Discourse and Communication for Sustainable Education

Editorial

As many of you will already know, the *Journal of Discourse and Communication for Sustainable Education* has its base in Daugavpils University in Latvia, one of the nations who have embraced the need for education to achieve sustainability. In this edition, the journal team has invited scholars from all over the world to contribute to the challenges set by the Sustainable Development Goals and Agenda 2030, through submission of articles that highlight new ways of thinking about education for sustainability and/or that articulate processes that enable transformations in learners towards becoming sustainability-minded or change agents for sustainability. The authors of this volume make their contribution through presentation of conceptual, philosophical and empirical works encompassing deeply reflective thinking and articulation of innovative practices within the areas of: sustainability pedagogies; sustainability competencies; values education; as well as, moral and religious education.

The first paper in this volume by Tanja Tillmanns, Charlotte Holland, and Alfredo Salomão Filho responds to calls for articulation of new pedagogies in education for sustainability, by presenting the design criteria for development of Visual Cues – visual stimuli that are used in combination with other pedagogical processes and tools in Disruptive Learning interventions in Education for Sustainable Development, to disrupt learners' existing frames of mind and help re-orient learners' mind-sets towards sustainability. The theory of Disruptive Learning (Tillmanns, 2017) rests on the premise that if learners' frames of mind or frames of reference can be disrupted (in other words, challenged), then learners' mind-sets can be re-oriented towards sustainability, and indeed learners can be motivated to engage in change agency for sustainability. The use of Visual Cues thus unsettle or challenge learners' mind-sets, and in doing so, set them on the pathway towards becoming more sustainability oriented, and/or in motivating engagement in sustainability change agency. The findings form part of a broader research study on ESD conducted in a higher education institution in Ireland within an undergraduate degree of teacher education.

The paper by Yesudas Choondassery argues that a rights-based approach to environmental issues could become a possible ethical foundation for the agenda of sustainable development. The author examines the United Nations proposed new approach to sustainable development, which gives a "human face" to the environmental issues by focusing on the right to have a clean, healthy and safe environment for humans to flourish. The author argues that "unsustainable economic growth compromises the rights of all people who unjustly suffer the consequences of environmental degradation and exploitation. Sustainable development in the context of human rights give priority to the right to have a healthy environment." Finding this moral foundation rooted in the concept of human rights could provide a new approach to deal with the degradation and pollution of the environment, which are a threat to the well-being of all living organisms.

In his paper Ole Andreas Kvamme presents a theoretical approach to research on sustainability values in moral education which accommodates for both universality and context. The scope is mainly theoretical, informed by the moral and political philosopher Seyla Benhabib, but some empirical material is brought in to exemplify. The school subject involved includes religious education, and the empirical material shows that religion is part of the context. In the second part of the article the author is mediating

between this theoretical approach to moral education and the interpretive approach developed by Robert Jackson addressing religious education. The aim is to explore common ground, uncover factual tension and reflect on how both moral education and religious education may contribute to sustainability education.

The paper by Rita J. Hartman, Elizabeth Johnston, and Marty Hill describe how an empathetic design approach to sustaining school change can lead to innovative actions by school leaders. School leaders' who immersed themselves in the school culture spending the day shadowing a student gained deeper understandings and greater insights into the challenges and issues facing students on a daily basis. Leaders, who gain empathy for student experiences increased personal understanding of how students perceive the school day, how students characterize the socio-cultural environment of the school, and how students construct meaning from daily experiences. The findings of the study describe an alternative approach to producing change in the school setting that could lead to a higher rate of student success.

The paper by Geert Franzenburg demonstrates how adult education becomes sustainable by acknowledging the particular style, competence and experiences of learning, and by drawing benefit from informal learning and biographical approaches. Focusing on Protestant adult education as a core model, he emphasizes the memory oriented educational approach, and explains the phenomenological background and the historical context of this particular concept. By exploring dualities within Protestant adult education, and by evaluating adult education programs, he shows how adult education has to balance between past, current and future experiences and situations, in order to transform the participants' belief systems, values and attitudes, and to facilitate reconciliation concerning past and present conflicts, such as stereotyping during the Nazi regime and the modern refugee crisis.

Tori Colson and her colleagues Kelly Sparks, Gina Berridge, Renee Frimming, and Clarissa Willis, discuss the benefits of an extended student teaching experience and the self-reported efficacy of participants. Specifically, they examined essential tasks in teaching such as assessment, differentiating lessons for individual students, dealing with students with learning challenges, repairing student understanding, and encouraging student engagement and interest. The results of the study indicated that pre-service teacher candidates in a year-long student teaching placement were more satisfied with their ability to engage students and manage classroom behavior than their counterparts in a traditional one semester placement.

This paper by Çağla Atmaca aims to find out the possible effects of changing contextual factors on pre-service and in-service teachers in terms of sustainable education for their profession. For this purpose, 267 pre-service teachers from four different universities and 50 in-service teachers from 15 different cities participated in the study. Out of 317 participants, 245 stated that contextual factors influence their teaching habits adversely, while 54 reported that they ignored the outer factors. In light of the data gathered, it can be said that the participant teachers were mostly pessimistic about the effect of contextual differences. These findings suggest that pre-service teachers should be exposed to various school settings during their practicum and in-service teachers should receive context-related support from the stakeholders to enhance their professional skills and promote ESD in teacher education.

The article by Veronika Marta Wora, Ranto Hadisaputro, Ngatou Rohman, Husin Bugis, and Suharno Nugroho Agung Pambudi presents an overview of a study that set-

out to examine the effect of Numbered Heads Together (NHT) approach as a cooperative learning strategy on the academic performance of learners in a vocational high school in Surakarta City, Indonesia. The aim was to improve the levels of student engagement and achievement in the Basic Vocational Competence subject. The result showed that the application of the NHT learning model improved engagement within the learning activity, as the level of academic achievement of learners.

The paper by Dzintra Iliško, Eridiana Oļehnoviča, Inta Ostrovska, Velga Akmene, and Ilga Salīte reflects on experience gained within the framework of the international project on integration of ESD competencies in the vocational school in Latvia. The most important result of the project Education for Sustainable Development (ESD), was the identification of key competencies that are required for a successful program in sustainable development. The individual and focus group interviews indicated how teaching practices had been changed and restructured to integrate these key competencies for sustainable development.

The article by Ulrika Svalfors explores the manifestations of concepts of sustainable development in the curriculum and syllabuses of Swedish upper secondary school, examining the emphasis given to ecological, economic, and social dimensions of sustainability. The theoretical framework was informed by Laclau and Mouffe's discourse-concept and Mouffe's concepts of *'politics and the political'*. With a research overview as a starting point, the study investigated whether one or more discourses appear in the policy texts. Through an argument about antagonism and hegemony, the article ends up with the conclusion that there mainly exists one discourse in the curriculum and syllabuses. This discourse is centered on the rationality of natural science and promotes sustainable competence especially amongst engineering students.

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Charlotte Holland,
Dzintra Iliško,
Ilga Salīte

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Design Criteria for Visual Cues Used in Disruptive Learning Interventions Within Sustainability Education

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Abstract

This paper presents the design criteria for Visual Cues – visual stimuli that are used in combination with other pedagogical processes and tools in Disruptive Learning interventions in sustainability education – to disrupt learners' existing frames of mind and help re-orient learners' mind-sets towards sustainability. The theory of Disruptive Learning rests on the premise that if learners' frames of mind or frames of reference can be disrupted (in other words, challenged), then learners' mind-sets can be re-oriented towards sustainability, and indeed learners can be motivated to engage in change agency for sustainability. The use of Visual Cues thus unsettle or challenge learners' mind-sets, and in doing so, set them on the pathway towards re-orientation in becoming more sustainability oriented, and/or in motivating engagement in sustainability change agency. The findings form part of a broader research study on ESD conducted in a higher education institution in Ireland within an undergraduate degree of teacher education. Kathy Charmaz' Constructivist Grounded Theory approach guided the entire study, resulting in the articulation of the theory of, and processes within, Disruptive Learning. This paper presents design criteria for Visual Cues that were articulated through a thematic analysis approach from data emerging from reflective diaries, follow-up interviews, audio recordings and observational notes. The findings from this study in respect of design criteria state that Visual Cues must disrupt rather than disturb; must represent (have impressions of) real life contexts, scenarios, practices or events; must provoke controversy; must contain a visual stimulation; and can have a critical question.

Keywords: Disruptive Learning, Visual Cue, pedagogy, sustainability education, higher education.

Introduction

One of the most valuable and powerful public goods is sustainability – an inherent solicitude for the survivability of life on Earth as we know it. To tap into the potential of this public good, a shift towards, or a consideration of, a relational worldview is urgently required. Anthropocentrism or human-centeredness shapes Western value systems, resulting in the prioritisation, protection and promotion of human interests

and well-being at the expense of non-human things. The evidence of anthropogenic causes of contemporary crisis generates pressure on education to re-orient human practices and actions (Barrett et al., 2017). Unsustainable practices highlight the necessity to take into consideration alternative paradigms (Pipere, 2016). Potentially, holistic thought processes support the understanding of humankinds' position in the whole ecosystem, and scholars increasingly suggest the importance of 'disrupting' anthropo-centric perspectives and/or dispositions. In this sense, Barrett and his colleagues (2017) argue that "the more-than-human as agent is essential for disrupting the anthropocentric privilege that dominates" (p. 134) the education system. Jickling and Sterling (2017) also emphasise the need to disrupt dominating assumptions in educational thinking, while Jickling (2017) argues that the creation of "education experiences that are held, felt, and disruptive might just be the basis for learning that is, indeed, transformational" (p. 28). Moreover, the future of humanity relies on the reorientation of each individual (Zygmunt, 2016) through an exploration of one's values and worldviews based on both self-knowledge and knowledge about others (Valk & Tosun, 2016).

As traditional pedagogy is also based on the humanistic and anthropocentric tradition (Ferrante & Sartori, 2016), educators should become 'artistic rebel teachers' who challenge individualistic anthropocentrism (Blenkinsop & Morse, 2017), as "ESD [Education for Sustainable Development] essentially starts with and revolves around re-embedding SD [Sustainable Development] in life and the act of living" (Eernstman & Wals, 2013, p. 1657). This requires teachers to become change agents for sustainability, then, educating students to become change agents. As there is no blueprint of a sustainable life or sustainability values, a change agent for sustainability is ones' own teacher. In this respect, Gregory (2014) elaborates that

> *for the classroom community and the larger society this kind of education aims at democratic reconstruction. For the individual, this kind of education aims at demystification about the power arrangements of one's school, family, neighborhood, workplace and state. To be demystified is to become aware of the kind of person one has become by participating in these relationships and institutions, how one in turn contributes to status quo power systems, and the possibilities for exercising one's agency – especially with others similarly situated – to disrupt and reinvent them* (p. 27).

This paper presents the design criteria for Visual Cues – a visual stimulus that can be used (in combination with other pedagogical processes and tools) to disrupt learners' existing frames of mind, stimulating deep learning and re-orientation of frames of mind towards becoming more sustainability oriented, and/or motivating engagement in sustainability change agency.

Research Context

The findings outlined in this paper emerged from a broader research study on sustainability education conducted in a higher education institution in Ireland within an undergraduate degree of teacher education. Kathy Charmaz' (2006) Constructivist Grounded Theory approach, a systematic methodology in the social sciences, guided this entire study. The contributions to knowledge of this study were twofold, resulting in the articulation of the theory of, and processes within, Disruptive Learning. Disruptive

Learning rests on the premise that if learners' frames of mind or frames of reference can be disrupted (in other words, challenged), then learners' mind-sets can be re-oriented towards sustainability, and indeed learners can be motivated to engage in change agency for sustainability. The theory of Disruptive Learning thus has the potential to inspire pedagogic interventions that can activate transformations *in self* and *of self*, particularly re-orientating mind-sets towards sustainability. The theory of Disruptive Learning aims to initially unsettle (but not disturb) participants, and by using pedagogic processes and tools, it consciously strives to avoid learners being left in a state of disruption. The premises underpinning Disruptive Learning would also counsel against engagement in any activity that has even a low risk of causing mental or emotional disturbance to learners. Disruptive Learning does not belong to any 'signifier bandwagon'. It attempts to disrupt and stimulate visions to re-orient self in the context of the anthropocene, global challenges and crisis. Disruptive Learning is fully activated through pedagogic processes, offering opportunities for deep consideration and sharing of perspectives, values, and worldviews.

In the broader study, it was shown that Disruptive Learning can be facilitated through the design of pedagogic interventions, heretofore referred to as Visual Cue interventions, inspired by Mezirow's (1997) Theory of Transformative Learning, that encompass three dimensions – the first of which involves triggering disruption, the second rational discourse and the third critical reflection. The focus of this paper is to explain the design criteria of the Visual Cues that were used to trigger disruption. The pedagogical processes that enable learners to move beyond initial disruption are an important aspect that will be discussed in another publication.

Within this study, we used a thematic analysis approach (Braun & Clarke, 2006) for the identification of the design criteria of Visual Cues. For this part of the analysis, we relied on data emerging from reflective diaries, follow-up interviews, audio recordings of group discussions, and observational notes taken by an observer during the interventions.

What is a Visual Cue?

A Visual Cue is a visual stimulus, designed to disrupt or challenge mind-sets of students, that may take the form of image or video and may be combined with a critical question (as was mainly the case in this study) to stimulate deeper forms of learning. The Visual Cue aims to stimulate reflection on and deeper thinking about assumptions, expectations, values and beliefs that influence dominant ways of thinking, feeling and acting in contemporary Western societies, inviting students to question their current norms, perspectives and dispositions that have resulted in non-sustainable Western livelihoods. The underpinning assumption is that Western societies are estranged from the wider global community and are to greater extents unaware of the causes or effects of anti-social/environmental behaviours (Cook, Cutting & Summers, 2010). Visual Cues interventions mark the genesis of the re-orientation process, necessary to initiate higher order or deeper forms of learning. This research has provided evidence that the Visual Cues used in this study stimulated disruption within the learner/s, and thus, acted as disorienting dilemmas in a classroom-based setting and supporting a personal connection with the presented scenario. The extent to which Visual Cues facilitated disruption in state of mind was subjective to each learner. However, Visual Cues were shown to have

directed the attention of students to sustainability issues, values-bases, and worldviews, which in turn enabled students to question their own values and worldviews.

The exemplified Visual Cues comprise six different scenarios, requiring students to critically consider different issues, such as: the consequences of humans' far reaching imprint/impact on the environment (Elephant Cue); the collective responsibility of the European refugee crisis (Boy Cue); poverty in developed contexts of the world (Homeless Man Cue); the context of human tissue or human organ growth on animals (Vacanti Mouse Cue); whether they would engage in a particular tribal cultural practice to save vulnerable animal ('Baboon' Cue); and finally, to draw critical connections within the thematic area of sustainability (Leopard Cue). The table below describes the nature of, and the sustainability principles and the thematic areas within, each Visual Cue.

Table 1
Overview of Visual Cue Examples

Visual Cue:	**Elephant Cue**
Description:	The image shows an elephant standing in its natural habitat and has graffiti sprayed over his body.
Trigger question & Visual Source:	*What imprint do YOU make on the environment?* Source: http://adsoftheworld.com/media/print/wwf_biodiversity_and_ biosafety_awareness_elephant
Sustainability principles:	Respect & Care for the community of life (interdependency of human/ nature and human/animals); Ecological Integrity; Fragility of Nature's balance; Possibility of Ecocrisis; Anti-anthropocentrism; Democracy, non-violence & peace
Thematic areas:	Far-reaching consequences of human actions on environment; Interde-pendencies of sustainability cornerstones; Natural/Urban environment; Graffiti as art/vandalism; Animal extinction; Animal poaching/hunting; Animal rights
Visual Cue:	**Boy Cue**
Description:	The image portrays a sand sculpture by the artist Sudarsan Pattnaik of the original image of Alan Kurdi with the tag line "Humanity washed ashore SHAME SHAME SHAME". Alan Kurdi is the three-year-old Syrian boy, who drowned along with his mother and brother off the Turkish coast because their boat capsized shortly after leaving Bodrum.
Trigger question & Visual Source:	*Whose responsibility is it to solve the current refugee crisis in Europe?* Source: http://www.bbc.com/news/world-europe-34150419
Sustainability principles:	Respect & Care for the community of life (interdependency of human/ humans); Sociocentrism; Ecological integrity; Democracy, non-violence & peace; Social & Economical Justice
Thematic areas:	Human rights; Discrimination and prejudice towards the unknown; The role of mass media regarding fear vs awareness; Refugees/Migrants
Visual Cue:	**Homeless Man Cue**
Description:	The video portrays a social experiment about prejudice towards homelessness.
Trigger question & Visual Source:	*What have you learned from this social experiment? How can this social experiment inform our thinking on sustainable development?* Source: https://www.youtube.com/watch?v=385QekwF-34

Sequel to Table 1 see on the next page.

Sustainability principles:	Respect & Care for the community of life (interdependency of human/ humans); Sociocentrism; Ecological integrity; Democracy, non-violence & peace; Social & Economical Justice
Thematic areas:	Food wastage; Inequality in northern nations; Marginalised/vulnerable members of local communities; Inequality between northern and southern nations; Human rights
Visual Cue:	**Vacanti Mouse Cue**
Description:	The image shows a mouse with a human ear growing on its back – more commonly known as the Vacanti mouse (Cao et al. 1997), on the shoulder of a young woman.
Trigger question & Visual Source:	*Would you allow a body part to be grown on an animal to improve your appearance?* Source: https://bendinggenre.files.wordpress.com/2013/11/girl-with-ear.jpg
Sustainability principles:	Respect & Care for the community of life (interdependency of human/ nature and human/animals); Anti-anthropocentrism; Ecological integrity; Rejection of Exemptionalism; Democracy, non-violence & peace
Thematic areas:	Animal rights; Question consent of animals used for scientific advance-ments; Animal testing; Science vs. nature; Vanity vs. well-being; Lifestyle choices based on vanity or health; Genetically modified organisms
Visual Cue:	**'Baboon' Cue**
Description:	The image shows a woman from the Yanomami tribe breastfeeding both a human baby and a baby monkey (Mark Edwards, Hard Rain project). The title is a word play relating to 'baby' and 'baboon'.
Trigger question & Visual Source:	*Would you breastfeed a baboon?* Source: http://www.hardrainproject.com/admin_images/yanomami800.jpg
Sustainability principles:	Respect & Care for the community of life (interdependency of human/ human, human/nature and human/animals); Reality of limits to growth; Anti-anthropocentrism; Fragility of nature's balance; Possibility of eco-crisis; Ecological integrity; Democracy, non-violence & peace; Social and economical justice; Sociocentrism
Thematic areas:	Comparison between Western and Yanomami cultures; Human rights of indigenous people; Value of indigenous culture; knowledge for environ-mental protection and human well-being; Impact of global industrial practices
Visual Cue:	**Leopard Cue**
Description:	The video was created by Banksy. It shows what appears at first glance a leopard laying on a piece of wood in a room. The camera man touches the leopard before showing the front of the leopard, which reveals only a coat.
Trigger question & Visual Source:	*No trigger question* Source: https://www.youtube.com/watch?v=6IpriP5Bl20
Sustainability principles:	Respect & Care for the community of life (interdependency of human/ nature and human/animals); Ecological integrity; Democracy, non-violence & peace; Anti-anthropocentrism
Thematic areas:	Needs vs. wants; Animal waste; Quality of life and material sufficiency in a finite world; Animal rights; Questioning concept of Zoo; Endangered species

Design Criteria for Disruptive Visual Cues

We will now explain in detail, using examples from the design process of this research, the five design criteria of Visual Cues, namely, they must disrupt, rather than disturb; must represent (impressions of) real life contexts, scenarios, practices or events; must provoke controversy; must contain a visual stimulation; and, can have a critical question:

Visual Cues:	Must disrupt rather than disturb
	Must represent (impression of) real life contexts, scenarios, practices, or events
	Must provoke controversy
	Must contain a visual stimulation
	Can include a critical question

Figure 1. Design criteria of Visual Cues

Disrupt Rather Than Disturb

Visual Cues need to be designed with the aim to disrupt not disturb learners' frames of mind. Educators designing Visual Cues should keep in mind that the intent of Visual Cues is to elicit or cause emotional reactions and/or cognitive disjuncture within learners by challenging or unsettling their existing mind-set/frames of reference. Visual Cues need to cause dissonance within learners, forcing them to take-stock of their emotional/cognitive state of mind, and in turn, lead them to a heighted awareness of, or even questioning of, their existing perspectives and dispositions.

In the context of this study, a range of potential Visual Cues were reviewed not just by the researchers, but also by family, friends and colleagues, to clarify the potential of each Visual Cue to evoke emotional reactions, and to ascertain the appropriateness of these reactions. The findings of this study demonstrated that the selected Visual Cues were beneficial in enabling learners to 'connect with self', thus, in challenging or unsettling existing mind-set/frames of reference. Ultimately, as explained before, six Visual Cues were selected from over 50 possible cues that were reviewed. The following two examples of Visual Cues were excluded as they were very likely to result in disturbance rather that disruption of learners. The first of these was the video-recorded performance of Marion Laval-Jeantet and Benoit Mangin, called 'May the Horse Live in Me' (Fundación Telefónica, 2012). It is an extreme body art, where Marion slowly builds up her tolerance to animal bodies in order to transfuse horse blood into her system, symbolising the animal in human and questioning anthropocentric worldviews. The feedback from reviewers was that it had a very high likelihood of causing mental disturbance rather than mental disruption for the students. Another example is a video created by Eén, a Belgium TV show (Eén, 2016). It showed the backward production process of 'gummi bears' sweets. Towards the end of the video, a hanging lifeless large pig moves towards an assembly line's oven. In both examples, it would have been more likely that first year

undergraduate students would have been unable to move beyond the potentially disturbing nature of these scenes, and thus would not be effective to integrate within Visual Cue intervention.

The findings have shown that Visual Cues should present a scenario that is less likely to be known to participants and is unfamiliar to daily life events or practices if it is to disrupt their existing frames of mind. In this sense, disruption is associated with the discovery of a new or unfamiliar idea, scenario or practice. The disruption of Visual Cues was also indicative of an experience that did not meet their expectations/prior frames of mind. Thus, students tended to be initially surprised, not being sure – initially – of the meaning that they should attribute to the presented Visual Cue scenario, or how they should react to it.

