case studies in community settings seem inspired by action research methodology in the critical research tradition.

Lotz-Sisitka et al. (2017), point out that, although their study is explicitly “theoretically/epistemologically/methodologically” oriented, the models they have used in research and their experience with these are spread via learning networks and college curriculum innovation. This includes, for example, an illustration of how the change laboratory process allows for boundary crossing learning, where college lecturers learning from the practices of farmers, which in turn allows the colleges to offer new learning opportunities for students. They are thus emphasizing the role of their research in informing the field of ESE research, while also hinting at its role in informing formal and informal educational practices. Macintyre and Chaves (2017) specifically emphasise the contribution of their study for development of research practice, questioning the possibility of participatory inclusion of research participants as co-researchers. They point at the role of research in supporting emancipatory change at the same time as they are asking “how to break hegemonies of power without causing tension and conflicts between and within the people and communities we study?” (p. 85). They hereby problematize research that leads to the disruption of norms and cultural practices in sustainability transition practices and

promote a perspective appreciating that boundaries, understood as sociocultural differences, can be difficult to overcome. Addressing the role of research in supporting deliberations in educational practice development. Moyer et al. (2016) point out that their case studies provide examples of how emancipatory-focused learning that motivates action outcomes can be achieved.

## **Discussion**

The above analysis presented examples of how ESE research addresses transformative expectations and justifies the knowledge it produces and its methods. In the following, I reflect on the interfaces between the examples when it comes to their ontological, epistemological and methodological stances.

### ***Ontological stances***

Whether or not there is a need for critical approaches in education research can be considered an ontological question as it concerns the nature of reality and how this is understood. The articles describe critical education research as committed to facilitating emancipatory change in different ways. Wals's (2010) conceptualization of educational principles resonates with principles for emancipatory education, encouraging learners to become aware of their individual reality by investigating their daily life. The expectation is that the results of their investigations will encourage learners to question broader societal realities and propose changes to the status quo – in Wals's (2010) words, leading to “a shift of switch to a new way of being and seeing”. Similar formulations of “seeing things differently” are identified in Blake et al.'s article. With a theoretical foundation in systems theory, the authors cite Bateson's concept of epistemic learning, articulated as “seeing our worldview rather than seeing with our worldview”. This refers to an experience of learning that involves a profound shift in the operative way of knowing and thinking that frames people's perception of, and interaction with, the world. Ojala (2016) and Macintyre and

Chaves (2017) explicitly point to the need to address power dynamics and cultural struggles of domination in processes aimed at facilitating emancipatory change. Lotz-Sistika et al. (2017) conceptualize transformative change agency as both materially and discursively constructed, leading them to argue that it is necessary to pay attention to both cultural and structural formations in explorations of change agency. This account resonates with Apple's (2016) underlining of the necessity of considering issues concerning the politics of redistribution and those concerning the politics of recognition in concert in critical education research.

The articles by Lange, Lotz-Sisitka et al.(2017), and Macintyre and Chaves (2017) provide examples of an explicit engagement with different ontological stances, where these function as a jumping-off point for justifications of knowledge and methods in the research. The literature on critical realist research points out that the preoccupation with 'ontology first' can be seen as "'re-vindication of ontology' and the possibility of recognizing and accounting for structure, difference and change in the world in ways that escape ontological actualism and ontological monovalence" (Lotz-Sisitka and Price 2016, p. 1, quoting Bhaskar 2010, p. 15). Lange's and Macintyre and Chaves's (2017) accounts are based on relational ontology, where transformative learning is seen as dependent on an awareness of the dynamics of the whole and multiple worldviews, understanding and respecting other realities. This can be described as a multiple-ontologies outlook - an appeal to an ontology that constitutes a pluriverse, stressing the existence of "other" worlds, and as an attempt to replace a homogenizing ontology (Bengtsson 2019, p. 3429). In these accounts, it seems to be the encounters between different worldviews, as well as the reflections on the disruption of mainstream or taken -for-granted social norms, that hold a special potential for transformative learning and change agency. Lotz-Sisitka et al. (2017) describe their research approach as built on a dialectical ontology and demonstrate how transformation takes place in complex

time-space configurations that contain various social-ecological conditions, cultural histories and power relations. Their emphasis on transformative processes as learning about what is “not yet there” furthermore suggests a foundation in a critical realist ontological stance, where phenomena can be perceived as real even though they may not (yet) be actualized or visible.