The design of Visual Cues also depends on the demographics and prior knowledge of the target group. This group of learners were higher education students thus, there was greater flexibility in terms of what could be presented than if Visual Cue interventions were being deployed with younger learners in primary/post-primary settings.

Disturbance can be also avoided through the design of Visual Cues that are respectful to the personal contexts of individuals (religion, ethnicity inter alia) within the target group. We consciously avoided the design of Visual Cues interventions that could potentially result in discriminative comments towards marginalised individuals within the target group, such as Visual Cues centering on particular aspects of racial, gender or faith-based contexts.

Visual Cues are designed with the aim to evoke initial emotional reactions. Preferably, they should be unfamiliar to the target group, and consideration of its demographics is essential. It is pivotal that minorities do not feel disrespected or discriminated against during a Visual Cue intervention.

Real Life Context, Scenario, Practice or Event

Visual Cues must portray (or present impressions of) real life context, scenarios, practices or events. The first research phase contained 'the Horse Cue' (Tillmanns & Holland, 2017), portraying a young man with the legs of a horse. The critical question was: 'would you grow an animal body part for the well-being of an animal?'. Most students' responses to the Horse Cue (which was photoshopped) pointed out the need for real life scenarios, as it appeared *"too unrealistic"*. Consequently, we did not apply the Horse Cue in the second research phase. Furthermore, the Elephant Cue (also photoshopped by its creator) raised questions as to whether *"the picture is genuine or photoshopped"*. However, as the Elephant Cue was of more realistic appearance and connected to the lecture content about *"the interlinking elements of sustainable development"*, students critically considered the presented scenario and abstracted its meaning *"of the far-reaching consequences of my actions on a global scale"*.

Nevertheless, the Boy Cue is a reminder that if a Visual Cue deals with a sensitive issue, such as the tragic death of a child within the current European refugee crisis, it is advisable to consider artistic representations to stimulate critical consideration and reflection of the scenario, potentially avoiding emotional disturbances. When inquiring the appropriateness of the Boy Cue (which was an artistic representation of an original photograph of a real event), students thought that *"the image was a good representation of the original image"*. While many participants were aware of the European refugee

crisis, they acknowledged that the Visual Cue motivated them to *"become more informed of the most recent Syrian refugee crisis"*. This research has shown that Visual Cues concerning current affairs can encourage individuals to form an opinion, become more critical, and discuss current events. Students participating in this study tended not to *"voice their opinion"* prior to their engagement with the Visual Cues. As a result, Visual Cues should not only portray unfamiliar scenarios, but also demonstrate (the impression of) real life contexts.

Provoke Controversy

Controversy increases the likelihood of polarised perspectives within the thematic areas, and thus has the potential to enable discourse. Table 1 includes an overview of the principles and thematic areas of the Visual Cues used in the interventions. The following extract from the audio recording of the Vacanti Mouse Cue discussion illustrates that students considered a variety of sustainability principles and related it to a variety of thematic areas within sustainability. This particular Visual Cue brought the following critical question: "Would you allow a body part to be grown on an animal to improve your appearance?

> *P1: I don't know, initially my reaction was 'no, it's unethical, it is cruel, its perverse of science', but then I thought 'oh hang on… what if I was involved in a car crash?' Would I say then 'oh god that is so cruel?'*

> *P2: I thought that as well. If it was some kind of medical reason then, I would. But not for cosmetic reasons.*

> *P3: The animal does not have a voice.*

> *P4: Just because it is an animal does it not matter?*

> *P5: There are cases where they grow the parts from stem cells and there is no animal involvement, so it is progressing, it is possible… they grown a cornea for a woman in a lab.*

> *P4: I don't see it being the same, but my question really was: 'Would we agree more to it if it's an animal than if it's a human?'*

> *P7: I would say 'no', cause I feel strongly for animals…so no.*

> *P8: We are human beings, we see ourselves as the master of beast, we think we can use animals for whatever we like, it is a new concept of animals having rights, rights in themselves.*

The observational notes also showed that in designing or choosing Visual Cues that can be related to different sustainability issues, may stimulate controversy and support a rich exchange of various perspectives. It can further enhance the understanding of the *"connectiveness* […] *that everything is connected"*. One student noted during the interview that: *"I don't think I saw things so much connected before; you hear about it but when you look at these Visual Cues you were able to tie in so many things into the same cue, which was really interesting"*. Therefore, educators should make sure to implement Visual Cues focusing on a variety of sustainability principles and thematic areas to provoke polarized perspectives within the thematic area.

Visual Stimulation

For this research, Visual Cues consisted of images and videos. Visual material can be sourced from various areas of the public domain, such as art that is designed to raise public awareness – often found in social media (Kilaru, Asch, Sellers & Merchant, 2014). For example, the visual content of the Elephant Cue was based on 'awareness advertisements' of a charity organisation. The Leopard Cue was based on the artwork of the street artist Banksy. The Homeless Man Cue entailed a video of a social experiment sourced from YouTube.

Optional Use of a Critical Question

Critical questions can be useful to relate Visual Cues to students' self and/or to ensure real life contexts. The Baboon, Homeless Man, Elephant, and Vacanti Mouse Cues have been related to self via the critical question that personally addresses the viewer. In the construction of questions, it is important to address the question directly to the learner by use of 'you' or 'yours' etc., as this enhances the likelihood of students personally connecting with the scenario and associated content to stimulate critical reflection of self in the context of sustainability. One student highlighted in her reflective diary that *"the tagline makes it a more personal message, because of the use of the tagline where the 'You' is emphasized, it felt more directed at me personally"*.

Nonetheless, educators should keep in mind that visual material itself might relate to self, sustainability principles and/or thematic areas. For example, the tagline of the Boy Cue 'humanity washed ashore – shame, shame, shame', initiated critical reflection of whether self has a reason for shame regarding the refugee crisis. Here, the critical question of the Boy Cue connected the artistic representation back to the real-life context of the European refugee crisis, stimulating controversy. However, Visual Cues do not always need a critical question as the Leopard Cue demonstrates. We intentionally designed it without a critical question to avoid leading the discussion to certain issues of sustainability, but rather to examine to what extent the participants connected the Leopard Cue to a wider range of sustainability issues.

Depending on the nature of the visual material, it can be beneficial to include a critical question in order to relate the Visual Cue scenario to self and/or stimulate controversy.

Conclusions

In this paper, the design criteria of a critical component of Disruptive Learning interventions, namely Visual Cues, has been presented. In the context of *betweenness* of human and non-human, the use of Visual Cues within Disruptive Learning interventions can be used to stimulate learners to enter the process of re-considering own values, beliefs, and perspectives, aiming to establish a relationship, and co-evolve with, *otherness*. Education in the context of sustainability should provide opportunities for learners to critically engage with anthropocentrism or human-centeredness, shaping Western value systems. Furthermore, sustainability education should build the capacity in students to be aware of contemporary tensions or paradoxes, such as between modern and traditional; global and local; long-term and short-term considerations; the universal and the individual; and/or spiritual and material (Delors, 1996) to name but a few. Education should provide

a safe space for exploring these tensions, motivating the re-orientation of existing frames of minds and actions based on an improved self-knowledge, and better understanding of the interconnectedness and interdependencies of all living and non-living entities on this planet.

Lewin (1948) emphasises that humans only change their values base if they perceive a need to change. Thus, learners of sustainability need to be disrupted, stimulating engagement with their own values in the context of sustainability in order to identify and re-orient anthropocentric values. Emotions are key to stimulate the process of ethics and values clarification (Eilam & Trop, 2010) and are essential to give meaning to life, as they support the ability to transform and make sense of perception, thoughts, and actions (De Sousa, 1987). Moon (2008) defines 'emotional insight' as a type of learning that includes an unexpected, recognisable re-orientation of ones' individual outlook, but where processes that resulted in this shift are unconscious. The consideration of the affective domain in educating for sustainability fosters a personal attachment to sustainability and has the potential to influence future decisions (Shephard, 2015). Nevertheless, the use of the affective domain in higher education is limited (Dirkx, 2008). Similarly, art has been increasingly used to raise public awareness (Kilaru et al., 2014), but little consideration has been given to the usefulness of public art or work from the public domain for teaching and learning in higher education classroom contexts. Eernstman and Wals (2013) highlight the lack of consideration of art in the context of ESD. There is also a limited consideration of pedagogy that promotes "practices of self and world care, as well as all the forms of otherness with which we share processes of co-evolution, being aware of our ontological bias" (Ferrante & Sartori, 2016, p. 184).

The inclusion of Visual Cues was inspired by Jack Mezirow's concept of a disorienting dilemma within his Theory of Transformative Learning, and represents one way of triggering disruption. In this sense, Visual Cues can be used to 'disorient' learners, evoking cognitive disjuncture within learners and/or emotional reactions through a personal connection with the scenario. Educators wishing to design Visual Cues need to take into consideration the five design criteria: Visual Cues must disrupt rather than disturb; represent (impressions of) real life contexts, scenarios, practices or events; and provoke controversy. The critical question accompanying the visual stimulation is optional.

Visual Cues illuminate one way of how anthropocentric perspectives and/or dispositions can be disrupted. The pedagogical processes that enable learners to move beyond initial disruption will be subject of a future publication articulating the Theory of Disruptive Learning. It is also important to note that the design criteria for Visual Cues (articulated within this paper) may not be exhaustive and future research might identify additional criteria for triggering disruption, and /or different ways in which to facilitate disruptive learning in ESD.

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Rights-based Approach:
The Hub of Sustainable Development

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Abstract

A rights-based approach to the environmental issues has been gaining momentum since the United Nations' Environmental Agency proposed a new rights-based agenda for sustainable development in the document, *Transforming our world: The 2030 Agenda for Sustainable Development* (UN, 2015). Our moral responsibility toward the environment is essential to the project of sustainable development. The Kantian ethical tradition lays the foundations of a rights-based approach to human rights and sustainable development. Human rights are essential to the flourishing of all human beings regardless of their nationality or another status. Linking human rights to environmental justice has been an arduous task, but contemporary environmental ethicists argue that giving a human face to the environment that nurtures and sustains us is a precondition for sustainable development. The concept of sustainability addresses the issue of economic growth at present and how this impacts the future generations. This paper examines the rights-based environmental ethics, which has emerged in the context of a human rights-based approach to human development and forges a link between rights-based ethics and sustainable development that could establish a solid foundation for environmental justice.

Keywords: human rights, sustainable development, ecosystems, Kantian ethics, environment.

Introduction

A leading myth of the human rights-based approach is that it is purely *ideological,* and its foundations are *whimsical*. Some critics of human rights assume that human rights are not "real" (MacIntyre, 2007). But human rights-based moral inquiry, analysis and activism have developed from the "real" experience of the dehumanization and violation of the dignity of the human person for centuries. This moral framework has generated a body of knowledge and insights into the agenda of human equality rooted in the dignity and value of the human person. For example, studies in genocide, racism, xenophobia, poverty, etc., are all linked to human rights studies. Since the declaration of the United Nations, *The Universal Declaration of Human Rights* on December 10, 1948, there has been a proliferation of literature in human rights studies that have established a well-founded framework for the human rights based approach to sustainable

development. Philosophers, social activists, and political thinkers continue to affirm the value of rights and duties in sustainable development. For a sustainable future of humanity, we must invest in the principle of sustainability, which is an eco-centric worldview that argues that the humans must take an active role in sustainable development because of our moral and legal duties and obligations to this planet and the future generations. The interconnectedness of the ecosystems, and our duties and obligations to a rapidly deteriorating and overburdened planet call for creating a more sustainable future by reevaluating the values of consumerism and materialism that are threats to economic and environmental justice.

The United Nations' *Transforming the Word: The 2030 Agenda for Sustainable Development* is undeniably human rights-based. The 2030 Agenda mandates everyone "to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations" (UN, 2015, p. 3). The connection between human rights and sustainable development is a "*precondition* for sustainable development"(IDRC, 2013, p. 1). Defending the rights of people to have a safe environment in which they can flourish is a precondition for sustainable development (Salīte, 2015). The interconnection between the environment and development were first affirmed in the 1972 Stockholm Conference on Environment and Development and continued the discussion in 1992 Rio Earth Submit to address the challenges to global sustainable development ("UN Conference on Environment and Development," 1992). To attain sustainable development, IDRC (2013) points out that "decisions at all levels must consider the three interconnected pillars of sustainable development – socio-cultural, economic and environmental systems" (p. 3). Sustainable development is impossible without considering the role of humans in environmental justice.

The Rights-Based Approach: A Conceptual Framework

The rights-based approach to sustainable development is a conceptual framework evolved from the moral framework of human rights. This framework is, as stated in IDRC (2013) document, "is a "container" that shapes its content" by introducing the "international human rights standards into discussions, policies, conventions, and processes that address sustainable development" (p. 4). A rights-based ethical approach presupposes that humans are at the center of sustainable development. It doesn't work in the pattern of superior/inferior binary, but rather as co-creators and active agents in the act of creating, nurturing and sustaining the environment with all living organisms. The proponents of sustainable development consistently argued that "It makes perfect sense to link human rights to sustainable development: the right to life cannot be realized without basic rights to safe water, air and land. A human rights approach allows the quality of life of all people to be a central part of decision making." (Adebowale, Church, Kairie, Vasylkivsky, & Panina, 2001, p. para. 4). They argue that the contemporary approach to sustainable development uses two methods; first, applying the existing human rights methods to advance environmental causes, and secondly, translating griev-ances into new rights, which are not included in the traditional lists of rights in order to find novel ways to protect the environment and life. For example, the right clean and safe environment or the right to participate in environmental decision-making.

The concept of human rights is first and foremost a moral ideal with political and legal implications. At the core of this notion stands the belief that "the authority of the community and its institutions and leaders is limited vis-ą-vis the individual" (Amesbury & Newlands, 2008, p. x). The article 1 of the Universal Declaration of Human Rights makes an a priori claim that "All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act toward one another in a spirit of brotherhood" ("Universal Declaration of Human Rights," 1948, p. 2). This claim is founded on a self-evident truth that each person possesses inalienable rights and has dignity because all human beings share a common essence or human nature.

The contemporary philosophical theories of human rights have foundations in Kantian ethical tradition. Coomans et al. (2010) point out that today human rights researchers and theorists have ignored "the fact that the pursuit of human rights is not a goal in itself, but is merely an instrument designed to help improve respect for human dignity" (p. 182). The human rights are not an end, rather a means to an end or from an Aristotelian perspective human rights can be seen as a means to achieve the goal of happiness in human life.

The critics of human rights question the validity of a metaphysical theory of human rights because of the "intellectual skepticism about its conceptual soundness" and that "they are foundationally dubious and lacking in cogency" (Sen, 2004, p. 315). MacIntyre (2007), for instance, argues that the Universal Declaration of Human Rights is ineffective because such a foundation of human rights does not exist or such moral claims are baseless, and the "belief in them is one with belief in witches and in unicorns" (p. 69). MacIntyre, however, has recently recanted his skepticism of human rights morality because of the possibility of grounding it in the Aristotelian tradition (MacIntyre, 2008; Tasioulas, 2010, p. 649).

Amartya Sen (2004) claims that to construct a theory of human rights, we must ask certain specific questions, which are not elucidated in statements of the Universal Declaration of Human Rights. For example, why human rights are necessary? What kind of duties and obligations do they generate? What kind of actions are required to promote human rights? Are the economic and social rights (second generation rights) reasonable? And how does a theory of human rights defend its universality in a diverse world where cultural relativism is perverse? (p. 315–319). Sen (2004) believes that human rights are "primarily ethical demands" and even though they can lead to legisl-ation, having legal validity is not a "constitutive characteristic of human rights." They can be rather promoted through other means such as "public discussion, appraisal, and advocacy." The freedoms that they advance must satisfy the conditions of "special importance" and "social influenceability" (p. 353–354). John O'Manique (1990) argues that the universality of human rights relates to "the idea of survivability in unobstructed discussion – open to participation by persons across national boundaries" (p. 468). O'Manique (1990) claims that human rights must have a foundation in the question of human "survival," which is inherent in or existential to human life (p. 469). This concept serves better rather than the controversial idea of human dignity as a foundation for human rights, according to some critics.

Marie-Benedicte Dembour (2010) locates the human rights approaches within four schools of thought, the Natural school, the Deliberative school, the Protest school, and the Discourse school. The Natural school follows the tradition of natural law, universal reason, and argues that the human rights are entitlements, naturally given to us because

of our human nature. The Deliberative school maintains that they are agreed upon by people as to how a society should be governed using human reason. The Protest school considers human rights as something that people fight for which come from the tradition of social struggle and the quest for social justice. The Discourse school simply considers it as something "talked about" and it has become a powerful language to express political claims. However, the Discourse school proponents do "fear the imperialism of human rights imposition and stress the limitations of an ethic based on individual human rights" (Dembour, 2010, p. 4). These four schools of thoughts help us understand the contemporary human rights-based approaches.

One of the compelling arguments for the ethical foundation for human rights-based approaches come from our moral nature that values the inherent dignity of the person and the moral demand of promoting and protecting it. Jack Donnelly (2003), a leading proponent of this view follows a 'constructivist' theoretical approach and argues that:

> *The source of human rights is man's [sic] moral nature, which is only loosely linked to the "human nature" defined by scientifically ascertained needs. The "human nature" that grounds human rights is a prescriptive moral account of human possibility. The scientist's human nature says that beyond this we cannot go. The moral nature that grounds human rights says that beneath this we must not permit ourselves to fall* (p. 14).

Human rights, continues Donnelly, are required for a life of dignity because they set limits and requirements of social action and when human rights claims bring about a legal and political practice they "create the type of person posited in that moral vision" (p. 15). Human rights-based approach presents a strategy for the realization of a specific mode of environmental justice using a conceptual framework rooted in the moral nature of the environment in which humans and all living beings find a sustainable natural habitat.

Sustainable Development in the Context of Human Rights

Environmental justice is a pre-requisite for sustainable development. The idea of sustainable development was born in United Nations Stockholm Conference on *Environment and Development* in 1972 ("Report of the United Nations Conference on Human Environment," 1973). The advocates of rights-based approach suggest the following three principal areas that will serve the foundation for "increased sustainability" (IDRC, 2013, p. 3):

1. The right to a clean and safe environment
2. Access to information and public participation in decision-making
3. The right to promote and defend the protection of the environment and human rights.

The right to a healthy environment is a basic human right. Integrating this fundamental right to the policies and the decision-making process contribute to the promotion and protection of the environment. Contemporary environmental justice philosophy and practice focus on "the effects that an unhealthy environment can have on the health of individual and communities" (IDRC, 2013, p. 4).

One of the fundamental rights of human beings is the right to life. The realization of this right requires access to clean water, air, and land so that everyone can maintain

the quality of life. Therefore, human rights approach to the environment becomes a crucial element of developing policies that protect the right to life of all. The decision-making process of the governments and international agencies like the United Nations have a profound impact on the life and well-being of people around the globe.

The critics of rights-based ethics may argue that applying human rights to environmental ethics could lead to a rugged anthropocentric worldview. Nevertheless, to achieve the goal of sustainable development, several ecological thinkers argue that we must reevaluate a strictly anthropocentric worldview from the perspective of an ecocentric or biocentric worldview, which holds that all life forms, not just humans, have intrinsic worth or value (Leopold, 1949; MacKinnon & Fiala, 2015; Rolston III, 1988). The concept of sustainable development recognizes the rights of both the humans and the environment. The decision-making process of sustainable development must consider the notion of social equity. Usually, the burden of economic growth falls on the environment and the disadvantaged members of the society.

To realize the ideal of sustainable development the economic and environmental costs and benefits of development have to be equitably distributed by "paying attention to disadvantaged groups in society, including, women, youth and children, the elderly, indigenous groups, and ethnic minorities" (IDRC, 2013, p. 4). It also includes the intrinsic value of the ecosystem and all life forms. Aldo Leopold in his famous essay, "The Land Ethic" suggests that one must think about the land as "a fountain of energy flowing through a circuit of soils, plants, and animals" (Leopold, 1949, p. 262). The intrinsic value of the ecosystem is a non-negotiable principle of sustainable development.

Naturally, the question is, what would this innovative approach to sustainability, the rights-based approach, do to ensure sustainable development? Iliško (2017) suggests that "both restorative and transformative learning illustrate an efficient educational process for sustainability" (p. 15). Education for sustainability begins from both the academia and the grass root levels of the society. For example, including the rights-based approach to sustainable development as a part of the academic curriculum, developing and implementing programs in micro level community organizations, etc., will educate the public and decision-makers to consider environmental issues and economic development in the broader context of human rights and environmental justice.

Sustainable development is the foundation for environmental justice. Environmental justice is not a novel idea. The Environmental Protection Agency of the United States (EPA) defines it as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws regulations, and policies" (EPA, para 1). Although the EPA definition does not directly imply a right-based conceptual framework, it can be drawn from the perspective of social justice and equity, because it is "the poor and disenfranchised who end up suffering most from environmental degradation" (MacKinnon & Fiala, 2015, p. 239). Researchers have found that the poor in both the developed and emerging nations suffer from environmental disasters or chronic diseases resulting from environmental pollution. MacKinnon and Fiala (2015) argue that a verity of issues that comes under the "rubric of environmental justice," which is predominantly anthropocentric. But a "larger concern for the value of ecosystems" promotes quality of life for all organisms in the context of sustainable development and environmental justice (p. 240–241).

Traditionally, it was a challenging task to forge a link between human rights and environmental justice because the advocates of the two issues often treat them as two independent issues rather than an interconnected issue like the two sides of a coin. The new rights-based approach considers environmental justice as the "idea that neither environmental amenities nor the effect of severe degradation are distributed uniformly, with negative consequences most often borne by oppressed and marginalized groups in society" (IDRC, 2013, p. 8). Unsustainable economic growth compromises the rights of the people who unjustly suffer the consequences of environmental degradation and exploitation. Sustainable development in the context of human rights gives priority to the right to have a healthy environment that promotes the flourishing of all.