### *Epistemological stances*

Demarcations in relation to what is considered established theory in the field play a central role in the justifications of knowledge in the selected articles and were more prominent than I had expected, considering that only three of eight articles describe their methodology as primarily conceptual/theoretical. In the articles by Lange and Ojala (2016), broadly focusing on theoretical/conceptual development, knowledge development is justified in relation to the need to address gaps in and challenge established transformative learning theories. Examples include Lange’s rejection of the validity of rational understandings of transformative learning in favour of more holistic understandings. She criticizes the current tendency to focus on the worldview of the individual, arguing that relational ontology offers opportunities to revitalize the field of transformative learning theory. Ojala (2016), in a critique of transformative learning’s tendency to focus on disrupting cognition/critical thinking, norms and practices, emphasizes the need to also disrupt unsustainable patterns of emotional regulation. Drawing on epistemological stances in post-structural research in her description of emotions as discursive practices, she first discusses the pitfalls of omitting the role of critical emotional awareness in established conceptualizations of transformative learning, before trying to identify potential openings in these conceptualizations. Moyer et al. (2016) likewise argue for a rejection of critical approaches with a one-sided focus on rational and cognitive aspects, criticizing Mezirow’s concept of transformative learning for ignoring the agenda of learning for social change and action. Alvesson and Sandberg (2014) describe

such negations of conceptualizations in established theories, where researchers argue that certain elements are downplayed or omitted, as a form of problematization in the generation of research questions that can develop the field.

The analysis also identifies examples of justifications for knowledge development illustrating what Akkerman and Bakker (2011) term the potentiality of boundary crossing, where researchers or research participants seek out ways to connect across divisions. This includes the arguments for a foundation in systems theory in Adomssent et al. (2007) and Blake et al., focusing on the synergic relations between different sustainability subsystems and levels of action and change towards more sustainable practices in higher education institutions. The potentials and barriers in creating a space for transformative learning are seen as dependent on the development of these relations, and the ability to navigate in relation to external systems. Awareness of the boundaries between these systems and experience with attempts to connect across divisions thus seem to be regarded as prerequisites for transformative learning and change. Another example of using demarcations of boundaries to justify knowledge development in research is the use of the binary concepts of individual/collective action, which play a central role in Moyer et al.'s (2016) analytical approach. This approach is based on a distinction between actions on different levels, justified by the need to develop knowledge of barriers to and catalysts for action on different levels. Lotz-Sisitka et al. (2017)'s study provides a third example where demarcations of boundaries are construed as essential for knowledge development. In accordance with their theoretical approach, the individual-collective relation in transformative change agency influences the different elements of the expansive learning process, from resisting and questioning action to committing to and taking action. The study furthermore provides an example of boundary-crossing learning in the description of how college lecturers and local

community farmers mobilize and work across professional divisions to increase the potential for knowledge development.

### ***Methodological stances***

While the research literature points out that justifications of knowledge are axiological, i.e. researchers' subjective values, intuition and biases are important (see e.g. Alvesson and Sandberg, 2014; Carter and Little, 2007), the same could be said about justifications of methods. Researchers attribute values to specific methodologies in the process of articulating, analysing and evaluating "logics-in-use" in their own research. As the analysis of examples of research in this article indicates, justifications of research are rooted in norms and practices referring to particular critical research traditions, while often also drawing on norms and practices from other critical research traditions. This can be viewed as a form of boundary crossing between different critical research traditions. Macintyre and Chaves' (2017) study, based in participatory action research methodology, provides one of these examples. On the one hand, it underlines the potentials in creating knowledge in collaboration with research participants, while it on the other hand highlights the ethical tensions inherent to the concept of knowledge co-production. Their problematization of researcher activism, drawing on notions rooted in post-structural research, can be construed as an expression of their discomfort with action-research-oriented approaches. To this end, they point out that research can lead to a disruption of norms and cultural practices in sustainability transition practices and promote a perspective appreciating that it can be difficult to overcome boundaries, understood as sociocultural differences. This can be interpreted as cautioning against regarding contradictions and differences as unproblematic in attempts to challenge unsustainable hegemony.