Conclusions

As mentioned in the above discussion, a rights-based approach to sustainable development is a rapidly developing approach to environmental ethics. There are many approaches to environmental justice, such as anthropocentric worldview, biocentric or ecocentric worldview, deep ecology, etc. While these methods are still discussed and debated, an innovative approach has evolved in recent years focusing on rights-based ethics. Scholars argue that although we have passed over thirty years since the development of the idea of sustainable development, the socio-cultural, economic and environmental issues have not changed much. People continue to live in poverty, the gap between the rich and the emerging nations and people are widening, ecological degradation and exploitation continue to exist. In this context, environmental activists and scholars have developed a new strategy or approach, giving a human face to the environment and considering the ecological issues as direct violations of the right to life.

According to this view, all forms of environmental exploitation must be a violation of the rights of human beings to have a safe and secure environment in which all living can flourish and thrive. Environmental rights are a prime requisite for all to function well. By establishing a conceptual link between human rights and environmental justice, the moral framework of environmental justice becomes not only a human-centered ethics but also an eco-centered ethics. All living organisms become the center of sustainable development. Sustainable development is not possible without considering the impact of environmental degradation specifically on marginalized and oppressed groups. The aggrieved groups must become active participants in the decision-making process and create policies that promote environmental justice and protect the right of all to have a healthy environment. The voice of the people becomes a substantial part of the integration of human rights and sustainable development.

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The Significance of Context:
Moral Education and Religious Education
Facing the Challenge of Sustainability

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Abstract

Education for sustainable development as presented by UNESCO involves a value dimension which is both pivotal and problematic. Pivotal, because values concern what matters to beings, problematic because the values brought forward are formulated as universal values, with the risk of suppressing the plurality of context.

The first part of the article develops a theoretical approach for a research project on environmental ethical values in moral education which accommodates for both universality and context. While the scope is mainly theoretical, some empirical material is brought in to illustrate and exemplify. The school subject involved includes religious education, and the empirical material shows that religion is a part of the context. However, this aspect is not accentuated in the theoretical approach presented.

The second part is a mediation between this theoretical approach on moral education and the interpretive approach addressing religious education. The aim is to explore common ground, uncover factual tension and reflect on how both moral education and religious education may contribute to environmental and sustainability education.

Keywords: moral education, education for sustainable development, universal values, context, religious education, interpretive approach.

Introduction

What is education for sustainable development really about? Why does it matter? In the deliberation of such questions the values soon become present, implicitly or explicitly. As demonstrated in this article, UNESCO, which by United Nations has been designated as the lead agency for education for sustainable development (United Nations General Assembly, (2002)), is itself addressing decisive values which in key documents are normatively formulated, expressed as moral claims with a global reach. These universal values are the focus here.

Education for sustainable development is an interdisciplinary field (UNESCO, 2006; 2014) and as such, the accompanying values belong to all pedagogical activities. However, in some school subjects, the value dimension is more visible than in others. In the humanities a distinguishing mark is to let values be explicit objects of scrutiny, particularly in moral education.

This is the rationale for making moral education the context of this article. The first major concern is the relationship between universal values and context, a contested issue in the scholarly debate which I soon will show. *The aim is to present a theoretical approach as a response to this debate in a way which accommodates for both universality and context.* Here, the central reference is the moral philosopher Seyla Benhabib. (For Benhabib in educational research, see Vestøl, 2011; Wahlström, 2009; Englund, 2011. Particularly pertinent to this article is Karin Sporre's (2015, p. 238) suggestion to let Benhabib's moral philosophy be "a critical framework for discussing issues of citizenship, politics of identity, ethics, value formation and education.") In close connection to Benhabib's conceptions, *context* is here seen as an expression of the embodiment and embeddedness of human beings in a web of relations of time and place involving both environmental, cultural, societal and political conditions.

The second concern emerges from the anchorage of this study in classroom research. The discussions are performed with reference to an ongoing empirical research project on environmental ethical values in moral education, involving students in Norwegian lower secondary school in the mandatory school subject Knowledge of Christianity, Religion, Philosophies of life and Ethics (CRLE). This secular school subject includes not only moral education, but religious education as well, as also is the case in countries like Sweden (Osbeck & Skeie, 2014), Iceland (Gunnarsson, 2014) and Scotland (Conroy, 2014). In the Norwegian syllabus of CRLE the relationship is explicitly stated. The aim of this school subject, as formulated in the introduction to the syllabus (Norwegian Directorate for Education and Training, 2016, p. 8) is to enable the students to "hold a dialogue with others about the relationship between ethics, religion and philosophies of life." Philosophies of life here refers to non-religious traditions like secular humanism. (In this article the reference to the established field 'religious education' includes both religious and non-religious traditions, an alternative could be the more inclusive concept of worldviews, cf. Miedema (2017).)

As research fields religious education and moral education still appear as two distinct traditions. While religious education is the major issue in journals like *Religion & Education* and the *British Journal of Religious Education,* moral education is discussed in *Journal of Moral Education,* both with subsequent associations, societies, and conferences. Certainly there are overlaps. Existential questions, the significance of values and identity formation are raised within both fields. But precisely because of the obvious kinship, the establishment of parallel scholarly traditions is conspicuous.

The situation of parallel worlds emerges as a challenge even in a piece of research like the present one on a school subject including both moral and religious education. Following UNESCO's interdisciplinary call all the way into this specific school subject, the second aim of this article, then, is to mediate between moral education and religious education. I bring in the *interpretive* approach, a cogent contribution to religious education both as a practice and research field, by Robert Jackson recently presented in this journal (Jackson, 2016). *The aim here is to let the interpretive approach inform the theoretical approach already introduced in a way which accommodates for religion as part of the context.*

The present study is part of a larger project on environmental ethical values in sustainability education including analyses of education policy documents, with a corresponding theoretical and methodological framing as presented in this article. (Kvamme, forthcoming)

Methodological Considerations

The article is mainly theoretically oriented. My hope is that, through the discussion, vital aspects of the significance of moral education and religious education to environmental and sustainability education will become visible. Some empirical material will be referred to as illustrations and concretizations. I report from a lesson which exemplifies the relationship between universality and context, and present a small transcript which illustrates the presence of religion as part of the context being studied. However, because of the priority given to theoretical considerations, I do not give a full account of the empirical work which will be focused in a subsequent article.

Let me just sum up some important aspects of the methodology and design of the empirical research reported from here. In October and November 2016, I was observing seven lessons in a 10th grade class in moral education at a school situated in an urban community of Norway. The majority of the 24 students at the age of 14 or 15, had a multicultural background, many of them with links to countries far away. Most of the whole class lessons observed were video recorded, including, in some cases, group discussions. This design was supported by recordings made, using dictaphones. The recordings were transcribed and anonymized by the author. In the sixth and the seventh lesson, sustainable development was a main issue; in the seventh it was a topic for planning a written assignment. In this article, I refer specifically to the sixth lesson and present a transcript from the seventh lesson. Analysis of the sixth lesson has previously been presented in a paper at ECER, the conference of the European Educational Research Association (Kvamme, 2017).

Methodologically, this study is informed by the critical hermeneutics of Paul Ricoeur (2009), emphasizing the interpretative contribution made by the researcher. This also includes the discussions based on the readings of the literature brought into the discussions carried out in the article.

Environmental Ethical Values

The understanding of values employed in this article has a foothold in an everyday context, conceived as something to be considered as good or worthy. Values may be seen as expressions of concerns we have, our hopes and fears. In that way, values are relational; they connect us to the world (Sayer, 2011). As mentioned earlier, the UNESCO values are normatively formulated. Consequently, the distinction between values and norms, the latter understood as rules of conduct, can be difficult to make. Significant is that the values addressed here are expressed as moral claims with a universal reach.

Values are considered to be decisive in education for sustainable development, linked to moral and social responsibility (Huckle, 2008, p. 350). But values is a contested issue as well, raising fundamental pedagogical questions concerning what education is all about. Historically the concept of education for sustainable development first was used by UNESCO in 1992, with a historical background in environmental education (Sauvé, 1996). The relationship between these two fields is complex and involves a salient discussion of the concept of sustainable development which goes beyond the scope of this article. But the debate on values has been carried out within both fields.

Scott & Oulton's (1998, p. 212–213) identification of two opposite positions within environmental education is elucidating. While one stance sees education as a process

which helps students to develop a personal worldview including values to adhere to, the opposite position is characterized by approaching education from the perspective of externally decided goals, which may include the students' adoption of certain values. Within education for sustainable development similar positions may be identified (see Öhman, 2006; Jickling and Wals, 2008; Kopnina, 2014), making the pedagogical concern for edification, *Bildung,* as discussed by Miedema (2017) in the previous issue of *Discourse and Communication for Sustainable Education,* highly relevant.

An aspect of this debate is the status of universal claims, which I here place in the forefront. Louise Sund and Johan Öhman (2014), referring to the United Nations Decade on Education for Sustainable Development (2005–2014), are summing up major positions, themselves problematizing universal values. In one respect they take first stance as identified by Scott & Oulton, being concerned about "a values education that is driven by and strives to inculcate preconceived universal values" in the students (Sund and Öhman 2014, p. 640). But even more decisive is their critique of universal values concealing conflict, plurality and individuality. In their article they call for an education which makes the political dimension visible.

In a condensed form, a central aspect of this debate may be formulated in the following way: How is the relationship between universal values and context to be conceived? Regarding education for sustainable development, this question is of vital significance, because in UNESCO's work in this field values are presented as universal, calling for action in a variety of contexts throughout the world. A major concern in this article is to contribute to this discussion.

What values is UNESCO actually addressing? In its current *2030 Roadmap for Implementing the Global Action Programme on Education for Sustainable Development* values have a prominent position, mentioned in the introduction and throughout the document, however, without qualification (UNESCO, 2014). But as a follow-up of the UN Decade on Education for Sustainable Development (2005–2014), claims formulated in key policy documents there still appear to be decisive today. In *Framework to the UN DESD* (UNESCO, 2006) distinct value statements are made. Pigozzi (2006) also refers to these specific values as an expression of the official UNESCO view of global citizenship education. Below they are quoted from the presentation in the UNESCO framework:

> *The underlying values which education for sustainable development must promote include at least the following: Respect for the dignity and human rights of all people throughout the world and a commitment to social and economic justice for all; Respect for the human rights of future generations and a commitment to intergenerational responsibility; Respect and care for the greater community of life in all its diversity which involves the protection and restoration of the Earth's ecosystems; Respect for cultural diversity and a commitment to build locally and globally a culture of tolerance, non-violence and peace.* (UNESCO, 2006, pp. 15–16)

The values are formulated as universal claims with universal validity. And they are formulated as norms; the moral agent shall pay respect to something. The key word *respect* in moral philosophy has been designated to persons (Dillon, 2016), and raises the question about not only *what* is to be respected, but *who* is worthy of respect. It is significant that the scope presented by UNESCO not only encompasses human beings in their cultural diversity and with their human rights here and now, but future gener-

ations and the greater community of life, as well, including biodiversity and ecosystems. All the values formulated by UNESCO above may be conceived as environmental ethical values – even those involving human beings here and now (see Kronlid and Öhman, 2013). However, within environmental ethics and environmental philosophy the latter two, concerning future generations and non-human life forms, are accentuated. They also have a primary focus in the empirical research project to which this article refers.

Whole Class Discussion: Rule and Context

Consider a 90 minutes lesson in moral education on sustainable development in a Norwegian 10th grade school. In this lesson the teacher shows a 30 minutes documentary about carbon footprint (Våge & Holte, 2016). In the first part of the film, the footprint of 24 year old Sigbjørn is calculated by an expert. With the premise that all human beings could possibly follow his example, the level of this young man is far too high. The second part is following Sigbjørn's efforts to reduce his footprint, with implications for transportation, food and clothing. The final part is about Sigbjørn's reflections when he realizes that he is not able to come down to a sustainable level, running into structural boundaries. He is told by the expert that he has to move into an energy-efficient passive house, which is beyond Sigbjørn's financial reach.

In the subsequent whole class discussion the teacher aims to legitimize carbon footprint as a valid yardstick in front of students, who question the calculation, and indirectly justify their own individual consumption. In moral philosophy, carbon footprint may be conceived as a universalization where the individual consumption is subsumed under a general rule, e.g. formulated this way, referring to information given in the documentary: *The consumption of an individual human being should not exceed a level with concomitant amount of greenhouse gases produced directly and indirectly equivalent to 1,5 tons of CO2.*

In this manner carbon footprint stands out with a clear message to the students, as a vigorous, universalizing expression. Due to the open invitation made by the teacher to contribute and the safe space established in the classroom, student experiences are shared in the whole class discussion. Context is made visible with several of the students taking active part. The framing is mainly facilitating confrontation and problematization of the context, focusing on what is relevant for the carbon footprint calculation; among the students mainly transport and food. This may be seen as characterizing the learning process in this lesson, to become aware of aspects of consumption patterns not complying with sustainable development. However, the students are not encouraged to discuss the premises involved in the carbon footprint rule, and their experiences are mainly seen as a problem, not as resources. In other words, there is a need to elucidate the relationship between a universal rule and context.

Interactive Universalism

In moral philosophy, the issue of universalism and context was a topic of dispute in the 1980s and 1990s. The universalist tradition with a history back to Immanuel Kant was challenged by a range of critics, representing various positions (MacIntyre 1981; Gilligan, 1982; Taylor, 1989; Young, 1990). A common concern was expressed in the claim that human beings always are situated in specific historical contexts.

A salient contribution in this debate was the seminal work *Situating the Self* (1992) by the moral philosopher and political theorist Seyla Benhabib. Benhabib has a background from critical theory and extensive studies of Hegel, and her moral philosophy is to a large extent a critical rethinking of the communicative ethics of Habermas (Benhabib, 1986). On the one hand, Benhabib acknowledges and takes part in the critique of the exclusion mechanisms involved in universalization processes. On the other hand, her claim is that a universalism – which allows for the significance of context – is valid and necessary. An important reference here for Benhabib, as a feminist critic, is the emancipation of women.

In *Situating the Self* the main argument is a defence of this possibility, presented as an interactive universalism. With the designation "interactive", Benhabib is replacing the rationality of a disembedded and disembodied autonomous male – most famously exposed in the legislative universalism of Kant – with situated selves, depending on and living in interaction with others. A consequence of this priority of context is that the exercise of moral judgment does not proceed according to a model of a particular which is subsumed under a universal (Benhabib 1992, p. 128). Moral judgment begins in context, not at a distance from context. "Moral judgment is what we 'always already' exercise in virtue of being immersed in a network of human relationships that constitute our life together" (Benhabib 1992, p. 125).

Pivotal in Benhabib's conception of moral judgment is *enlarged thought,* which is the exercise of bringing in actual and possible others who may be influenced by the moral action. Benhabib qualifies context with reference to narrativity, visualizing the situatedness of the self: "To identify an action is to tell the story of its initiation, of its unfolding, and of its immersion in a web of relations constituted through the actions and narratives of others. Likewise, the whoness of the self is constituted by the story of a life – a coherent narrative of which we are always the protagonist, but not always the author or the producer. Narrativity is the mode through which actions are individuated and the identity of the self constituted" (Benhabib, 1992, p. 127).

Benhabib's critique of previous universalistic moral theories is performed from a feminist perspective. Important here is the naming of the generalized and the concrete other. While Western moral philosophy continuously has accentuated reversibility of thinking (that is to consider the dignity of the other in moral judgement). Benhabib's claim is that the other has been a disembodied, disembedded self, in other words abstracted from the specific contexts of living beings. Herewith, the concrete other embedded in the web of relations has been made invisible. The result has been a privatization of women's experience and the exclusion of its significance for moral judgement.

As a political theorist Benhabib has named the time we live in as the era of cosmopolitan norms (Benhabib 2006, p. 47; 2011, p. 124), a period started with the Universal Declaration of Human Rights adopted by United Nations General Assembly in 1948 and a range of subsequent covenants. Reflecting on this situation, Benhabib once again draws attention to the significance of context. A key concept is *jurisgenerativity,* borrowed from Robert Cover, referring to how laws acquire meaning in specific contexts which the laws themselves cannot control. Thus, "[t]here can be no rules *without* interpretation" (Benhabib 2011, p. 125), and subsequently – because of the multitude of hermeneutical contexts – a variety of interpretations emerge which the rule cannot control. Herewith, the human rights norms "can empower citizens in democracies by creating new vocabularies for claim-making" (Benhabib, 2011, p. 126).

The other key concept of Benhabib, closely related to jurisgenerativity, is *democratic iterations*. Here her attention is directly oriented to the iteration of universal norms in new contexts:

> By democratic iterations I mean complex processes of public argument, deliberation, and exchange through which universalist rights claims are contested and contextualized, invoked and revoked, posited and positioned throughout legal and political institutions, as well as in the associations of civil society. (Benhabib 2011, p. 129)

While jurisgenerativity refers to the capacity of norms to establish a space characterized by interpretations and meanings beyond the control of the norm-giver, democratic iterations signify democratic processes brought in play, made specific in the particular iterations.

What is the relationship between the interactive universalism of the 1990s and the subsequent concept of democratic iterations? In a remark in *Dignity in Adversity*, Benhabib comments on the resituating or reiterating of the universal in concrete contexts, stating: "This is a project I have called "interactive universalism" in *Situating the Self* and "democratic iterations" in subsequent works" (Benhabib, 2011, p. 73). Even if these concepts seem to be closely related, Benhabib may be said to conflate two concepts, a critique often addressed to other thinkers in her critical readings. An important distinction may be said to be that democratic iterations are processes, which presuppose a universal claim which already has been established. Interactive universalism is the practice of moral judgement with regard to a moral action which is to take place. While the latter is a universalizing activity starting in context and including all who actually and possibly may be affected by the moral action, the former is a recontextualization embedding the universal claim in a specific context.

The influence of Hannah Arendt on Benhabib's work is obvious and explicit, the key concepts of enlarged thought and narrativity are drawn from her. Benhabib is also a well-known critic of several of Arendt's distinctions (see Benhabib, 1996), most importantly those between the public and the private, the political and the moral, the right and the good. According to Benhabib, such distinctions confirm societal structures which have made the experiences and life-worlds of women irrelevant and invisible. This critique is particularly pertinent to the dynamics of sustainability, involving both private and public, moral and political, values and norms.

Summing up, Benhabib's theoretical framework may open up decisive aspects of the moral claims made in education for sustainable development with a sensitivity for context and the positioning of the learners. In a classroom situation in moral education, her interactive universalism presupposes participatory learning where the students themselves partake in the universalizing processes of moral claims. As an activity of enlarged thought, this activity also includes the perspectives of possible others outside the classroom who may be influenced by the action in question. Ideally, the universalizing process is performed with a sensitivity for the concrete others situated in contexts expressed by the plurality of human life. Here the concept of narrativity refers to the embeddedness of the selves and their actions in a web of relations.

Also significant is Benhabib's concept of democratic iterations. In education for sustainable development, the universal values formulated in the UNESCO policy documents are supposed to have impact at all levels. Here Benhabib's openness for the interpretive

activity which is involved may be said to encounter the problem of the inculcation of values, as mentioned above.

Whole Class Discussion Revisited

Returning to the school context of a 10th grade classroom, using the theoretical conception of Benhabib, certain aspects become visible. First of all, as a yardstick for whether or not Sigbjørn in the documentary – and the students in class – are responsible for climate change, the rule of the carbon footprint stands out as a version of the Kantian position Benhabib is criticizing, i.e. a universal under which the particulars are subsumed. The whole class discussion demonstrates a major problem with such a procedure; restrictions are placed on context, which according to Benhabib, should be the *starting* point for practicing moral judgment.

A consequence is that the environmental ethical values in play in the classroom discussion, actually remain mostly hidden inside the rule of the carbon footprint. A link to sustainable development was drawn by the teacher in the beginning of the lesson, but during the lesson the rule to a large degree is linked to an abstract activity, expressing a calculation which defines whether or not the individual is complying with a justifiable – i.e. a sustainable – level. Seen from the perspective of interactive universalism, an implication is that the discussion is solely oriented to the individual's consumption pattern. The others who are influenced by this consumption are not made visible. In other words, the application of carbon footprint seems to obstruct the exercise of enlarged thought, as we have seen, pivotal in the interactive universalism of Benahbib.

This impression is strengthened when the discussion is examined in the light of democratic iterations. Because the carbon footprint rule is an abstract expression of values understood as universal claims, the *jurisgenerativity* – i.e. the rule's capacity to establish a space of interpretations – is reduced, and the possibility for democratic iterations restricted. The students do not get the chance to discuss the premises of the carbon footprint, except as an expression of demands and supply in a market economy. The underlying universal values are not made visible.

The restricted scope on the individual consumer could have been modified if the whole part of the documentary shown had been brought into the classroom discussion. Despite all his efforts, Sigbjørn is unable to comply with the carbon footprint rule. His problem turns out to be a structural problem, which exhibits that he is facing both a moral and political problem. But this political dimension is not brought in.

The interpretation above may be further developed while drawing on the concept of narrativity, how we are all embedded in a web of relations with others. Conspicuous is how the web of relations within the class extends national borders. Some of the students have close ties to family in other parts of the world and bring in experiences from here into the discussion, which makes the global dimension visible, highly relevant for sustainability education.

These remarks should suffice to exemplify how Benhabib's theoretical framework offers a critical perspective on classroom activities in moral education. A major observation is the obstructing function of the carbon footprint rule. Even though the teacher allows for class discussion, and hereby grants the students a prominent position in the lesson, their situatedness and experiences are not brought in as a positive resource in the performance of moral judgement.

The Significance of Religion

In the lesson referred to so far, religion plays a minor role, but, in the subsequent lesson, religion was introduced as an issue when the students were preparing a written assignment on sustainable development. Here is a transcript from a scene where the teacher is supervising a group of four students. The teacher encourages the students to reflect on various ethical theories which they have worked with previously in class. The students, however, also want to bring in religion.

> Marjori: If we talk about the way which you mentioned once, when I referred to religious rules and deontological ethics, and you said I could include that. Can I?
>
> *Teacher: Mmm… (confirming).*
>
> *Jasmin: For instance, in Islam as well, one must take care of nature and the future and things like that.*
>
> *Teacher: Exactly. [To the whole group:] Love of one's neighbor in Christianity, Islam. Hinduism, ahimsa, non-violence.*
>
> *Jasmin: I don't know if I commit a sin when I contribute to CO2-emissions.*

The teacher is here confirming the relevance of religion. She refers to previous work in class on Christianity, Islam and Hinduism. However, this issue also makes visible the students' own religious background. Marjori, in the group discussion, refers to herself as a Hindu, and Jasmin to herself as a Muslim. In the transcript, Jasmin brings the concern for non-human life-forms and future generations into her own religious context, gaining support from the teacher. Subsequently, she raises the question of sin, which the teacher does not comment upon.

The religious dimension is not *prima facie* captured by the theoretical approach informed by Seyla Benhabib. As a post-foundational moral theory, religious references are not accentuated. A major concern here, as in Habermas' discourse ethics from the 1980s, is that the universal claims are validated through a procedure which does not refer to authorities other than those which are expressed in the interaction between rational selves (see Benhabib 1986, p. 296).

Confronted with empirical material which obviously includes religion, the question is raised as to how religion may be positioned within the theoretical approach presented so far. In the final part of this article, I will discuss this issue while mediating between the moral philosophy of Benhabib and the interpretive approach developed by Robert Jackson (1997; 2004; 2016).

The Mediating Exercise

The interpretive approach to religious education was developed within the Warwick Religions and Education Research Unit in England (Jackson 2016). It has been extraordinary productive, and has stimulated numerous initiatives. The journal *Religion & Education* published in 2013 a special issue on the interpretive approach with an editorial listing projects on pupil-to-pupil dialogue, citizenship education, intercultural education, RE and action research, assessment, community cohesion and teacher education (O'Grady, Miller & McKenna, 2013). Moral education is, however, not included on the list, con-

firming the impression of religious education and moral education as somehow parallel worlds.

According to Robert Jackson, the interpretive approach is "essentially an approach to understanding the ways of life of others and is intended as a complement to other aspects of religious education" (Jackson 2004, p. 87). In the following, this invitation is understood also to include moral education with an emphasis on *understanding the life of others*. Despite obvious differences, Benhabib's theoretical conceptions and the interpretive approach do merge on decisive points, which I will demonstrate.

An important theoretical background for the interactive universalism of Benhabib is her thorough analysis of the normative foundations of critical theory in *Critique, Norma and Utopia* (Benhabib, 1986). Here, a recurring theme is the critique of the philosophy of the subject. One of her major objections is that Hegel, Marx and the Frankfurt School suppress *the interpretive indeterminacy* of action. "Human actions, unlike objects and things, are not the property of their agents, or their "work". They do not embody or express a univocal meaning or purpose. Such a meaning or purpose can only be determined interpretively: in this sense, human action is fundamentally indeterminate" (Benhabib 1986, p. 87). From this claim follows the emphasis on narrativity, plurality and context which characterizes Benhabib's subsequent works.

The significance of interpretation is signaled in the entitling of Robert Jackson's interpretive approach, and this approach is also sensitive to plurality and context. A major step in the development of the interpretive approach was the move away from a phenomenology of religion which neither paid sufficient attention to the plurality of the religious context to be studied nor the interpretive contribution made by the researcher or the student in the study of religion (Jackson, 1997, 2016). Hereby follows the emphasis Jackson places on representation, interpretation and reflexivity. Both as a practice and a research field, religious education involves considerations on the positioning and contexts of researcher/teacher/student and of those who are studied.

It is possible here to see a parallel in Benhabib's reference to the generalized other and the concrete other. While the generalized other in Western moral philosophy has been an expression of a disembodied, disembedded commonality, the concrete other is the self as embedded in specific contexts constituted by a web of relations. Benhabib's critique of the tradition from Kant to Rawls is that the generalized other is an empty mask making it "meaningful to define a self independently of all the ends it may choose and any conceptions of the good it may hold" (Benhabib 1992, p. 161).

A challenge in Benhabib's moral theory is how conceptions of the good which possibly refer to other authorities than the communicative action between rational selves, are to be positioned within her moral theory. In other words, what is the relationship between the generalized other and the concrete other (here including a religious other)? Benhabib herself calls for an interactive universalism which "acknowledges the plurality of modes of being human, and differences among humans, without endorsing all these pluralities and differences as morally and politically valid" (Benhabib, 1992, p. 153). However, justification of moral claims among rational selves is decisive in Benhabib's theoretical conception, raising the question of how far the acknowledgement of the various modes of being human goes. Within discourse ethics, which Benhabib's work is continuing with explicit references to Habermas, the concern is "which norms and normative institutional arrangements could be considered valid by all those who would

be affected if they were participants in special moral argumentations called discourse" (Benhabib 2011, p. 67).

Returning to the interpretive approach certain normative assumptions are involved. There is no invitation to a value-free activity, as demonstrated in Jackson s emphasis on an ethical "grounding" of religious education in a societal consensus of values (Jackson 1997, p. 91). However, the purpose is not to settle truth claims (although it does not exclude a student-centered discussion of truth claims), but fundamentally to understand the life of others.

The implication is that although the approach to moral education informed by Benhabib and the interpretive approach to religious education do correlate on certain points, fundamental ambitions involved nevertheless seem to differ. According to the latter approach religious education is aiming at understanding the life of others. The ambition of the former approach involves the universalizing practice of settling moral claims. However, as distinct as this difference may be, as obvious is the possible mediation between these two approaches. The moral claims cannot be reached, according to Benhabib, without a factual or imagined discourse involving the life of concrete others influenced by my actions.

The mediating exercise, then, has not been closed, but is to be continued. The final question to an approach to moral education informed by Benhabib s conceptions and challenged by a school subject including religion, remains exactly to be how to mediate between the concrete and generalized other. An intriguing aspect of education is that such an issue inevitably becomes specific, to be settled by the teacher and the students. As part of a research approach the question may as well remain open, to be further explored in the study of classroom interactions.

Conclusion

The aim of this article has been to develop a theoretical approach to environmental ethical values in moral education which fulfils two concerns. The first is to acknowledge both universality and the significance of context. The second concern is to elucidate the role of religion within this theoretical approach. While the first concern has been elaborated with decisive reference to theoretical conceptions by Seyla Benhabib, considerations related to the second concern have been articulated while bringing in perspectives from the interpretive approach to religious education developed by Robert Jackson. The discussions have been illustrated with examples from an ongoing research project on moral education in lower secondary school in Norway.

A main conclusion is that the theoretical approach here presented seems to represent a critical perspective which makes it possible to identify salient aspects of moral education concerning sustainability. The roles of student experience, student agency, plurality, and the premises of the classroom discussions are all regarded as significant. Within education for sustainable development, it is also pertinent that Benhabib's concepts of jurisgenerativity and democratic iterations establish an approach through which moral claims may be considered to be recontextualized at various institutional levels. When it comes to the role of religion, the interpretive approach of Robert Jackson has strengthened the conception of the concrete other as an aspect of the context of the moral judgement

taking place. Here, however, a tension seems to remain within Benhabib's theoretical conceptions, which has not been resolved.

Finally, the author hopes to have accommodated for the potential contributions of moral education and religious education in the meaning making processes among students engaging in sustainability issues.

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Empathetic Design:
A Sustainable Approach to School Change

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Abstract

A descriptive case study approach is employed using a content analysis of the blogs of 36 school leaders who took part in the 2016–2017 Shadow a Student Challenge project and follow up interviews of five of the school leaders. This research was used to explore and describe how an empathetic design approach provided a greater vantage point for school leaders. By viewing school through the eyes of students, school leaders gain a deeper insight into the school experience. School leaders play a key role in establishing the culture, climate, and educational outcomes within their school environments. An empathetic design approach to school reform provides a stronger point for initiating change than an atmosphere focused on evaluation and accountability. Taking a school-based approach, encouraging school leaders to immerse themselves in the school experience, provides an opportunity for school leaders to gain empathy and insights foundational in generating meaningful and innovative change leading to sustainable education. Three major themes emerged from the findings: 1) pace and structure of the school day, 2) student learning experience, and 3) reflective and innovative insights.

Keywords: empathetic design thinking, school reform, school leadership, constructivism, socio-cultural theory, sustainable education.

Introduction

Despite the efforts of the federal mandated law No Child Left Behind (U.S. Department of Education, 2001) and the Common Core State Standards (Common Core State Standards Initiative, 2017; National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010) to increase student achievement and graduation rates, both initiatives have met with limited and mixed results (Duckworth, Quinn, & Tsukayama, 2012; Eppley, 2015; Husband & Hunt, 2015; Tienken & Orlich 2013). Students who dropped out of high school faced a 49 percent unemployment rate in 2015 (National Center for Educational Statistics, 2017) generating a socio-economic impact on their lifestyle and on the local, state, and federal support systems for those individuals and families who lived below the poverty level (Barry & Reschely, 2012). Some of the factors that influenced the rate of high school non-completion have been

identified as the low socio-economic status of the family, single parent families, poor academic success in school, high absenteeism, and high mobility rate (Barton, 2006).

Addressing family economic status, family structure, and the mobility rate of families with the intent of reducing the dropout rate may be difficult. Alternately, leaders who gain a stronger understanding of the school structure, culture, and climate could influence a student's decision to remain and be academically successful in school through graduation (Kearney & Levine, 2016; Kosar, Kosar, & Ogdem, 2016; Smith & Thomson, 2014). The practice of initiating system change based on deeper understanding of system users needs is called empathetic design. Positive change can occur when principals, who are leaders within their school and have the capacity to effect change within the system, observe and share student daily experiences. Understanding and acting on empathic understandings of the students may help school leaders to build a structure, culture, and climate that supports greater student success and increased high school graduation rates.

Theoretical Framework and Literature Review

Studies in business and health care explored the potential of empathetic design in business organizations where customers were observed in their own environment as an approach to gathering and analyzing information and using what is learned to apply towards future actions (Carmel-Gilfilen & Portillo, 2016; Daniel, 2015; Eslamifar, 2014; Kolko, 2010; Leonard, & Rayport, 1997). Existing research demonstrated the value of being empathetic to individual experiences and the informational frame in the learning process. Allowing leaders, who understand system capacity for change, to personally experience the student classroom conditions sets up a potential for innovation.

Aligned with empathetic design is the concept of social cultural theory where meaning evolves through social interactions within a specific culture (Bokova & Pluzhnikova, 2016; Packer & Goicoechea, 2000). Zygmunt's (2016) research study reinforced the importance of sharing experiences and information through discourse leading to a rise in consciousness and understanding within a bounded culture. Along with social cultural theory is the concept of constructivism where meaning is constructed through an experience (Barrett & Long, 2012; Mishra, 2014). El-Deghaidy's (2012) study focused on the importance of constructivism from the perspective of teachers' as researchers; however, the findings can be applied to school leaders who take an active role in constructing knowledge through personal experiences within the school culture. Social constructivism is the process where the individual constructs meaning and knowledge through social interactions (Fleury & Garrison, 2014; Walker & Shore, 2015). School leaders could find benefits in using empathetic design principles to gain a deeper understanding of the social culture in which students construct meaning leading to an "empathetic, critical integration of multiple perspectives" (Daniel, 2015, para 1). The findings from the present study provided insights into how the knowledge from empathetic design, social culture theory, and constructivist theory could be utilized by school leaders in becoming active participants in the students school experience, providing real time culturally responsive pedagogy (Daniel, 2015).

Statement of the Problem

The *Shadow a Student Challenge*, an initiative of the School Retool effort and in partnership with William + Flora, Hewlett Foundation, and the Innovation, Design Engineering Organization, known as IDEO, encourages school leaders to spend the day with a student to gain insights and a deeper empathy for the daily experiences of a student as they navigate the curriculum, schedule, and expectations of school life (shadowastudent.org). The project is an international movement to drive school change as a result of the understandings and reflections shared by school leaders who follow a student from the beginning of their day to the end of their day. In 2016–2017, the second year of the project, school leaders in 55 countries and all 50 states took up the *Shadow a Student Challenge* (shadowastudent.org). The Challenge involved a four-step process; school leaders prepare, shadow, reflect, and act (shadowastudent.org). This study focuses on the reflections of the school leaders who took part in the Challenge during the 2016–2017 school year.

The problem is that although businesses have used empathetic design effectively, little is known about how empathic design might work to improve outcomes in a school setting. The purpose of the descriptive case study was to understand how school leaders characterize their experiences when shadowing a student for the day. The study involved an in-depth exploration of school leaders' experiences, thus gaining an understanding and generating a detailed description of the experiences (Yin, 2013). A content analysis was conducted on data collected from 36 online public blogs where school leaders reflected on their shadowing experience followed by a content analysis of the transcripts of phone interviews with five of the participants. Comments from the project leader were a third point of data.

Research Questions

The following research questions were asked to assist in addressing the problem: How did school leaders construct meaning from spending the day shadowing a student?

SRQ 1: What experiences do school leaders share about their Shadow a Student Challenge that reflects on the pace and structure of the students' learning experience?

SRQ2: What can be learned from students' interactions (or lack thereof) in the classroom environment from the observations of the school leaders?

SRQ3: How did school leaders characterize reflective and innovative insights after shadowing a student for the day?

Method

Research design

This study used a descriptive case study approach employing a content analysis of the generated text. A descriptive case study approach provided a rich description of the phenomenon under study (Merriam, 2009; Yin, 2013) and using a content analysis was appropriate for analyzing the blog text and the narrative interview transcripts for themes and patterns (Merriam, 2009; Vaismoradi, Turunen, & Bondas, 2013). The inductive analysis was conducted on narrative data collected from 36 online public blogs where

school leaders reflected on their shadowing experiences followed by an analysis of the transcripts of phone interviews with the project leader and five of the participants.

Setting, population, sample

The geographic setting is the online environment. The text for the content analysis was retrieved from the public blogs of thirty-six school leaders who voluntarily posted their reflections after shadowing a student for the day as part of the *Shadow a Student Challenge* conducted during the 2016–2017 school year. School leaders were considered to be school principals or other individuals in the school system that were perceived as leaders at their school site and were familiar with the student population. The project leader and a purposeful sample of five school leaders drawn from the population took part in phone interviews to increase the reliability of the findings. The individuals meet the criteria of the present study to understand and describe the school leaders' perceptions of their day shadowing a student. The qualitative, content analysis allowed researchers to analyze narrative text drawn from a naturalistic setting exploring and describing the construction of personal meaning (Hsieh & Shannon, 2005).

Sampling

The-selected sample of participants were those who had direct experience with a student's day, have empathetic design thinking experience, and who were school leaders.

Recruiting the sample

The *Shadow a Student Challenge* project leader provided the researchers with permission to post a note on the *Challenge* website inviting school leaders who took part in the Challenge to a follow up phone interview with the researchers. Using a purposive process, five school leaders who reported innovations stemming from *their shadowing* experiences were invited to participate in a phone interview. Of the five who were interviewed, two were female and three were male. Interview participant roles were a superintendent, three principals, and an assistant principal. The project leader, a female, provided insights into the project through personal communication.

Blog Sample

The 36 blog entries comprised the sample of public data drawn for the content analysis stage of the research. Twenty-one men and fifteen women shared personal experiences, observations, and reflections on how the shadowing experience affected their perceptions. The average word count for blogs was 1025 words per blog (total 36915), ranging from 263 to 2706 words. The school leaders who published blogs included 2 superintendents, 26 principals/assistant principals, and 8 Head Teachers/ Supervisors. Schools represented were 6 elementary schools, 13 middle/junior high schools, 14 high schools, 2 K-12 schools, and 1 unknown.

Procedure

Data collection

Personal desktop and laptop computers were used to gather existing public content. In the first phase of this study, narrative text was collected from online public blogs and downloaded into a Google Doc. Duggan (2013) suggested the use of narrative analysis gathered from online blogs is similar to face-to-face recounting of events. The online blog space provided a different avenue or frame for participants to reflect and generate a narrative discussion on the *Shadow a Student Challenge*. Content was gathered from the *Shadow a Student Challenge* website (shadowastudent.org). The names of the authors of the blogs were removed and replaced with the code of P1 through to P36.

Procedures for analysis

In qualitative content the most effective analysis is where little to no preexisting theories exists, and an inductive process of open coding leads to a list of categories, themes, or patterns describing the phenomenon and providing an interpretation (Elo & Kyngäs, 2008). Researchers followed the process outlined by Johnston, Rasmusson, Foyil, and Shopland (2017) of developing a holistic understanding as each team member analyzed the blogs individually and collaboratively using a content analysis approach of coding, categorizing, and managing the analysis to identify emerging themes and patterns from the blogs. In the early steps of analysis, four different markers were useful to color code words and phrases in text related to specific research questions. The researchers reviewed the outcomes of the blog narratives to assess the extent the concepts related to empathetic design, socio-cultural theory, and constructivism. The result of the blog analysis was used to develop follow up interview questions for the project leader and five individuals purposively drawn from the larger sample of 36 school leaders. Follow up interviews allowed us to verify the findings, and to gain a deeper understanding into the experience.

Focused phone interviews provided corroboration for the findings from the content analysis of the blog narratives and generated new insights and new perspectives (Yin, 2013). Participants who responded to the note posted on the *Shadow a Student Challenge* website, by emailing the researchers, were informed of the purpose of the study and the process. Once participants agreed to be interviewed, they were provided with a Consent Form that was signed and returned to the researchers. A day and time for the phone interviews was determined and scheduled. Participants were provided with the interview questions prior to the interview, to allow for reflection and careful thought before the actual interview. All three researchers took notes during the interviews and compared and combined notes into comprehensive transcripts. A member's check was conducted giving each participant a transcript of the conversation to ensure validate and reliability of the interview notes (Merriam, 2009; Yin, 2013). One participant provided clarification of her response to the first question, and her revisions were included in the final transcript of her interview.

Results and Discussion

The results are presented by sub questions to the main research question: How did school leaders construct meaning from spending the day shadowing a student?

Sub-question one

What experiences do school leaders share about their *Shadow a Student Challenge* that reflects on the pace and structure of the students' learning experiences?

Responses from 26 school leaders' blogs that related specifically to the pace and structure of the students' learning experiences were identified.

Table 1 provides codes and comments for the theme of *comfort*. Four codes emerged: hunger, sitting, exhausted, and stress. School leaders' reflections expressed concerns over the lunch as the only time for nourishment, distress and exhaustion created by having to sit for long periods of time, and other challenges related to physical needs.

Table 1
School Leaders' Reflections on Pace and Structure: Comfort

Theme: Comfort – Codes: hunger, sitting, exhausted, stressed	
Code: hunger	
P1	Lunch time (thank goodness, I was so hungry)
P2	attempting to pay attention, I can only think about making it down to my office to get my almonds and water bottle
P3	some kids begin to ask what's for lunch
P4	Where's my coffee? I miss it. Wondering if students miss their morning beverage too,
P4	finally Lunch
P8	I need a snack around 9:30am
P18	I also was really hungry! I ate breakfast at 7:15 a.m. and went close to four hours before eating lunch
Code: sitting	
P4	students and faculty sit for a half hour... can be difficult for many students.... my student has trouble sitting quietly for 5 minutes
P4	my student, and in fact all the others, really seem comfortable in the space
P5	We sat... a lot. Sitting during class is exhausting... and some of those desks are so uncomfortable!
P8	Sitting for 50 minutes is hard
P9	how the students felt about the amount of time they [students] spend sitting versus standing while engaged in learning over a 41 minute period.
P18	sitting in a desk was really hard for me. At times, I found myself fidgeting and unsettled physically
P25	There isn't a lot of movement for our students during the day. It was evident to me that we need to try to incorporate more time for movement in our classes, especially in our block classes. I really believe that will help improve student engagement and if done properly, I think that students will be able to focus better for shorter periods of time and will actually produce better work samples.
P29	Lots of sitting on hard plastic chairs and in uncomfortable desks. Few opportunities for students to get up and move, other than between classes

Sequel to Table 1 see on the next page.

Sequel to Table 1.

P30	Kids need to move.
	Realize why students get bored – taking notes a lot.
	Felt like I wouldn't have missed much if I weren't there.
	Typical from when we remember our own schooling.

Code: exhausted	
P5	The transitions are difficult and draining
P11	Staying engaged for a 7:45 a.m. class was going to be a tall task, even after a couple cups of coffee
P22	Students generally are asked to sit at a desk for the majority of lessons and is quite exhausting.
P30	I am starting to daydream. Final Bell: I'm exhausted.
P33	It was a busy day, and I was certainly tired. those little minds get quite a bit thrown at them throughout the day, on top of just juggling being a 9-year-old!

Code: stress	
P4	Certain weeks can become overwhelming to the students when there are increased levels of pressure put on by impending assessments, due dates, and extra-curricular stressors.
P10	Lunch is crowded, but a place where students can relax.
P11	After a full day of school, the real work begins. There is homework to be completed, a paper to be written, a test to be studied for. The steady stream of work can feel relentless, and the teachers always seem to find a way to give tests on the same day
P18	Learning Lab provided quiet time and space… Great time to focus on my specific needs, and I see why it is one of the students' favorite classes

Table 2 provides codes and comments on the second theme of *structure*. Four codes emerged: rushing, disruptive, lunch, and recess. School leaders shared reflections on the challenges of the day being driven by a rigorous bell schedule, a long school day, a lack of transitions, pressure to meet deadlines and to be ready for assessments, and hectic, quickly moving classes.

Table 2
School Leaders' Reflections on Pace and Structure: Schedule

Theme: Schedule – Codes: time, rushing	
Code: time	
P2	rigorous schedule and course load
P4	before I know it, the bell rings. It wasn't enough time.
P5	very abrupt breaks and transitions throughout the day, dictated by the bell schedule
P8	I am not used to a bell driving my daily schedule
P10	Again, I made it to class on time
P11	Being a student is a full-time job. The hours are long,
P11	The work doesn't end at the end of the school day.
P13	What I found challenging…Getting to class on time.
P19	I found it to be a very long day
P24	**time management** and be able to **prioritize** to be successful in high school. This includes being **prepared**

Sequel to Table 2 see on the next page.

P30	Surprised by amount of time to relax – 20 minutes.
P32	children are engaged in learning activities from the start of the day to when they say their goodbyes at the door (recess was really the only unstructured time they had).