The analysis provides examples of a range of methodological approaches in attempts to explain and explore events and experiences or to intervene in social practices in search of



what could be. Different forms of problematization, such as arguments for the need to confront a methodological problem and question its inherent contradictions, for performing a ‘critical analysis’ of a theoretical problem, or for modelling and testing transformative approaches, can be described as core justifications for methodological choices across the selected articles. The research change laboratories in Lotz-Sisitka et al. (2017) can be seen as an example of a modelling or testing of the expansive learning cycle in community settings, with the intention of allowing a reframing of processes via norm transgressions. Different conceptualizations of transformative expectations, twinned with different understandings of how critical research can facilitate emancipatory change, seem to offer different foundations for methodological justifications: to work for change within existing social frameworks (adaptation), or to seek improvement by transgressing norms (disruption). Reading across the publications in the transgressive learning project, Bengtsson (2019, p. 3429) notes the distinction drawn between transformative learning and transgressive learning - the former seen as involving gradual and ongoing change, with connotations of more adaptive and systemic transformation, and the latter as engaging in the radical disruption of existing systems of practices and norms. Ojala (2016), for instance, refers to confrontations of different power/knowledge constellations and disruptions of unsustainable emotion-regulation patterns by drawing on the concept of transgressive learning. In spite of the connotations of radical disruption in Wals’s (2010) formulation of the educational principle of transformative disruptions emphasizing students’ own problematizations and critical analysis, this can also be regarded as a conceptualization emphasizing gradual and ongoing change. At first sight, Lange’s point of departure in a systemic approach focusing on nested systems and holistic dynamics seems to refer to adaptive notions of transformative change. However, her emphasis of the need to not only consider the worldviews of the individual but

include multiple worldviews indicates an engagement with notions of a radical disruption of established norm systems.

Moyer et al. (2016) point out that culture and context influence assumptions about appropriate forms of learning and action, and that, in contexts focusing on sustainability in community settings, social action is more likely to be seen as desirable and necessary than in a classroom or other context of formal education. Thus, justifications of research methodologies within and outside formal education settings are likely to differ when it comes to how they address change. The examples in this article addressing systemic transformative change in higher education institutions seem to confirm this difference as they conceptualize change in more gradual and ongoing terms, based on the justification that social change in such contexts requires an adaptive and system-sensitive approach. While the examples addressing change in community settings conceptualize change in more radical terms, referring to concepts of learning for social change and action (Moyer et al., 2016) and norm transgressions (Lotz-Sisitka et al. 2017).

## **Concluding perspectives**

Transformative expectations in education concern both contemporary and future change, calling for what UNESCO (2015) refers to as a rethinking of education. ‘Rethinking’, ‘revitalizing’, ‘disrupting’, ‘reframing’ and ‘transgressing’ are some of the terms used when addressing such expectations in the examples of ESE research. The transformative expectations in policy, positing education as playing a crucial part in addressing sustainability challenges in what are potentially major changes to existing social systems, thus seem to have triggered a response in ESE research. This article has explored transformative expectations and justifications of research in examples drawn from qualitative ESE research within three different categories focusing on different aspects of transformation and change:

transformative teaching in higher education, systemic change in higher education institutions, and change agency formation in community settings. The examples within these categories are influenced by different assumptions about appropriate forms of learning, action and change, yet they seem to share what one could call an ontological assumption characteristic of critical education research concerning the potential of education to transform and change subjectivities or the cultural or structural formations that hold unsustainable practices in place. Drawing on multiple discourses of transformative expectations substantiated by different values and conceptions of good, there is a strong sense across the examples of engaging with the moral imperatives of ESE in response to sustainability challenges and addressing issues related to hegemonies of power in processes aimed at facilitating emancipatory change.