Code: rushing

P11	Just as I was beginning to understand the philosophy of philanthropy, the bell rang and I was ushered down the hall by a steady stream of students to my next class. I had four minutes to reach my destination and switch gears from history to science.
P15	It's easy to forget that a student's day is more hectic that we, as adults, tend to remember. There was a lot to do throughout the day; with eight 47-minute periods, a student schedule moves along quickly.
P16	One thing I recognized in all the classes is that you better keep up. They move fast and expect students to have their work and be ready to go. My student left with homework… I was just glad I didn't have to turn my work in tomorrow
P30	Every minute was planned – felt rushed

Sub-question two

What can be learned from students' interactions (or lack thereof) in the classroom environment from the observations of the school leaders?

Three themes emerged from the blogs of 17 of the school leaders relative to research sub-question two; teaching strategies, community, leader experiences of student pressures.

Table 3 includes the code engagement, which surfaced under the theme of teaching strategies. The reflections of the school leaders included the absence of student voices, the importance of collaboration and sharing, and the different ways learning can look.

Table 3
School Leaders' Reflections on Student Learning Experiences: Teaching Strategies

Theme: Meaningful

Code: engagement

P11	Being mentally present is a monumental task.
P17	Student engagement varies through the day and it is OK
P17	The student's perceived engagement level fluctuated. His engagement appeared highest when he applied the content that was being taught.
P17	student engagement appeared lowest when content was being delivered or instructions were being provided. He would rarely focus on the teacher, would play with his sweater, or tinker with a calculator or dry erase marker. I shared my observations with my student, he thought about his response before answering, "I felt a little tired during math (right before lunch time), but I was trying to pay attention."
P17	Ironically, it is what the teacher did *not* do that may have had the greatest impact. He didn't redirect the student when he was not looking right at him and he did not call his attention when he was playing with his sweater.
P17	It's clear that the student was paying attention, but was doing it in his own way, and his teacher understood this. It's critical to be aware of, and to be OK with, the reality that students listen and learn in many different ways, and being empathic to their perspective is crucial to helping keep students motivated and engaged in the learning process.

Sequel to Table 3 see on the next page.

Sequel to Table 3.

P24	I felt engaged in the learning and the process. But it (learning) looked many different ways. I was engaged when I was quiet, talking, listening, thinking, reading, writing, working individually, collaborating, using technology,
P24	It was amazing how much of an impact laughing had on my engagement
P27	[student] understands that learning (in part) is doing and knows some classes demand more attention, others are worthy of attention, and few require little attention… and she's right
P29	The group project was the only time throughout the day students were allowed to use technology as a tool to explore personalized inquiry in relation to content
P31	The constant conferring between table groups, sharing out with classmates and the teacher's continual monitoring and specific feedback made me feel like I was a mathematician Rockstar!!
P32	High levels of dialogue reflected classroom teaching and demonstrated strong critical and creative thinking
P34	Giving students the skills and little nudges in the direction of working hard helps our students see they can accomplish great things. Our teachers are always making us stretch ourselves, in directions we never knew we could

Table 4 provides the codes of relationships, support, and caring that emerged under the theme of community. Comments from school leaders reflected the importance of relationships among students and among students and teachers and the fact that students care when they know teachers care.

Table 4
School Leaders' Reflections on Student Learning Experiences: Community

Theme: Community – Codes: relationships, support and caring	
Code: relationships	
P4	There is so much power in the peer-to-peer conversations, relationships, and interactions. I hope everyone keeps that in mind and knows that you can profoundly change someone's day by just acknowledging their presence.
P5	Relationships are so key and to know we are surrounded by others that feel the same is very important to me.
P18	I watched students flow naturally between different social circles in and out of the classroom. It was a community full of joy and appreciation.
P28	But the highlight of the day (for both of us) was something so simple yet so powerful; the highlight of the day was a walk we took right after lunch. I'd take my student for a walk outside during which time she shared some of her future goals and details about her family life. There was so much I didn't know before this experience and wouldn't have known had we not taken the walk. Afterward, she told me she'd like to walk again on a "normal" day
P29	The students were polite and respectful in a very safe environment. It was obvious students were interested in doing well academically. Also, the teachers have good connections and share a mutual respect with their students.
P32	In the classroom I was in, there was a very strong sense of community.
Codes: support and caring	
P5	…when our students are put in very stressful situations, however, there is compassion and understanding surrounding them

Sequel to Table 4 see on the next page.

P5	From asking about an extra-curricular, to telling a student they were missed when they were absent, our teachers care and try to connect with our students in an effort to forge the all-important relationship and then leverage that in the learning process
P9	I found myself thoroughly appreciating the academic socialization that teachers established as a school culture norm.
P9	The students know, appreciate, and unconditionally value their teachers' strengths, are very willing to honestly share about their teachers' weaknesses, and are overall very accepting of who their teachers are as people.
P13	The students at the school are just so friendly. I was overwhelmed with kind offers from so many different groups of students for me to sit with them at breaks.
P18	I watched students flow naturally between different social circles in and out of the classroom. It was a community full of joy and appreciation.
P20	Our teachers care for our students. In every class period, I was glad to see each and every teacher give individual care and attention to each student.
P25	[Students] like to find ways to talk about what's important to them while still getting work done
P25	Our teachers do some amazing things. They love our kids unconditional
P29	The students were polite and respectful in a very safe environment. It was obvious students were interested in doing well academically. Also, the teachers have good connections and share a mutual respect with their students.
P32	In the classroom I was in, there was a very strong sense of community.

Table 5 provides the codes of anxiety, nervous, and worry that emerged under the theme of student identity. Comments from school leaders reflected a sense of being nervous throughout the day and anxiety over having to go to the bathroom.

Table 5

School Leaders' Reflections on Student Learning Experiences: Leader experiences of student pressures

Theme: Leader experiences of student pressures	
Codes related to anxiety, nervous, worry	
P4	because I'm an introvert, and I not only cherish, but require quiet reflective periods during the day. I know I'm not going to get that today. Wonder how other introverted kids handle this?
P4	Knowing this anxiety and frustration are real emotions that are felt daily by our students, was a reality check in the experience we provide.
P7	On my way to school, I felt myself getting a bit nervous. The kind of nervous you get on your "first day of school". Worrying about where I would sit, would I know how to answer a question when asked by the teacher?
P7	I was so relieved to see my friend in my first period class. As you know having at least one friend in your class is a huge factor in the amount of "fun" you have in class. I took my seat, as I began my day in Algebra Class… to say I was anxious was an understatement. Math was never a strong content area for me as a student in school. I felt myself hoping that I would not be called on
P7	Then the moment that I had dreaded happened! The teacher called on me to answer a question. I felt my heart begin to race, I felt all eyes turn and stare at me, I took a deep breath and said hesitantly….3? The teacher quickly said… correct! Very good!

P9	The nervous energy, self consciousness, and the uncertainty I felt was all-at-once, consuming. But I sang.
P22	I have a lot more respect and empathy for students once I experienced multiple scenarios that I needed to adapt to.
P24	I actually arrived to a class and had to go to the bathroom, but I chose not to ask to go because I remember the days of being a teacher and saying "why didn't you go during the passing period."
P31	I was in dire need of a restroom, but classroom policy is to wait until the 45 minute break. I tried to pay attention, but I was constantly watching the clock and wondering how can 45 minutes seem so long! Aye yi yi! Whew, was I glad to make a run to the restroom when our break came!

Sub-question three

How did school leaders characterize reflective and innovative insights after shadowing a student for the day?

With sub-question three, 23 of the school leaders' responses were connected to the two major themes of reflective insights, thoughtful insights on what was experienced by the individual, and innovative insights, insights that could lead to future actions.

Table 6 provides the theme of reflective insights surfacing through the codes of: related to teaching, students, personal meaning, *Shadow a Student* experience, and experiencing student identity. School leaders shared empathetic reflections of new understandings gained from the shadowing experience.

Table 6
School Leaders' Reflective Insights: New Understandings

Theme: Reflective Insights – Codes: teaching, students, personal meaning, Shadow a Student experience	
Code: teaching	
P4	We program kids to do what adults tell them. From the time we start "doing school," we know from grownups that there are rules, and schedules, and behaviors we need to abide by. By the time students reach high school, school has become their job. Go here, go there, do this, do that.
P10	Classes are way more active and engaging then they were when I was in high school, and way more active than when I taught.
P16	As the teacher reviewed with the student, I heard what was my favorite quote of the day, "This class is designed for YOUR success, not mine".
P28	Technology has had a HUGE impact on teaching and learning.
Code: students	
P1	I observed that they are brutally honest with each other, don't shy away from controversy, and have plans to make the world a better place.
P1	I had forgotten how passionate young adults can be about politics and felt a little sad that I had lost that excitement and energy when it comes to government.
P9	At this point I realized, the student, who at a glance seems like an ordinary adolescent...is actually quite extraordinary

P9	I came to realize and appreciate exactly how empathetic 12 year-olds can be. They know the difference between right and wrong, and they are able to eloquently express their feelings, more than they're generally given credit for being able to do.
P9	Why did it take me sitting in this class to realize that this is something that our students navigate each and every day, and all that's required, to build empathy, is a willing ear?
P9	I found the students to be unassuming and to find humor in their teachers' idiosyncrasies. In a follow-up conversation with the student, he told me he was surprised because he thought I knew our teachers better.
P11	As teachers and administrators, we can become so consumed with lesson planning, grading papers, and analyzing data that we lose sight of the fact that students are humans, too.
P11	The stresses that come from girlfriends, auditions, or cyber bullying don't pause because class is starting.
P16	Students are intrinsically passionate about learning. If they don't show it, we're not trying hard enough to help them find their passion.
P20	As adults, we sometimes try to quantify or pinpoint aspects of the school we think are important. The reality is that, for the 1,700 students at our High School, *everything* makes the list.
P23	Our kids are well adjusted, full of creative ideas and really thrive on being successful
P26	Our entire discussion on the way home was about the [award] he received. As I was driving and listening, I looked over and just saw him beaming with joy. It was the perfect end to a perfect day.
P27	She knows some classes demand more of her attention, others are worthy of her attention, and a few require little attention at all. And she's right.
P34	When students are able to experience something they love and enjoy, they want the weekend to pass to get to it. That's pretty cool. We need to help students by creating extra-curricular programs and clubs so they can be excited and see where they "fit in".

Code: personal meaning

P10	It was a positive and powerful experience for me.
P11	The energy of the halls, the relationships with friends and teachers, and the sense of belonging left me feeling fulfilled. I'm not ready to go back though; I'll leave that job to the students.
P16	It was the best day I have spent at work in a long, long time and probably the best professional development I could have experienced.

Code: Shadow a Student Experience

P5	While we were all students too, being reminded of what it was like and seeing it through the lens of a student in 2016 is incredibly important.
P6	as a former math teacher at this level, I can see how this shadow experience would have benefitted me as a teacher…
P6	the process to supervision and evaluation is insignificant compared to the shadowing experience.
P25	I need to shadow a teacher for the day
P27	I believe if every school and systems leader had to be a freshman (or a first grader, sixth grader, or senior) for just **one** day, our schools would be radically different. Significantly better. Exponentially =more student-centered.
P30	I know that I have colleagues that will support me in my ideas for change. I know this because many of my colleagues echoed the same information during the debriefing session.
P31	Every time we have an opportunity to "walk" in the "shoes" of another we gain perspective.

Table 7 displays the codes; Learning, student voice, administrative change related to theme of innovative insights. School leaders generated ideas and actions for future changes in their schools as a result of experiences the day as a student.

Table 7
School Leaders' Reflective Insights: Innovative Changes

Theme: Innovative Insights – Codes: Learning, Student Voice, Administrative Change	
Code: Learning	
P3	I realized that we must show them how to use the devices (cell phones, iPads, etc.) that they are literally connected to in order to learn, investigate, and communicate with others.
P7	What is indisputable is that how time gets used and allocated lies at the heart of reimagining the school experience.
P7	Thus we wonder: how might we reimagine our use of time so that we are even more effective producing "creative thinkers and bold leaders prepared to impact our complex global society?" But here's the catch: path dependence.
P18	But, it made me realize, in a lot of cases, we as adults find it hard to focus because we are so connected all the time we miss out on some important things going on right in front of our faces. Having no access to my world as principal allowed me to shift gears, to live in the moment, and observe and enjoy the things going on around me.
P24	The takeaway here is that the focus of teaching and learning should be on how to engage students, not how does engagement look. The reality is that it looks many different ways
Code: Student Voice	
P8	School needs to look different, structured different. We need to move, trust and give students more freedom in owning their learning
P16	Providing opportunities for increased student voice can help us learn much more about them and can help guide us closer to identifying what they think, feel, and need. How do our students learn best? What are their favorite types of learning experiences? What do they like most about learning?
P16	Students will help us transform our schools if we let them. We just need to look and listen!
P29	Student voices were mostly absent
P29	I wondered how school could become more learner-centered. What if we asked our students how they learn best and made adjustments accordingly? What if we took some time to reflect on what we truly believe about how students learn?
Code: Administrative Change	
P6	Examining teaching and learning from the eyes of the student compared to that of an instructional expert was challenging yet rewarding ~ this experience has had a profound impact on my approach to asking questions of educators whom I supervise. I have been maintaining my lens as an evaluator as I visit classes and complete observation reports; however, I am more attentive to the perspective of the student during these visits now and for this I am excited.
P9	Well, for our teachers, the challenge I issued then and issue now, is to be the reason that our students come to school.
P16	It is up to us, as adults in the educational system, to identify innovative ways to meet the needs of our students so that we can help them overcome the barriers over which we have control. We must help each and every one of them identify their passion for learning and celebrate it.

Sequel to Table 7 see on the next page.

P25	Until I was in the hallway, I didn't see another adult in many of the classes. That is both good and bad. It's good because the teachers are with the kids but it's bad because there is so much that teachers can learn from one another
P30	When a group of professionals band together for change, others begin to listen. I also believe that with my new found opinions of students and what they go through, coupled with the observation notes that I compiled during my experience, I will make a strong case that will resonate with my colleagues enough to get them to think on a different level. I think that I will be able to turn some heads and get some people to look at things in an entirely new perspective.
P30	As a group, they also chose to pose some questions for our district: How much homework is too much? Do our kids have enough time just to be kids? How might we better implement cross-disciplinary concepts to avoid teaching and learning in isolation? How can we get kids some reflection time during the day?

Triangulation

In the current study, triangulation involved a content analysis of school leaders' public blogs, school leaders' interviews, and the project leader's interview. An analysis of the school leaders' public blogs resulted in the emergence of six themes with related codes that were then assessed as to the extent of convergence with the interviews. Findings and sources from the analysis are in Table 8.

Table 8
Summary of Findings and Sources

Research Question:		
How did school leaders construct meaning from spending the day shadowing a student?		
Sub-question	Findings	Source
SQ1: Concerns over pace and structure	Comfort – hunger, sitting, exhausted, stress	Blogs, School Leader Interviews, Project Leader Personal Communication
	Schedule – time and rushing	Blogs, School Leader Interviews, Project Leader Personal Communication
SQ2: Reflections on student learning experiences	Teaching Strategies – engagement	Blogs, School Leader Interviews, Project Leader Personal Communication
	Community – relationships and support, caring	Blogs, School Leader Interviews, Project Leader Personal Communication
	Leader experiences of student pressures – anxiety, nervous, and worry	Blogs, School Leader Interviews, Project Leader Personal Communication
SQ3: Reflective and innovative insights	Reflective insights – teaching, students, personal meaning, Shadow a Student experience	Blogs, School Leader Interviews, Project Leader Personal Communication
	Innovative insights – learning, student voice, and administrative change	Blogs, School Leader Interviews, Project Leader Personal Communication

Discussion

The current study is based on the reflections of 36 school leaders who participated in the Shadow a Student Challenge during the 2016–2017 school year. The Challenge project encourages school leaders to spend the day with a student following them from the beginning of the day to the end of the student's day with the goal of using the insight and knowledge gain from the experience to drive change (shadowastudent.org). The study focused on the third step of the process, reflections.

From the school leaders' blogs, several themes emerged from the overarching research question: How did school leaders construct meaning from spending the day shadowing a student? These themes are expanded on in Tables 1–7, and a summary of the findings and sources are displayed in Table 8. School leaders who shadow a student for the day constructed new insights and understandings about the school environment by becoming a part of the student experience. School leaders also acquired a deeper empathy for the students as they immersed themselves in the social cultural educational environment. Major themes concerned the pace and structure of the day, community and teaching strategies, reflections and innovative insights.

Constructing meaning as derived from experience (Barrett & Long, 2012; Mishra, 2014) was evident in school blogs and reinforced during interviews. School leaders commented on pace and structure of the day noting the discomfort of extended sitting, restricted movement, challenges of transition, and lack of snacks and drinks. Conversely, leaders described the value of moving and feedback, and the unexpectedly engaging aspect of laughing with the class. Comments from P16 and the project director summed it up. "It's easy to forget that a student's day is more hectic than we, as adults, tend to remember" (P16). The project leader commented, "How are we expecting the students to get through the day if we are not meeting their basic needs? The principals would not have understood unless they had gone through the day".

School leaders also constructed meaning related to social interactions (Fleury & Garrison 2014; Walker & Shore, 2015) such as community and teaching strategies. The value of group work, critical thinking dialogues, relationships, and academic socialization were mentioned and supported through the blogs and interviews. Research by Irajzad and Shahriari (2017) reinforced the significance of relationships and interpersonal communication on the success and motivation on students. The comment, "Students like to find ways to talk about what's important to them while still getting work done," by P25 expressed the importance of social interactions in the school environment.

In addition, school leaders created reflections and innovative insights derived from the empathetic approach to student perspectives during the Shadow a Student Challenge. School leaders are in a position to effect change within the systems they lead. The goal of experiencing a student day was to gather and analyze information leading to future innovative changes (Carmel-Gilfilen & Portillo, 2016; Daniel, 2015; Eslamifar, 2014; Kolko, 2010).

Shadow a Student participants raised several questions to initiate innovation. "Thus we wonder: how might we reimagine our use of time at [school] so that we are even more effective producing "creative thinkers and bold leaders prepared to impact our complex global society?" (p. 7). "I wondered how school could become more learner-centered. What if we asked our students how they learn best and made adjustments accordingly? "How much homework is too much? Do our kids have enough time just

to be kids? How might we better implement cross-disciplinary concepts to avoid teaching and learning in isolation? How can we get kids some reflection time during the day?" (P30). One school leader summarized the insights. "Students will help us transform our schools if we let them. We just need to look and listen!"

The present research study explored and described the experiences and reflections of school leaders who shadowed a student for the day and built on existing literature and research to expand the potential of an innovative approach improving the educational experience for students. Empathetic design as a starting point for change was the focus of the research and will fill a gap in the literature as suggested by several researchers (Khalifa, Gooden, & Davis, 2016; Maringe, Masinire, & Nkambule, 2015).

A case study by O'Malley, Long, and King (2015) explored the complexity of responsibilities facing school leaders framed within the context of their school and community. The findings of the study emphasized the importance of school leaders being able to navigate the challenges and tumultuous nature of leading through collaboration being sensitive to multiple perspectives. Khalifa, Gooden, and Davis (2016) built on the importance of empathy as they discussed the impact a culturally responsive school leader can have on school reform. Further, Khalifa, Gooden, and Davis expressed the concern about the lack of research on empathetic design based change initiatives.

Maringe, Masinire, and Nkambule (2015) examined the challenges school leaders faced in schools situated in communities that face multiple challenges and could be considered deprived or impoverished. Leaders need to maintain stability with school staff/teachers, remain responsive to the community and parents, and engage in a school wide project to energize the whole school community. Leaders need to move from efforts to improve the educational experience, such as curriculum changes, to efforts to improve the school. The suggestion is empathetic leadership and social constructivist sensitivity can drive school improvement for the whole school community. More research with a larger sample is needed to explore inclusive school improvement efforts.

Limitations

The findings generated from the present study are limited to the scope and qualitative nature of a case study and cannot be generalized to a larger population. The study is also limited to describing the experiences of 36 school leaders who took part in the *Shadow a Student Challenge* and posted their reflections in a public blog. The findings cannot be used to predict future behaviors (Merriam, 2009). Another limitation could be researcher bias. To assist in mitigating researcher bias, each researcher conducted a content analysis of the narratives from the blogs and the interviews, followed by three to five rounds of collaborative analysis leading to a consensus on the intent and meaning of the school leaders' reflections.

Conclusions

School leaders constructed new meaning and knowledge by immersing themselves in the school culture and engaging in social interactions with teachers and other students. Being empathetic to the students' school experiences can provide school leaders with the motivation to initiate innovative change and increase educational sustainability for future generations. The research findings provided insights and understandings on an

alternative approach to producing change in the school setting leading to sustainable education. Innovative change based on close contact with the student experience could lead to a higher rate of student success and a higher rate for high school graduation by engaging school leaders in an empathetic design approach. Leaders, who gain empathy for student experiences could increase personal understanding of how students perceive the school day, how students characterize the socio-cultural environment of the school, and how students construct meaning from daily experiences.

Acknowledgement

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Learning from the Past for the Future:
How to Make Adult Education Sustainable

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Abstract

When compared to education with children, adolescents and students, adult education has particular opportunities and challenges, depending on stronger biographical influences: adults have developed their own learning style and learning competence and apart from more formal learning opportunities facilitated through digital learning and/ or learning in schools/ universities, there are many opportunities for informal learning, often influenced by experiences of education as a child. In this regard, biographical learning offers opportunities for transformational, organic, remembrance and experiences. The study, therefore, focuses on such kinds of adult education as a core element, particularly of Protestant adult education.

This paper presents a multidimensional concept of Protestant adult education, which integrates existing concepts into a memory oriented educational framework. Therefore, the theoretical considerations explain the phenomenological background of this particular concept. In a second step, this concept will be contextualized within the historical context of Protestant adult education. The summary emphasizes the particular aspect of educational coping with past, current and future experiences and situations.

Keywords: education, learning, memory, narration, stereotypes, transformation.

Introduction

Adult education – particularly Protestant adult education – can be compared with a human organism with two feet and legs, hands and arms, with a trunk and a head. The particular challenge hereby is to achieve balance; this concept is a core condition for sustainability, because it facilitates resilience and development (Franzenburg, 2016a). Protestant adult education balances:

- between the Reformation and Pietist tradition on one side (foot), and the tradition of enlightenment and modernity on the other (foot),
- between church or faith orientation (internal influence) as one "hand", and orientation to social challenges (external influence) as the other "hand",
- between alternative points of view and influences, having to integrate them like digestion or breathing by taking and providing.
- between holistic and analytical skills like the right and the left brain, and thus to coordinate different experiences and purposes.

In a similar way, preparing, organizing, facilitating, and evaluating adult learning courses means such balancing. Crucial, therefore, is not only encouraging the aspects of teaching and training skills, of the aesthetic, social, emotional, physical, intellectual, and other aspects of education, but also nurturing the soul and recognizing and acknowledging the inherent spiritual capacities (Dirkx, 1997; English and Gillen (2000) through a kind of "emancipatory spirituality" (Lerner, 2000) within the framework of religious pluralism and regard for the particular stage of faith (Fowler, 1991). Because of the diversity of adult education concepts, different places for adult education are crucial. Thus, lifelong learning becomes possible by using a variety of training places (school, university, adult education centers, academies, training on the job and in parishes); such diversity also facilitates a remembrance oriented learning, particularly concerning the Shoa (Adorno, 1997; Boschki et. al., 2010), e.g. by excursions, and offers wellness and soul care oriented education by providing a spiritual atmosphere, and also intercultural dialogue through an appropriate neutral environment. Concerning Protestant adult education, the particular theological concept is also worth considering: There are differences in educational concepts depending on the basic decision, whether people are acknowledged as images of God (focus on individual person) or clients in a market place (focus on group membership), whether Christian contents and secular contexts are related as two regiments of God (Luther; focus on autonomous learning), or kingship of God (Calvin; focus on rule oriented learning), whether creation (focus on global aspects) or the current life-world (focus on regional aspects) is the context of learning.

These observations underline that Protestant adult education has to balance between the poles of Church and society by religious contributions to social discussions and general education (DEAE, 1978), or by mutual sharing and considering experiences in the light of the faith/belief and of current challenges as the core tasks of a learning and teaching church (EKD, 1983).

Because it belongs to different areas, church and state (DEAE, 1978), Protestant adult education facilitates autonomous and life world oriented learning via systemic thinking, circular questions, holistic work, and networking (Jütte & Schilling, 2005). Thus, education becomes an individual and emotional search movement (Arnold & Holzapfel, 2008), focused on the intentions of the learning subject (Arnold 1996; Arnold & Holzapfel, 2008; Egger, 2008; Faulstich & Ludwig, 2004; Holzkamp, 1996; Ludwig 2000) during the interaction process between individual and collective structures (Dausien, 2008; Egger, 2008; Felden, 2008), which makes the learning person a "sociopoietic system" (Alheit, 1997) with the awareness of self-efficacy (Mikula 2009). Therefore, economically influenced education needs motivating cultural value and history oriented education and remembrance learning in addition (EKD, 1997). By assisting individuals and groups coping with particular challenges, it facilitates autonomous global understanding and solidarity and spiritual growth (Ebbrecht, 1992). Evaluating the remembrance texts concerning Protestant adult education 1971, 1981, 1986 (Seiverth, 2011), the continuing purpose of facilitating better understanding of social challenges by considering biblical texts, particularly from the Gospel, to develop new life styles, changing perspectives, and the integration into general adult education (DEAE, 1978) through acknowledging the particular learning and life-styles of the participants, and the particular context in profession, family and church (Hungs, 1976). This complexity and ambivalence of Protestant adult education is also a part of sustainability, because it facilitates changes of perspective and, thus, a longitudinal process of consideration and discourse.

Sustainable Adult Education in History

As a kind of organism, (Protestant and other) adult education shows – in an elementary way – a kind of "biography", which facilitates development, "growing up", and, thus, sustainability, including the opportunity – and temptation – of regression. Evaluating this "biography", the *"childhood"* can be found in Antiquity and Middle ages, when adults encounter with each other in order to discuss the art of "good life", depending on religious or on church programs or philosophical schools. The *"adolescence"* is characterized by becoming more and more independent from such institutional influences, which took place in the age of enlightenment. The *"adulthood"* began about 1800, when three types of people's education could be observed: encounters of citizens oriented on nobility models (Salons), training of workers in towns (by educational societies and institutions), and agricultural training of peasants (Ahlheim, 1982; Englert, 1992; Seitter, 2007). Since the age of industrialization, modernization, and nationalization in the late 19th century, adult education in Europe, particularly in Germany, became a core instrument for social progress, when associations were founded which combined social purposes with educational methods and approaches (Knoll, 1988). After World War II, new educational concepts grew up, which recognized the new democratic era. In a similar way, in other European countries too, particularly in Scandinavian ones, adult learning increased in the late 19th century, facilitated by private institutions, in order to give people knowledge and information so they could participate in their community. During the last decades, many concepts of adult education changed or were provided alternatively, such as individual care oriented and social care oriented ones, with the common purpose of encouragement, participation and autonomy. Other sources and core elements are social purposes, based on the "Volksbildung" during the "Weimar Republic" (Veraguth, 1979), which was aimed at preventing manipulation through encouraging discussions in meetings and communities, scientific societies and via itinerant teachers and preachers and by exhibitions; thus, theological discussion facilitated deliverance and emancipation of the working people from oppression (Ahlheim; 1982).

In 1961, a main organization (DEAE, 1978) was founded which integrated the different academies and other institutions, with the purpose of attracting benefit from state support. Since 1989 in Europe, a new interest in catechism tradition emerged (Werner, 1994) because, after the Fall of the German Wall many people came together who were not baptized but curious about the Christian tradition. Thus, a new awareness of historical contexts becomes crucial for understanding the particular role of Protestant adult education in German and European society (Nuissl von Rein, 2010; Seiter, 2007), which explains how different contents, methods and styles of adult education could become sustainable by contextualization.

Learning as a Balancing of Past, Current and Future Experiences

As an organic process, Protestant adult education integrates not only different approaches towards a particular content (individual, common, emotional, rational, active, meditative), but also past, current and future experiences in a holistic way. By remembering one's own experiences with a biblical story or a current social problem, by exploring its current meaning and by imagining future developments and challenges, people gain a new, multidimensional and holistic understanding during the process of lifelong learning (Apsel, 1985). This integrative approach acknowledges the transformative theories of

adult learning (Mezirow, 1991; Cranton, 1994, and Freire, 1990), which emphasize the intuitive, mythical and emotional sense of human experiences, the concreteness of the here-and-now, and the (individual and collective) unconscious as the primary source of creativity, vitality, and wisdom (Dirkx, 1997). Perspective transformation explains how the meaning structures that adults have acquired over a lifetime become transformed. These meaning structures are frames of reference that are based on the totality of individuals, cultural and contextual experiences, and influence how these individuals behave and interpret events (Taylor, 1998). Because narrative is a bridge to the other person, memory has a positive contribution to make in communities seeking reconciliation. Moments of catharsis represent nothing less than a hermeneutical shift from the horizon of the constructed Ego to the authentic Self, which is emphasized in philosophical (Heidegger, 1998) and spiritual tradition (Cohen, 2002).

In order to enable real reconciliation, the Jewish tradition is a crucial model because it recalls victims as well as blessings (Exodus, Shoa), and thus underlines remembering as a moral duty. Thanks to memory and the narratives that preserve the memory of the horrible, the horrible is prevented from being leveled off by explanation, or from being abused by the excesses of certain 'commemorations and rituals, festivals and myths' that attempt to fix memories in a 'reverential relationship' to the past, while ethical memory is restored with the good use of commemorative acts, over and above the abuses of ritualized commemoration (Duffy, 2009). As a work of 'mourning', memory becomes a source of reconciliation and an opportunity for new possibilities in the future. 'Mourning' the past and 'working through' what has happened there, must be brought together in the fight for the 'acceptability' of memories. Thus, forgiveness begins with a willingness to 'share mourning' (Ricoeur, 2004). In this context, empathy becomes a core attitude of remembrance sharing, particularly during discussions with people, who experienced cruelties in family; thus, empathy facilitates awareness of emotions, and allows voluntary participation (Boschki et. al., 2010).

Protestant adult education also can facilitate a healing of the past through memory by providing models from biblical tradition, such as the "memoria passionis" and "imitatio Christi" (Metz, 1998; Metz, 2007), and from history, such as Willy Brand, Vaclav Havel and others, who both begged forgiveness for the crimes against humanity committed by their predecessors. Thus, the dialogue between memory and forgetting becomes a source of sustainable healing and forgiveness concerning individual and collective memory, and even history written by historians, because narrative memory is never neutral, but told from a certain perspective. Therefore, narrative imagination can assist the 'universalisation' of remembering and, thus, facilitate sustainability by sharing memories, both individual and collective, in order to fulfill the 'moral duty' to remember as a means of paying the debt owed to all victims. These considerations underline that, for developing sustainable general education and worldview education pedagogy, narrative imagination is crucial for all ages of learners (Miedema, 2017), as is also acknowledging the role of culture for sustainable education (Laine, 2016).

Encouraging Humans – Encouraging Humanity

As an important element of the organic character of (Protestant) adult education, not only the complex conceptual and contextual character of contents and methods, but also the aspect of remembrance becomes a core condition of sustainable education,

particularly when – in the German context – it focuses on the Nazi period in all shades and aspects, whether it is in the view of persons, places or topics, as demonstrated by the following examples of past – present – analogies, which are taken from Protestant adult education programs (Evangelisches Forum Muenster) during the last decade.

Sustainable Elements of Coping with Totalitarian Regimes

When, for example, remembering the *Kreisau Circle*, a group of German dissidents centered on the estate of Helmuth James *Graf von Moltke* at Kreisau, Silesia (now Krzyżowa, Poland), the question of German opposition to the Nazi regime is emphasized, particularly the complexity of patriotic loyalty to Germany with opposition to the Nazis, when the Nazis had subverted the state to such an extent that the two were almost inextricable. Such remembrance, together with studying Molke's biography, facilitates coping with one's own family history, where similar considerations often occurred. Combined with excursions to Poland, the heritage of these events is kept alive. Such remembrance facilitates considering the coping with Nazi regime and with resistance during the years after 1945 and today: also remembering *Kurt Gerstein* (1905–1945), an SS officer assigned to the Hygiene Institute of the SS, and called upon to assist in the implementation of the "Final Solution". His hope to spread information about the Nazi cruelty and in this way to stop the movement, was in vain.

Comparing this dramatic biography of a historical whistle-blower with modern examples, such as Julian Assange and other Wikileaks members, facilitates awareness of the complex issue of responsibility of insiders. Because such – often hidden – experiences of German family and national memories not only concern the Nazi cruelties, but also the totalitarian system of Stalinism, also experiences concerning Gulag victims and eyewitnesses, or considering the life in the former German Democratic Republic (GDR) with Stasi and demonstrations, belong to the programs of Protestant adult education and facilitate awareness of the different kinds of totalitarism, as well as awareness of the particular situation in totalitarian systems which seem to develop in current times worldwide. Another core example for such analogies is the situation of (Latvian) Displaced Persons in Germany after 1945 (Franzenburg, 2016b), which can be compared with modern experiences of forced migration, displacement and integration. Therefore, learning about coping strategies within conflicts of any kind facilitates sustainability of such concepts by encouraging discussions about coping with oppression and suffering from different perspectives, and with different examples and contexts.

Sustainability by Values

Concerning sustainability, the relationship between faith, religion and science is crucial to (Protestant and other) adult education, particularly concerning both the beginning of life (stem cells, embryos prior to pregnancy, modularized desire for children, reproductive medicine, prenatal diagnosis, genetic engineering), as well as its end (patients, euthanasia, transplantation medicine, coma, euthanasia for children). Because of the "dark" history of genetics and euthanasia during the Nazi regime, such considerations and discussions demonstrate how remembering facilitates sustainable responsibility by preventing stereotyping, and by considering how to draw common benefit from the opportunities of such research in the future.

Remembrance as an Educational Method

Summarizing the evaluation of the different types of adult education workshops, it becomes clear that Protestant (and general) adult education integrates local and global, individual and collective, elementary and academic, aspects that have to do with caring for peace, justice and sustainability in any kind of expression. Therefore, such types of adult education go far beyond importing simple information, but attempt to transform the participant in the common and mutual process of learning by discourse or dialogue (Kroth & Cranton, 2014; Mezirow, 1991). Telling stories, reading stories from others and reading fiction all serve the purpose of exposing learners to alternative perspectives, a process that is at the heart of critical reflection and critical self-reflection, which is, in turn, is central to transformative learning (Jarvis, 2006) which, in particular concerns the revision of meaning perspectives (Mezirow, 2000), and focuses on the following steps of transformation (Kroth & Cranton, 2014):

- Experiencing a disorienting dilemma
- Undergoing a self-examination
- Feeling a sense of alienation from traditional social expectations
- Relating discontent as a reaction to similar experiences of others
- Exploring options for new ways of acting
- Building competence and self-confidence in new roles
- Planning a course of action
- Acquiring the knowledge and skills for implementing a new course of action
- Trying out new roles and assessing them
- Reintegrating into society with the new perspective

Reconciliation of Memory Cultures as an Educational Aim

Working with authentic and congruent models combines individual and collective aspects of biographies and narrations, as demonstrated by the examples taken from adult education programs. Thus, the structuring of memory can be an opportunity for a more creative engagement with the past.

This can be exemplified by the Protestant core issue of 2017, the 500-year anniversary of the Lutheran Reformation 1517. Concerning Reformation Day (October 31) as a core element, the concept of "pedagogy of pardon" (Ricoeur, 2004) demonstrates that the leading narrative which belongs to this day, particularly in the secular world, tells about a new denomination which was founded by this action. It has, in combination with national attitudes, influenced the internal and external images which people envisaged about Luther by integrating other pictures, such as Luther in Worms. Such narratives have developed since the 19th century a certain celebration atmosphere, which emphasizes Luther as the "German hero" together with others, such as Bismarck; thus, as a national and political symbol this dominated for a long time the (nationalist) discourse about reformation and influenced the historical and theological knowledge of more secular oriented people. Therefore, widening the knowledge and preventing selectivity and stereotypes is a core challenge for Protestant adult education. Because such stereotypes challenge not only internal debates in Protestantism, but also influence ecumenical discourses, and maintain mutual violations and traumata, reconciliation is a core element of this common learning process by narrative sharing of experiences, and a future oriented common remembrance.

Conclusions

After evaluating the Protestant adult education programs, the following points about sustainable adult education may be made:

Adult education combines – based on learning experiences in childhood – institutional and informal learning in a holistic way in a situation and learner oriented way. Adult education combines individual and collective experiences in a contextual way, in order to develop empathy for traumatic experiences and to develop strategies of model learning.

Adult education combines religious and secular values in an ecumenical and intercultural way in order to share the Christian message of the singular value of human dignity, which also influences the national constitutions of many nations and the philosophical thoughts of non-religious people.

Adult education combines regional and global adjustment in a contextualizing way, in order to understand the political, historical and economic backgrounds of regionally observed situations.

Adult education combines traditional and innovative settings in an integrative way, in order to draw benefit from encounters between very different approaches, attitudes or belief systems.

Adult education combines the conscious and unconscious sphere of personality in a holistic way, in order to become aware of emotions, stereotypes, visions, fears, traumatic and resource oriented experiences, and to integrate them into a multidimensional approach (including intercultural and intergenerational learning).

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Pre-service Teachers and Self-Efficacy: A Study in Contrast

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Abstract

With increased emphasis on student achievement in schools, teacher education programs are challenged to meet the demand for highly effective teachers. Ensuring that pre-service teachers feel confident in their ability to teach, prompted one Midwestern University to implement an extended student teaching placement. The idea behind this endeavor was two fold; first to provide future teachers a more robust and diverse classroom experience; and secondly to provide more opportunities for students to get experience in high-risk school settings. There is very limited research on the impact of year-long student teaching on a teacher's sense of efficacy. The purpose of this study was to compare the efficacy of teacher candidates placed in a year-long student teaching placement to teacher candidates placed in a traditional one semester (16 week) placement. All teacher candidates completed a 24 question *Teachers' Sense of Efficacy Scale* as well as nine demographic questions. The survey developed at Ohio State University by Tschannen-Moran and Woolfolk Hoy (2001), measures teacher attitudes towards working with students, student engagement, instructional practices, and classroom management. Specifically, the questions represent essential tasks in teaching such as assessment, differentiating lessons for individual students, dealing with students with learning challenges, repairing student understanding, and encouraging student engagement and interest. The results of the study indicated that pre-service teacher candidates in a year-long student teaching placement were more satisfied with their ability to engage students and manage classroom behavior than their counterparts in a traditional one semester placement.

Keywords: Teacher efficacy, student teaching, teacher retention, sustainability.

Introduction

Sustainability in the workforce as it relates to education means that pre-service teachers are prepared to face the realities of teaching (Williams, Edwards, Kuhel & Lim, 2016). Multiple studies show that the teacher is a key player in the success of the individual student in the classroom (Bricker, 2000; Siverman, 2007; Pijl & Frissen, 2009 as cited in Gedžūne, 2015 p. 96). Developing this professional state of mind has

significant implications for teacher education programs as they attempt to identify the dispositions needed by educators in the day-to day life of a school. According to the United Nations Decade of Education for Sustainable Development Initiative, the goal of sustainability is to create a world where every child has the opportunity to benefit from a quality education. (Strode, 2013).

To help pre-service teachers maintain their interest in the profession of teaching and use those skills to help all students they teach, it is paramount that they have a strong sense of self-efficacy (Gedžūne, 2015). This is especially true for teachers who work in high-poverty, low-income schools. According to Freedman and Appleman (2009) when teacher education programs provide field experiences and coursework based in urban schools, pre-service teachers can develop a sense of empowerment which is related to retention, especially in high-poverty, low income schools. They also emphasize that when teacher education programs provide field experiences and coursework based in urban schools, pre-service teachers can develop a sense of being called into the profession, which is related to retention, especially in high-poverty, low-income schools. It is in these high-poverty, low-income settings that sustainability and the opportunity for a quality education for all children, is paramount.

Pre-service Teachers and Self-efficacy

The profession of teaching is stressful and often results in teacher burnout (Prilleltensky, Neff, & Bessell, 2016). With this in mind, it makes sense that pre-service teachers experience stress in a school culture they do not know and with a cooperating teacher they have never met. In Bandura's (1997) classic study of pre-service teachers, he found feelings of repeated success were helpful in managing teaching stress. Although student teaching is generally associated with positive emotions for pre-service teachers (Hascher, & Wepf, 2007), other emotions like "anxiety, nervousness, and worry" are also prevalent (Hascher & Hagenauer, 2016, p. 22). Studies have found that student teaching prepares pre-service teachers for their role as a teacher and plays a significant role in teacher retention (Darling-Hammond, Newton, & Wei, 2010; Gedžūne, 2015). Pre-service teachers need to feel connected and have a sense of self-efficacy for the responsibilities they face when teaching (Ryel, Bernsausen, & van Tassell, 2001).

Self-efficacy appears to be an important motivating factor in how pre-service teachers view themselves (Arnold et al, 2011). Moulding, Stewart, and Dunmeyer (2014, p. 61) define self-efficacy as the "teachers' belief in his or her ability to successfully perform the tasks of teaching". In addition, studies have found that student achievement and self-efficacy are related (Guo, Piasta, Justice & Kaderavek, 2010; Woolfolk-Hoy, 2005; Shoulders & Krei, 2015). According to Woolfolk-Hoy (2005), "teachers with a strong sense of efficacy are more enthusiastic, more open to new ideas, and more willing to use complex strategies" (as cited in Moulding, Stewart & Dunmeyer, 2014, p. 61). The same study found that teacher's self-efficacy is related to student achievement.

Self-Efficacy and Teacher Mentors

In a study by Woolfolk-Hoy (2005), a positive relationship was found between a pre-service teacher's self-efficacy and the support they receive from their teacher mentor. (Hamman et al., 2006). According to the Hamman study, support was defined by both

the amount of time that the teacher mentor worked one-on-one with the pre-service teacher, as well as, the type of support the teacher received.

Bonnie Bernard (1995) found pre-service teachers need to have opportunities for participation that are meaningful and according to He (2009) pre-service teachers must develop strategies to maintain their enthusiasm for teaching. It stands to reason that positive experiences for first year teachers are linked to quality mentoring experiences. According to Ambrosetti and Dekkers (2010), mentoring usually occurs during student teaching in most pre-service education programs. The time the pre-service teacher spends in the classroom often varies in length therefore; the types of mentoring relationships that are formed may be significantly different.

According to Lai (2005) "mentoring plays an important role in enhancing novice teachers' opportunities to learn. (as cited in Ambrosetti and Dekkers, 2010, p. 44). Lave and Wenger (1991) identified a community of practice consisting of old and new members who share a common passion. New members are those members that gain valuable experience and knowledge when interacting with others and modeling older members. When this practice is applied to student teaching, it is believed that the new members (the pre-service teachers) and the older members (teacher mentors) interact for a common purpose. The senior members are considered those who have gained knowledge and have more experience teaching and the new members are those students who have little to no experience teaching. Ideally, this positive social interaction between the two groups help the pre-service teachers (new members) overcome any barriers because they would have access to the knowledge and experience provided by the more seasoned teacher.

Some studies have found that new teachers often begin their first job with a distorted view of what constitutes 'good teaching' (de Jong et al., 2013). The discrepancy between what pre-service teachers perceived would happen their first year of teaching and what actually does happen is referred to as "reality shock" which results in high turnover and low retention of beginning teachers (OECD, 2005; Sinclair, 2008). Kim and Cho (2012) define reality shock for teachers as "a gap between what they learned in the teacher education program and the reality that they may face during the first year of teaching, with respect to the work of teaching the context in which teaching will occur" (p. 68). Studies such as Ingersoll and Smith (2004) and Johnson and Birkeland (2002) suggest that new teachers with a high sense of self-efficacy will remain in the profession. According to Klassen and his colleagues (2013), self-efficacy beliefs of pre-service teachers "provide a protective shield against low commitment and teacher attrition" (p. 1303). Low commitment to the teaching profession during this first year has been linked to decisions to leave the profession in the first five years (Rots et al., 2007). Teachers with self-efficacy would not be anxious or fear unexpected challenges because they believe they could deal with those situations (Kim & Cho, 2012).