The examples from ESE research describe critical education research as committed to facilitating emancipatory change in different ways: by stimulating people's questioning of reality, by addressing power dynamics and cultural struggles of domination, or through social action and transformative agency. Their justifications of knowledge development include arguments for the need to address gaps in and challenge established transformative learning theories, as well as arguments for what Akkerman and Bakker (2011) term the potentiality of boundary crossing. Different forms of problematization, such as confronting a problem and questioning its inherent contradictions, performing a 'critical analysis' of a problem and modelling and testing solutions, can be described as core justifications for methodological choices across the selected articles. The examples of ESE research furthermore illustrate that different conceptualizations of transformative expectations, twinned with different understandings of how critical research can facilitate emancipatory change, seem to offer different foundations for methodological justifications: to work for change within existing social frameworks (adaptation), or to seek improvement by transgressing norms (disruption).

What can the idea of the potentiality in using demarcations of boundaries to explore justifications for research and the ‘observer-methodologist’ approach contribute in relation to what in the call for this special issue was formulated as the transmethodological challenge of escaping existing research paradigms? Observing boundaries in articulations of logics-in-use in research can reveal inherent tensions, as well as opportunities to create a dialogue between these tensions in the pursuit of transformative change; in turn, this may allow the development of new articulations (Freeman 2017, p. 11). Discussing the transgressive learning potential in binary conceptions such as individual/collective learning and systemic/disruptive learning, Bengtsson points out that distinguishing between and connecting both sides of such conceptions are equally important as the potential for transgressive learning resides in the interplay between the sides (2019, p. 3430). Following a similar line of thought, Akkermann and Bakker (2011) point out that there is a need for exploration and discussion of boundary objects in order to affect the discourses of participants in social practices – and that research discourses are no exception. Reflecting on learning in a collaborative intercultural research project, they argue that the meaning-generating effect of diversity cannot be presupposed; only when cultural differences lead to discontinuities can they generate the negotiation of meaning. Both these accounts can thus support the argument that engagement with boundaries in logics-in-use in research is a prerequisite for researchers’ ability to question assumptions, think differently and see something new - in other words, the ability to develop new knowledge. The article’s tentative response to the formulation of the transmethodological challenge in this special issue of escaping existing research paradigms can be summarized as follows: Engagement with boundaries in justifications of research can reveal stances and open up for a dialogue on ontological, epistemological and methodological stances and tensions. To work across boundaries or transgress boundaries in research presupposes an awareness of differences

between research traditions, their stances and axiological foundations. The transformative potential in working “transmethodologically” might thus reside not so much in an escape of existing research traditions as in an engagement with and dialogue about differences.

The selected articles have offered a wide range of ontological, epistemological and methodological perspectives. However, it would have been relevant to include publications other than journal articles in order to provide a more comprehensive overview of the research landscape of ESE research addressing transformative expectations. Journal publications require in-depth descriptions of methods and the usefulness of research, but have less focus on how certain ontological, epistemological and methodological perspectives influence how researchers perceive, justify and go about their research; monographies and anthologies, on the other hand, can offer a space for an elaboration of these perspectives. The articles furthermore draw on research from many different geographic areas and the examples of research thus differ in many more ways than it has been possible to highlight in this article, hereunder in relation to socioeconomic and cultural contexts. While I have limited the analysis to exploring how examples from ESE research address transformative expectations and justify the knowledge such research produces and its methods, there is a potential for further inquiry into how sociocultural norms and differences in socioeconomic structures and axiological perspectives on sustainability issues influence these expectations and justifications.

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### **About the authors**

Monica Carlsson is assistant professor at Danish School of Education, Aarhus University. Her research focuses on sustainability education and health and wellbeing education. Contact email: [monica@edu.au.dk](mailto:monica@edu.au.dk)