Self-Efficacy and Effective Teacher Education Programs

"The necessary qualifications by which a pre-service teacher will learn to become an effective teacher in the future are attained through teacher education programs" (Temiz & Topcu, 2013, p. 1435). Characteristics of teacher education programs like length of field placements, the relationship between the university and the district where the teacher-candidate is placed, the school's climate and the overall acceptance of the pre-service teacher within that climate, can have an effect on the learning process and the success of that candidate (Hascher & Kittinger, 2014).

According to Klassen et al. (2013) teacher education programs should address the stress experienced by pre-service teachers and focus on developing strategies to manage that stress. Kim and Cho (2012) believe that effective teacher education programs should prepare students to be resilient and have high self-efficacy by building successful teaching cohorts so pre-service teachers can share their teaching experiences and, address the issue of reality shock.

A study of teacher education programs by Ronfeldt, Schwartz and Jacob (2014) suggests that teacher education programs can improve pre-service teacher preparedness and impact the future success of those pre-service teachers by increasing the time they spend in the classroom. Another study by Hung and Waxman (2009) suggests that the school where student teachers are placed is important and matters in terms of satisfaction of the student teacher and that future teacher's commitment to the profession. This is important because, according to Ciani, Summers and Easter (2008), a supportive environment in which a pre-service teacher experiences a positive teacher community may help to strengthen their self-efficacy. According to Knoblauch and Chase (2015) even though research indicates that teacher education programs must have multiple field placements in diverse settings like high minority, high-poverty, inner city schools, there is little evidence of pre-service teachers' sense of self-efficacy as it relates to these settings.

A mid-western university in collaboration with a local school district, developed a year-long student teaching program designed to help pre-service teachers develop relationships that would lead to a stronger sense of efficacy. Teacher candidates were placed in high-poverty low-income schools where additional support was needed. "*Teach Now: Transform Tomorrow",* a pilot program for 15 pre-service teacher candidates was designed so that candidates would start at the beginning of the school year and stay in the same classroom through early May. Pre-service teachers applied to be part of the pilot and were selected based on interviews. Principals then matched each pre-service teacher with a mentor teacher in their respective schools.

This program differs from a traditional student teaching experience in several ways: First a traditional sixteen-week student teaching experience does not allow for pre-service teachers to be involved across an entire school year and secondly, this program allowed for continuity of services for K-12 students enrolled in high-poverty schools. It was believed that this consistency of placement (being there throughout an entire school year) would allow for stronger relationships with students and provide the teacher candidates with a more realistic view of a public-school environment.

Research Methodology

Design and Sample

An exploratory study was conducted to compare the efficacy in teacher candidates placed in a year-long student teaching placement and teacher candidates placed in a traditional one semester (16 week) placement.

A total of 144 undergraduate teaching candidates at a mid-sized, public, NCATE accredited, university in the Midwest participated in this study. Each participant had completed the requisite teacher preparation and content area coursework, finished all field observation experiences, and participated in pre–student teaching practicum teaching in the public schools and were fully eligible to student teach. Teacher candidates in the traditional one semester student teaching placement (K-12) were asked to participate

after completion of their student teaching. Surveys were completed in fall and in spring by those teacher candidates who participated in a traditional one semester placement in both elementary and secondary settings. Teacher candidates in the year-long student teaching placement were asked to participate at the completion of their year-long student teaching placement. All teacher candidates completed the 24 question *Teachers' Sense of Efficacy Scale* as well as nine demographic questions.

Instrumentation

The *Teachers' Sense of Efficacy Scale (TSES)* developed at Ohio State University by Tschannen-Moran and Woolfolk Hoy (2001) was selected for this project. This survey measures teacher attitudes towards: working with students, student engagement, instructional practices, and classroom management.

The questions are designed to depict distinct areas associated with a teacher's role. Specifically, the questions represent essential tasks in teaching such as assessment, differentiating lessons for individual students, dealing with students with learning challenges, repairing student understanding, and encouraging student engagement and interest (Tschannen-Moran & Woolfolk Hoy, 2001).

The long form of TSES which consists of 24 questions ranked on 9-point Likert scale was used. The responses ranged from 1 – nothing, 5 – some influence, to 7 – quite a bit, and 9 – a great deal. Sample questions include: To what extent can you use a variety of assessment strategies? How much can you do to control disruptive behavior in the classroom? How much can you do to get students to believe they can do well in schoolwork? For reliability data see Table 1.

Table 1
Reliabilities of the Teachers' Sense of Efficacy Scale

	Long form		
	Mean	*SD*	*Alpha*
TSES (OSTES)	7.10	.94	.94
Engagement	7.30	1.10	.87
Instruction	7.30	1.10	.91
Management	6.70	1.10	.90

Results

An independent samples *t* test was conducted to evaluate the impact of year-long student teaching on the efficacy of teacher candidates in student engagement, instructional practices, and classroom management are shown in Table 2. Levene's test evaluates the assumption that the population variances for the two groups are equal. The variances are very similar and, consequently, the standard *t* test and the *t* test for unequal variances yield comparable results. Since the variances for the two groups are not different, but the sample sizes are different, the *t* value that does not assume equal variances will be reported, thereby avoiding the homogeneity of variances assumption. Teacher candidates in a year-long student teaching placement reported significantly higher levels of efficacy in student engagement than teacher candidates in a one semester student teaching place-

ment. Pre-service teacher candidates in a year-long student teaching placement feel more confident in their ability to engage students than those that only had a traditional teaching placement.

Similarly, teacher candidates in a year-long student teaching placement reported significantly higher levels of efficacy in classroom management than teacher candidates in a one semester student teaching placement. The year-long teacher candidates felt very confident in their classroom management skills versus the one semester teacher candidates. Conversely, teacher candidates in a year-long student teaching placement and teacher candidates in a one semester student teaching placement showed no significant difference in their efficacy in instructional practices. Both groups of teacher candidates felt very efficacious in their instructional practices.

Table 2
Differences in Efficacy for Teacher Candidates Based on Student Teaching Placement

Variable	Yearlong student teaching placement (N = 15)		One semester student teaching placement (N = 59)		T	D
	M	SD	M	SD		
Efficacy in student engagement	7.96	.69	7.52	.78	-2.13*	-.28*
Efficacy in instructional practices	7.98	.72	7.62	.77	-1.68	-.23
Efficacy in classroom management	8.18	.47	7.56	.80	-3.82*	-.42**

*$p < .05$, **$p < .01$.

Table 3 represents all elementary education majors that participated in student teaching. The authors looked at the difference between teacher candidates that were elementary majors that did their student teaching in the year-long program and teacher candidates that were elementary majors that did their student teaching in a traditional, one semester, student teaching placement. When looking at their efficacy in student engagement and instructional practices, no significant difference between the two groups of teacher candidates was found. Conversely, teacher candidates in the year-long student teaching placement reported significantly higher means in classroom management than the teacher candidates with the one semester student teaching placement.

Table 3
Differences in Efficacy for Teacher Candidate Based on Student Teaching Placement

Variable	Yearlong student teaching placement (N = 15)		One semester student teaching placement (N = 22)		T	D
	M	SD	M	SD		
Efficacy in student engagement	7.96	.69	7.56	.72	-1.70	.58
Efficacy in instructional practices	7.98	.72	7.63	.81	-1.34	.22
Efficacy in classroom management	8.18	.47	7.75	.70	-2.07*	.34*

*$p < .05$

The mean efficacy scores for teacher candidates in a year-long student teaching placement and traditional, one semester, secondary student teaching placement is represented in Table 4. The authors found significant differences in the efficacy in student

engagement, instructional practices, and classroom management between the groups. Yearlong student teaching placement candidates reported significantly higher in all three areas as compared to secondary teacher candidates in the traditional, one semester, student teaching placement.

Table 4
Differences in Efficacy for Teacher Candidates Based on Student Teaching Placement

Variable	Yearlong student teaching placement (N = 15)		One semester secondary student teaching placement (N = 21)			
	M	*SD*	*M*	*SD*	*T*	*D*
Efficacy in student engagement	7.96	.69	7.33	.86	-2.32*	.37*
Efficacy in instructional practices	7.98	.72	7.45	.83	-2.01*	.34*
Efficacy in classroom management	8.18	.47	7.15	.93	-4.32**	.57**

*p < .05, **p < .01.

Discussion

Results of this study suggest that teacher candidates in a year-long student teaching placement were more efficacious in their ability to engage students and manage classroom behaviors than pre-service teacher candidates in a traditional one semester placement. It could be said that this is a result of their extended stay in the classroom. None the less, self-efficacy is crucial to what teachers believe, how they feel, how they motivate themselves, what activities they do in the classroom, and also the effort and persistence they put into the profession (Pajares, 1997; Pintrich & Schunk, 2002). By starting at the beginning of the school year and working with the same students throughout the year, the year-long teacher candidates felt very confident in their ability to manage behavior in the classroom. The year-long teacher candidates had more time to learn how to engage students, as well as more time to get to know the school culture, and thus feel more confident in managing behavior. This correlates with the study by Tschannen-Moran, and Woolfolk-Hoy (1998) that reported that teacher efficacy was also a predictor of classroom management skills like planning and organization.

Moreover, both groups of teacher candidates had a strong sense of efficacy in their ability to use effective instructional practices in the classroom. Not only do pre-service teacher candidates report a higher sense of efficacy, pre-service teacher candidates that participated in a year-long student teaching placement *perceive themselves* more prepared to teach; therefore, ultimately providing school districts with new teachers that are highly efficacious in student engagement, instructional practices, and classroom management. In addition a year of focused teaching experience in a classroom setting made the year-long teacher candidates more prepared to teach. This is important because teachers with a high sense of efficacy tend to be flexible in their approaches to different teaching methods (Weiner, 2003), show great commitment to the profession (Coladarci, 1992) and work with students longer, especially those who have behavior and/or learning problems (Ashton, & Webb, 1986).

Furthermore, when looking at the difference between the year-long teacher candidates and teacher candidates placed in a traditional, one semester, secondary placement, the

year-long teacher candidates were more efficacious in all three areas; student engagement, instructional practices, and classroom management. Yearlong teacher candidates spend significantly more time in the classroom during their student teaching placement and receive more mentoring from the supervising teacher than those in the traditional student teaching placement. Additionally, secondary candidates only minor in education and major in the content area at this university. The difference in the amount of education course work could also impact the efficacy of the teacher candidates at the secondary level.

Research has shown a link between teacher efficacy and student achievement (Goddard, Hoy, & Hoy, 2000; Tschannen-Moran & Barr, 2004). Tschannen-Moran & Woolfolk-Hoy, 2001 found it to be a powerful predictor of achievement in students. While these results are not indicative of student achievement, school leaders who hire new teachers with a strong sense of efficacy expect that these teachers will be more effective than their counterparts who have far less classroom experience. In return, when school districts are hiring new teachers that demonstrate a high sense of efficacy, recruitment from higher education institutions that are cultivating these new teachers will be impacted. Thus, the effect of a pre-service teacher candidate with a year-long student teaching placement can and will be measured by employability skills. These employability skills are often associated as traits of effective teachers. Yearlong student teachers, with a high sense of efficacy in student engagement and classroom management, may be considered for employment more than their peers who did not have a year-long student teaching placement. There is a need for continual scholarly interest in the field of teacher self-efficacy as accountability for effective teachers across the nation continues and as the focus on teacher quality is ever-present in K-12 school districts and higher education institutions.

Implications and Future Research

The implications of this study relate to both teacher education and K-12 school districts. This study provides quantitative information about the perceptions of pre-service teachers' efficacy in student engagement, instructional practices, and classroom management who are placed in a year-long student teaching placement versus a traditional one semester placement. A higher education initiative in teacher education could be designed so that all pre-service teacher candidates are placed in a year-long student teaching placement. In addition, providing professional development opportunities in the areas of student engagement and classroom management to pre-service teacher candidates could dramatically increase that teacher candidates' efficacy in those areas.

The design of secondary education courses could be modified to include more course work that will affect how teacher candidates learn classroom management, instructional strategies, and student engagement. Further research is necessary to determine the specific attributes of the year-long student teaching placement that would be most effective in promoting this type of reform in higher education.

More research is needed to determine if a year-long student teaching placement cultivates highly efficacious teachers. Especially, investigating qualitatively the difference between elementary school placements versus secondary school placements and why there is a difference in their efficacy. Qualitative studies to determine which elements of a year-long student teaching placement are most effective and impactful on future teaching success are also needed. Using this information teacher preparation programs can design quality student teaching placements which result in teachers who are more prepared for the 'reality' of teaching.

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Effects of Contextual Factors on ESD in Teacher Education

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Abstract

Education for sustainable development (ESD) guides and empowers educators to reshape their thinking style and move towards a sustainable future. It has attracted a lot of attention and been studied in different perspectives. However, contextual factors have not been studied in relation to sustainable development for teacher education. Therefore, this study aims to find out the possible effects of changing contextual factors on pre-service and in-service teachers in terms of sustainable education for their profession. For this purpose, 267 pre-service teachers from four different universities and 50 in-service teachers from 15 different cities participated in the study. Out of 317 participants, 245 stated that contextual factors influence their teaching habits adversely, while 54 reported that they ignored the outer factors. In light of the data gathered, it can be said that the participant teachers were mostly pessimistic about the effect of contextual differences on ESD. Based upon participant statements, a new theory emerged. According to this theory, there are personal (P), institutional (I), stakeholder-related (S), environmental (E) and training-related (T) factors which positively and/or negatively influence ESD in teacher education. In this regard, the new theory was formed with the first letters of the related factors and called P.I.S.E.T. These findings suggest that pre-service teachers should be exposed to various school settings during their practicum and in-service teachers should receive context-related support from the stakeholders to enhance their professional skills and act in line with the principles of ESD.

Keywords: Teacher education, contextual factor; student teachers; in-service teachers; sustainability; sustainability education.

Introduction

Different school settings like rural, suburban, and urban take an important role in the formation of self-efficacy beliefs of student teachers since the student teacher is expected to adapt to the environment and develop coping strategies accordingly. With the participation of 102 student teachers in rural, suburban, and urban settings, Knoblauch and Hoy (2008) found that while all the participants' self-efficacy levels increased, urban student teachers showed significantly lower perceived collective efficacy.

The effect of contextual factors on teaching practices and professional sustainability of teachers needs to be questioned more closely to respond to real needs of teachers and prepare them in line with the requirements. What is more, the perspectives of pre-service and in-service teachers should be compared to detect the mismatch if there exists any and redesign the teacher education models more appropriately. Therefore, this study aims to find out the opinions of teachers about the effect of contextual factors on their teaching practices and professional sustainability, and compare the views of pre-service and in-service teachers to contribute to the understanding of a theory-practice gap in different school settings.

Literature Review

Contextual Factors in Teacher Education

The underlying reason to prioritize contextual factors lies in the fact that especially beginning teachers may easily get discouraged during their first year due to hardships and adaptation problems. For example, beginning special education teachers reported problems related to insufficient curricular materials, dealing with behavior management/discipline, and obstacles to collaboration frequently (Kilgore, Griffin, Otis-Wilborn & Winn, 2003).

Based upon the reflections of pre-service and in-service teachers, policy makers could make changes in the structure of teacher education programmes. With the participation of 1147 teachers completing the questionnaires, it was found that the teachers stating to be well-prepared in advance to cope with the first year of teaching were those who had taken courses related to content, methodology, planning and assessment (Ingvarson, Beavis & Kleinhenz, 2007). Therefore, reflections of pre-service and in-service teachers deserve closer attention in policy management and implementation in terms of teaching standards so that previous beliefs and practical realities of teachers do not clash in the classroom when they meet students.

The need to refer to the effect of contextual factors within teacher education is a highlighted aspect in research on teacher education undertaken by Grossman and McDonald (2008). School climate including such elements as parent/community relations, administration, student's behavioral values was found to be related to emotional exhaustion, depersonalization, and feelings of low personal accomplishment, which cause burnout for all together. In addition, it was revealed by Grayson and Alvarez (2008) that the inverse relationship between school climate and burnout was mediated by teacher satisfaction levels for both emotional exhaustion and depersonalization dimensions.

The role of contextual factors is of great importance for further educational actions since what will be done will be determined according to what is needed on the basis of what has been done. Teachers' practical experiences can be employed as the starting point for further actions. In other words, teachers' suggestions and criticism should be taken into consideration while making educational decisions. Basing the educational decisions and policies on the classroom data coming from the concrete experiences of teachers and administrators could be productive in the long term in order to set more realistic goals and fulfil these goals appropriately. Schildkamp and Kuiper (2010) touched upon the positive effects of using classroom level data by teachers for educational decisions and school level data by school directors for educational policies in the Netherlands.

Reflections of pre-service teachers are important since they begin to shape their beliefs and practices in parallel with the theoretical knowledge and practical applications gained at university before graduation and certain personal, professional and contextual aspects encountered during pre-service teacher education programmes could be influential on their further teaching practices (Naylor, Campbell-Evans & Maloney, 2015). The school environment affects not only student motivation but also teacher motivation. Positive and encouraging contextual variables have the potential to positively contribute to the teacher's professional development while unfavourable contextual variables hinder improvement and damage motivation. The first years of teaching career are crucial for the long-term retention of teachers so new teachers should be under close scrutiny to detect their real needs and provide an in-service training appropriately. With the participation of 589 beginning French-Canadian teachers working at elementary and high schools, it was found that school environment factors such as work overload, control, recognition, and sense of community affect teachers' emotional exhaustion and their attitudes towards teaching profession (Fernet, Trépanier, Austin, & Levesque-Côté, 2016).

Sustainable Development in Teacher Education

Teacher education is a complex and multi-dimensional field which necessitates the participation of various stakeholders. Among these, academicians or in other words teacher educators play an important role for teacher candidates. With the courses they deliver, they become either a good model or a bad model for their students so that teacher candidates reach a synthesis about what to become and what not to become when they graduate and become an in-service teacher. Thus, it can be said that teacher educators' habits influence student teachers' preferences to some extent. In this sense, Aslandağ Soylu, Yanpar Yelken and Külekci (2016) conducted a study on 211 teacher educators in Turkey and examined their lifewide learning habits which are included under the umbrella term of sustainable development. The participant teacher educators' lifewide learning habits were found to be at a high level based on their mean scores (135,27) with regard to six dimensions: problem solving habits, professional development, cultural interaction habits, leadership habits, care-based habits and leisure habits. They were suggested to deepen their students' interest in such habits and popularise these habits via various activities among student teachers in order to contribute to their personal and professional development.

Since each educational setting is highly contextual, stakeholders have different expectations from teachers and the changing nature of schools pushes teachers to act in line with these expectations In this respect, preparedness of the teacher for the socio-cultural structure of environment and school climate comes to the fore, which raises the question whether teachers are raised as culturally responsive (Iliško, 2007; Salīte, 2015). In this regard, Williams, Edwards, and Kuhel (2016) questioned the states of five mathematics teachers who teach in a multicultural school setting. They stressed the role of the enhanced program they were involved in and demonstrated the importance of teacher preparedness and competencies for professional sustainability of their teaching career.

Education for sustainable development (ESD) is still a hot issue which troubles teacher education programs. After analysing the content of science course books in

Turkey, Sahin (2016) reached the conclusion that interdependence, citizenship and stewardship, needs and rights of future generations, diversity, quality of life, equity and justice, sustainable change, and uncertainty and precaution in action are the core aspects of ESD and the related science course books do not cover the emergent core aspects. As an alternative, Pipere (2016) suggests the inclusion of the cognitive approaches of a hermeneutical cycle to make a clear definition of ESD and remove the blurring of its meaning. In a similar vein, teacher candidates can be taught to possess hermeneutical thinking features and apply them in their teaching practices to ensure effective application of ESD and contribute to their professional identity.

Stakeholders play a crucial role to ensure the quality of teacher education programs and continue sustainability for professional aims. Since sustainability is a tool of continuous progression, it is important to reveal and compare the opinions of different groups of stakeholders who have a say and shape the content and route of teacher education programs. Likewise, Gholami and Qurbanzada (2016) examined the perspectives of 62 pre-service teachers, 48 in-service teachers, and 28 teacher educators in Iranian context at TEFL (Teaching English as Foreign Language) departments. What was stressed by all the three groups of participants was the existence of practical courses such as methodology in TEFL program and courses like practicum and classroom observations were reported to empower teachers for real educational settings. The strong emphasis on practical courses could stem from the fact that complexities of classrooms and dynamics of students are best understood with the help of practical courses where student teachers are met with the real teaching itself aside from the introduction to the changing expectations of the other stakeholders. Therefore, inclusion of more quantified and qualified practical courses is seen as a useful tool for enhancing sustainability in teacher education programs via the participation of various stakeholders.

University students' beliefs are considered important in terms of ESD because what they believe reveals valuable cues in understanding what needs to be done to ensure effective implementation and how to adapt existing curriculum to serve the key principles of ESD. To exemplify Ates, Teksöz and Ertepınar (2017) focused the perspectives of students receiving education at METU (Middle East Technical University) in Turkey about global climate change and found out that ecocentric attitude and perceived knowledge were the primary factors which impact their views. Moreover, teachers are expected to update themselves in line with the changing needs of the era and technological advances are no exception. In this regard, teachers are required to possess technological skills and competencies in order to deliver their courses with various materials including technological tools like computers, smart boards and/or projectors. Teachers' competencies determine their route for professional sustainability and educational development because as a stakeholder influenced by the principles of ESD, teachers contribute to educational sustainability in their work places (Çoklar & Kabakçı Yurdakul, 2017).

Sustainable development has got eight main features which require competencies in foresighted thinking, interdisciplinary work, transcultural understanding, participatory skills, planning, compassion, self-motivation and reflection (de Haan, 2006; Barth, Godemann, Rieckmann, & Stoltenberg, 2007). Since teacher training programs have a crucial role to enhance professional skills, it is inevitable for higher education institutions to integrate these competencies across the curriculum. Only in this way can student teachers gain consciousness about how to develop their personal competencies in the long term

and thus have lifelong learning skills. In a similar vein, Hiller and Reichart (2017) revealed the low level of self-efficacy of teachers-in-training with regard to sustainable development and highlighted the role of motivation and interest in sustaining their competencies regarding ESD.

In light of the relevant literature, it is seen that ESD has expanded to include various fields and teacher education is no exception. Although there exist studies about science teacher education or maths teacher education, ESD seems to be an overlooked area in foreign language teacher education. Thus, this study aims to answer the following research questions:

1. What do the participant teachers think about the effect of contextual factors like administrative support, physical conditions, and size of classes on their preferred teaching practices?
2. Are there any differences between the participant pre-service and in-service teachers in terms of their opinions about the effect of contextual factors on their preferred teaching practices?

Methodology

Research Design

This study aims to find out and compare the opinions of pre-service and in-service teachers regarding their perspectives about the effect of contextual differences on their preferred teaching practices and professional sustainability and offer some solutions. The study adopted a descriptive research design since the aim is to explain the phenomenon in question. In the study, the participants attach meaning to the study depending on their contexts by giving concrete examples based on their experiences (Maxwell, 1992). Descriptive research has the characteristics of providing a picture of a situation as it takes place in its natural environment (Burns & Grove, 2003, p. 201).

Participants

The study includes pre-service teachers and in-service teachers who actively work at various types of state schools. The pre-service teachers were chosen since they were thought to have taken the necessary theoretical and practical courses and graduate soon. Moreover, they took school experience courses in the first term of the fourth year in which they visited state schools regularly and made observations on both students and teachers. In the second term of the last year, they undertook a practicum where they were required to deliver courses under the custody of the mentor teacher who was observed in the previous term. They were checked and given feedback by both the mentor teacher at school and the advisor at university, which was an application done to strengthen the link between theory and practice, and contribute to university-school collaboration. Since the study was conducted in the second term of the academic year, that is, in spring term in April-May in 2015, the pre-service participants were thought to have mastered the theoretical background of teaching and been exposed to real educational settings and real students to teach. The participant pre-service teachers were thought to truly reflect characteristics of a student and a teacher since they were in between being a student and a teacher at the same time so their insights upon their education and practices will

reflect the delicacies of teaching in a real context and the changes they undergo. In this regard, purposed sampling was adopted by the researcher. It reached to a larger number of participants via qualitative means and was aimed to get a deeper understanding about the phenomenon in question although such a choice was demanding and time-consuming on the part of the researcher. The pre-service teachers who were receiving education at the faculties of education were chosen from four different state universities, which was done to increase the representativeness of the sample. As to the in-service teachers, they were chosen in different cities which were categorized as third-level cities according to the statistical institute of the country for categorizing the cities in different regions according to their economic and developmental features, which was again done to collect data from different parts of the country and increase the representativeness of the sample. The participant in-service teachers were working at various state schools in 15 different cities. The sample of the study consists of 267 pre-service teachers studying at four different state universities and 50 in-service teachers working in 15 different cities. In total, 317 teachers participated in the study.

Research Method

Since the study is concerned with the perspectives of the participants upon a specific action, the researcher adopted qualitative research method in order to get detailed answers from the participants (Dörnyei, 2007) and compared the opinions of pre-service and in-service teachers with the help of their written comments so that it will be found out whether any mismatch exists between the two groups of the participants, what kind of problems occur in practice and what can be done to remove these challenges to reach national and international standards in terms of teacher education. However, the researcher felt the need to refer numerical data in the form of frequency and percentage tables while showing the participant comments in order to benefit from the complementary purposes of *numbers* (numerical data in form of descriptive statistics) and *words* (qualitative data), and provide a more understandable and clear framework on the part of the reader (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Combining words and numbers will provide the reader with the opportunities to get a better understanding about the phenomenon in question and validate research since the words and numbers witness each other and reinforce comprehension in this way (Strauss & Corbin, 1998). In other words, qualitative data are quantified and quantitative data are qualified. That is why frequency and percentage tables are followed by the participant quotations.

Data Collection Tool

A written interview form was prepared by the researcher based on the focus of the articles related to teacher induction and teacher competencies, and sent in to 6 associate professors at the faculties of education in the related country to get expert opinions for the sake of ensuring the validity and reliability of the form. The experts gave feedback on the content and layout of the form, which required some revisions. The researcher took all the revisions required into account and made some modifications in the form to conform to the rules of validity and reliability. After the revisions, the form was sent back to the experts to get confirmation until there was a complete agreement among

them. Although the form was evaluated separately, the revised form was sent to all and their final views on the form were gathered. After the form gained its final shape on the basis of the feedback and last minor revisions, the researcher started to apply it to examine the perspectives of student teachers and in-service teachers. The form consists of two parts including one part to get demographic information and another part for the interview items (consisting of yes/no questions and open-ended questions) regarding the effect of contextual factors on teachers' preferred teaching practices. Some participants suggested solutions in their statements in the last interview item.

Data Analysis Tool

Qualitative data analysis procedures were employed due to the qualitative nature of the study. First of all, participant comments were coded on the computer and each participant was given a number to ensure anonymity of the participants and get more detailed and reliable answers from them. Then, the answers were read and categorized by the researcher and another separate coder and emerging themes were identified. The coders moved back and forth following a zigzag pattern (Dörnyei, 2007) while analysing the data since they always made comparisons among the statements by looking at previous and next statements. Thus, the constant comparison method of grounded theory (Glaser & Strauss, 1980) was used in the study since the coders also paid attention to the emerging categories to be general, understandable, easy to practice, flexible, and in harmony with social beliefs, everyday life realities and changing facts. Such a data-driven approach was adopted in order to get a framework from emerging themes. However, the researcher relied on Informed Grounded Theory proposed by Thornberg (2012), who criticised delaying review of literature and went for analysis after getting the related literature in order not to miss any important point or end up with unnecessary items at the end of analysis procedures. In a similar vein, the researcher was first concerned with the review of literature and then began to analyse participant comments. When the researcher completed analyses, she revised the previously formed categories and themes after about three weeks and made some changes to ensure intra-rater reliability. A second and independent coder was also involved in the data analyses and came up with his/her own categories and themes. After the 25% of the data were analysed, the two coders held a meeting and compared their categories and themes to ensure inter-rater reliability according to inter-rater reliability formula proposed by Miles and Huberman (1994, p. 64). In the first meeting, the agreement level between the coders was calculated to be 85%. Excel programme was also utilized during the coding and categorization of the data – the number of the teachers representing the order of participation was easily determined and the disagreed statements which were interpreted and categorized differently by the coders were easily detected and highlighted for further analysis. The two coders discussed the different codes and decided to analyse the disagreed codes again. In the second meeting, the agreement level went up to 93% according to the inter-rater reliability formula. In the second meeting, the two coders went on analysing the different codes until there was complete agreement.

Findings

First of all, the tables summarizing the categories and emerging themes will be given. The quotations belonging to pre-service and in-service teachers are then provided to exemplify the related category and make comparisons between the participants.

Opinions on Contextual Factor's Effect

Participants' opinions about the effect of contextual factors on teaching practices are given in Table 1 below.

Table 1
Opinions on Contextual Factors' Effect

Category	Pre-service	In-service	Total (F)	Percentage (%)
Positive	196	49	245	77.2%
Negative	54	0	54	17.1%
Suspicion	2	0	2	0.7%
Mixed	6	1	7	2.2%
Irrelevant	9	0	9	2.8%
Total	267	50	317	100%

According to Table 1, five different categories emerged. The first category (positive) means that the participant agreed that contextual factors hinder their preferred teaching practices while the second category (negative) means that the participant ignores the contextual factors. The third category (suspicion) means that the participant is suspicious about the contextual factors' effect and finally, the last category means the participant holds mixed opinions about the phenomenon in question in that he has both positive and negative opinions about it. A small number of participants gave irrelevant answers to the questions so they were excluded from the scope of the study and not taken into consideration in further analyses.

Table 1 shows that a high majority of the participant teachers (F: 245, 77.2%) think that contextual factors such as administrative support, physical conditions, and crowded classes affect their preferred teaching practices adversely. This is followed by the participants (F: 54, 17.1%) who disagree with the adverse affects of contextual factors and think that a teacher can ignore outer factors and overcome difficulties with his/her teaching knowledge, skills and competencies based on previous learning and/ or teaching experiences. The participants with mixed opinions (F: 7, 2.2%) come in the third place. They are the ones who have both positive and negative opinions about the effect of contextual factors. Finally, the participants who are suspicious (F: 2, 0.7%) are in the last place and they are the ones who approach the phenomenon in question with suspicion.

When the details of the table are examined, it is seen that there exist both similarities and differences between the pre-service and in-service teachers. A high majority of the pre-service participants (F: 196, 73,4%) were found to be in favour of the changing effects of contextual factors. In a similar vein, almost all of the in-service teachers (F: 49, 98%) were found to be under the negative influence of contextual factors. It is seen that the participants who are in favour of the adverse effects of contextual factors come first in both groups. However, there are differences in terms of ignoring the outer factors in

teaching practices. Although 54 (20.2%) pre-service teachers stated that they could ignore contextual factors and would not let these factors hinder their preferred teaching practices, there were no in-service teachers who think so. Besides, there were no in-service teachers who are suspicious about the effect of contextual factors, although there are two suspicious pre-service teachers. The number of participants with mixed opinions about the effect of contextual factors (including both positive and negative opinions) also differs in both groups in that there are six (2.2%) pre-service participants with mixed opinions whereas there is only one (2%) in-service participant with mixed opinions. However, the percentage is very close in that it is 2.2% for pre-service teachers while it is 2% for in-service teachers. Finally, all irrelevant answers belong to pre-service participants (F: 9, 3.3%) while there is no in-service participant with irrelevant answers.

Participant Quotations about Contextual Factors

Most of the participants (196 pre-service and 49 in-service teachers) fall on the category of positive because they think that contextual factors deeply affect and hinder their preferred teaching practices. Below are some sample quotations of pre-service participants.

> STE 16: *Absolutely everything affects our class conditions like environment, family, friendships.*

STE16 thinks that there are many context-bound differences that could affect their performance and that range from the physical environment to related stakeholders.

> STE 67: *Yes, support and physical conditions are important. I can't create all opportunities myself.*

STE67 highlights the importance of administrative support and physical appearance in educational settings and adds his/her limitations to overcome some difficulties.

> STE 71: *Of course, it will. In university, we work with our friends or small classes, in a crowded class. I will have lots of problems, such as classroom management.*

STE71 mentions lack of a real classroom environment to apply teaching and probable negative consequences in terms of classroom management.

> STE 84: *Absolutely, because of these problems, even in practicum we have difficulty in our classes the presentation we make in university classes won't work in real MEB classes. When I look at the views of teachers on the internet, there are lots of complaints about conditions.*

STE84 seems to be negatively affected by the views of teachers working at state schools and talks about the university-school gap.

> STE 97: *Yes. I think traditional and strict administrative attitudes, bad physical conditions and crowd of classes will prevent my innovative techniques.*

According to STE 97, administrative attitudes, physical conditions and the crowded classes are the main factors affecting their new and original teaching practices.

STE 165: *Due to being exams always, I think I will not be able to what I will want to do. The students will want to do the things that help them in the exams. For example; communicative activities are ignored, then why are we bad at speaking?*

According to student teachers, both physical conditions and stakeholder attitudes could influence their teaching style. While some report that anything could affect their teaching practices, others stress specific aspects like crowded classes, lack of stakeholder support, artificial teaching practices and the washback effect of high-stake examinations.
Below are some examples of in-service teachers' quotations.

T 368: *Yes, of course. For instance, last Semester I planned to teach the topic of the traffic signs. But my class condition is not appropriate for the TPR.*

T 370: *The most important is physical conditions. We have to do something special to maintain and change the class.*

T 375: *Yes, of course. If it is too cold in winter and there are over 40 students in the classes, how can we be effective?*

The first three teachers touch upon the importance of the physical conditions within the classrooms, climate issues and the large crowded classes since these factors are considered to be hindering their preferred teaching practices.

T 406: *Yes, sure. As teachers we feel anxious about the curriculum that we have to finish by the end of the year. Authorities may sometimes criticize for not following the curriculum. As they are not competent teachers in language teaching they sometimes criticize insensibly. What's more we are lack of technology and materials. It's not always easy to prepare our own materials for crowded classrooms all the time as they cost much. So, it would be beneficial to increase the number of the lessons at schools and reduce the intensiveness of the curriculum and to provide teachers enough opportunżties to afford good materials.*

The in-service teachers tend to give more concrete examples due to their practical involvement in teaching. Some teachers complain about the seating arrangement, large cohorts of students, and classroom size due to their limiting impact. The last participant mentions the burden of curriculum coverage and negative attitudes of inspectors. S/he also talks about the negative effects of the lack of materials.
In sum, emerging themes in the positive category include environment, family, friendships, reducing teacher motivation, lack of language labs, discipline problems, lack of student motivation, the mood of students, effect of different ethnic communities, lack of technological tools, physical environment, technological tools, curriculum constraints and time limitations, lack of materials, cultural differences, crowded classes, lack of administration support, classroom management, lack of real practical experience, fixed course-book and syllabus, obligation to covering the curriculum, high-stake exam, central educational policy, parent's interruption, lack of student interest, insufficient

infrastructure, administrative deficiencies, regulations, time limitation, climate issues (like hot and cold) and ineffective inspection practices.

In contrast to these participants, some other participants prioritise the existence of teacher over the contextual factors and suggest the ways of coping with uncertainty.

> STE 60: *No, I think there is nothing that can prevent me from teaching perfectly. No matter how crowded the classes are there is always a chance to handle with that class.*

> STE 62: *I don't believe that the crowd of classes and physical conditions affect the teacher. The teacher has to do best in any conditions.*

> STE 92: *I don't think so I can manage the classroom with the help of methods I learned.*

The first three student teachers seem to disregard the effects of contextual factors and even turn these differences into advantages to teach in a unique way. The ability to make use of teaching methods and professional knowledge is underlined for its facilitating role in classroom management.

> STE 237: *No, because I will be try to be a flexible teacher and I will have a "B" plan.*

> STE 292: *I think if one wants to do something, there aren't anything to hinder him to manage his goods or objectives. But conditions should be improved, especially in learning classes.*

These student teachers think that nothing can prevent the teacher from doing the desired activities within the classroom and the teacher has to have another plan in case of unexpected situations. Thus, these statements were grouped under the category of *negative*. Such participants seem to disregard outer factors and rely on self-skills and knowledge to cope with difficulties, which indicates the importance of teacher self-efficacy for demolishing the contextual hardships.

As for the statements of in-service teachers, there are no participants who think that contextual factors cannot hinder them from applying what they actually would like to do in their classes.

When the themes of negative category are examined, it is seen that the participant teachers focused on interaction with stakeholders, personal qualities, teaching competencies, content and pedagogy-related knowledge and professional skills to disregard outer factors in implementing their preferred teaching activities.

A small number of pre-service participants were suspicious about the effect of contextual factors on their teaching practices and made statements that show their indecision.

> STE 90: *Maybe I don't know but time shows us the reality.*

> STE 277: *Maybe yes.*

Although there were two statements revealing suspicion among student teachers, there were no examples of suspicion in the statement of in-service teachers.

The last category includes participants with mixed opinions towards the effects of contextual factors, that is, statements displaying both positive and negative opinions about contextual factors or statements with conditional clauses. First, student teacher responses are presented below.

STE 102: *Disadvantage – irresponsible administrators, lack of money, and opportunities, irrelevant parents.* Advantage – *cooperation and experience*

STE 178: *I don't know it changes to my students. Wait and see* J

STE 291: *Yes, of course. There are a lot of factors that affect it. Positive or negative way.*

STE 361: *Yes, if all of the situations were good enough, objectives will become very easy to apply.*

STE 366: *Maybe in some ways it can be a handicap for my profession.*

While some student teachers see contextual factor differences both as an advantage and a disadvantage due to the unexpected positive or negative effects, others point out the role of student characteristics and retarding result of contextual factors in terms of course aims. Administration, financial issues, parental involvement and student characteristics are counted as factors that may function either as a disadvantage or an advantage.

Only one in-service teacher held a mixed opinion as follows.

T 376: *Sometimes. Maybe.*

S/he does not think that contextual factors are always an obstacle. Rather, they are sometimes treated as hindering factors.

P.I.S.E.T. Theory

In light of the data gathered about the opinions of the participants, a new theory called P.I.S.E.T. was formed regarding the contextual factors affecting ESD in teacher education. At the end of the procedures of constant comparison method included in grounded theory, five main categories emerged. According to P.I.S.E.T. theory, there are personal, institutional, stakeholder-related, environmental and training-related factors which positively and/or negatively influence ESD in teacher education as indicated in Table 2 below.

Table 2
P.I.S.E.T. Theory: Components of Contextual Factors Affecting ESD

Personal Factors	motivation, self-sources, methods-approaches, flexibility, B plan, link with stakeholders, personal qualities, teaching competencies, content knowledge, pedagogy knowledge, professional skills, cooperation skills, teaching experiences
Institutional Factors	physical conditions, lack of language labs, school climate, lack of technological tools, curriculum constraints, time limitations, crowded classes, lack of administration support, fixed course-book and syllabus, obligation to covering the curriculum, high-stake exam, central educational policy, insufficient infrastructure, administrative deficiencies, regulations, lack of money
Stakeholder-related Factors	family, friends, lack of student motivation, students' mood, parent's interruption, lack of student interest, lack of English knowledge of inspectors, decisions of policy makers, learner characteristics (age, level, gender)

Sequel to Table 2 see on the next page.

Environmental Factors	socio-economic structure, location, different ethnic communities, cultural differences, climate issues (like hot and cold)
Training-related Factors	discipline problems, no focus on ESD, lack of materials, lack of workshops, classroom management (e.g. how to use voice, how to establish authority upon learners), lack of real practical experience, ineffective inspection practices, limitations of micro-teaching, lack of money, lack of opportunities

Personal factors cover personal characteristics and professional competencies of teachers. A teacher's motivation, self-sources, professional competencies, interaction with stakeholders, content knowledge pedagogy knowledge, cooperation skills and previous teaching experiences were found to determine the degree of contextual factors' influences on promoting ESD in pre-service and in-service teacher training. The participant teachers were aware of the fact that their teaching knowledge and skills as well as interactive competencies will help them to overcome the difficulties or problems resulting from contextual factors. They stress that being equipped with teaching methods and techniques, they can have a flexible teaching and go on with a different plan in unexpected cases. They also highlight that all these personal factors will eventually lead to sustainable development in educational settings in spite of contextual factors.

Institutional factors include the physical and administrative traits of educational settings where teaching activities are actualised. Physical appearance of a school, classroom sizes and conditions, intense curriculum content, time limitations to cover the curriculum, crowded classes, administrative attitudes, fixed and compulsory course boks and syllabuses, washback effects of high-stake exams, insufficient infrastructure, regulations and lack of money were the commonly cited institutional factors which affect the enhancement of ESD. In Turkey, schools are given a stable curriculum and teachers are expected to cover the curriculum in the given time. In addition, students's success and scores in the high-stake exmainations are regarded as the teachers' and/ or schools' success. Thus, teachers feel pressured to prepare students in line with the content of these examinations. Other sub-factors are the crowd of the classrooms and insufficient physical conditions which could prevent implementation of comuunicative activities. Some schools may have budget problems and not renew themselves to serve teacher expectations. Such institutional factors were cited to be the obstacles in front of the effective application of ESD in educational settings.

Stakeholder-related factors consist of the people who both affect and are affected by the outcomes of educational activities. In this respect, stakeholders in education include students, teachers, parants, administrators, inspectors, policy makers, family, friends and colleagues. Student characteristics such as their age, language level, motivation, mood, gender and interest determine their participation. Inspectors are thought to be insufficient to observe and evaluate English teachers because of their lack of English knowledge, which is a highly criticized point by the participant in-service English teachers. Additionally, parental issues like their unreal expectations, lack of interest to cooperate with the teacher and attitiudes of school management play an important role in education for sustainable development. Another factor is the obligation to act according to the decisions of policy makers. It is seen that stakeholders shape the implementation of ESD to a large extent. Therefore, teacher participation in decision-making procedures

at national and local level seems to be a key solution in fostering the principles of ESD at schools.

Environmental factors are concerned with the place that the educational institution is found in because schools are unavoidably affected by their environments. The school's socio-economic structure, location and climate issues have an impact upon teaching practices. For example, in some regions it is possible to come across different ethnic communities and when teachers face cultural differences, they may have difficulty in adapting to their new surrounding. Beasides, too hot or too cold weather may prevent or change teaching practices to some extent.

Finally, the last category is about training-related factors which specifically focus on the nature of pre-service and in-service teacher education programmes. Teachers displayed their dissatisfaction with the training they underdo in the course of time throughout their career and critise their lack of exposure to ESD at universities or schools. Without being informed about ESD during pre-service teacher education programmes conducted at universities and without being given feedback about what to do to enhance ESD in their classes, teachers may feel incompetent or insufficient when they start teaching in real classroom settings. While pre-service teacher touch upon lack of real practical experiences and limitations of micro-teaching, in-service teachers report lack of extra materials, workshops, budget, opportunities, ineffective inspection practices, and having discipline problems. Student teachers were found to be in need of more practice and guidance in terms of classroom management because they stated they don't know how to overcome discipline problems, calm down the problematic students, use their voice, and establish authority upon learners. On the other hand, in-service teachers think that inspectors do not know English and do not guide them properly to better their teaching practices. It can be said that the deficiencies in pre-service and in-service teacher education programmes could ruin integration of ESD into existing teaching policies.

Discussion and Conclusion

It can be concluded that pre-service teachers seemed to be more optimistic about the effect of contextual factors on their future preferred teaching practices while in-service teachers were found to be mostly pessimistic about it, which might result from the fact that pre-service teachers are not exposed to various school settings and learners with different characteristics. On the contrary, in-service teachers are not equipped with the necessary coping strategies to deal with work overload and solve job-related problems. Additionally, some participants touched upon the importance of possessed professional knowledge and skills to overcome context-bound problems or differences such as class-room management skills, various approaches and techniques, and colleague support. According to P.I.S.E.T. theory, ESD is affected by contextual factors in terms of personal, institutional, stakeholder-related, environmental and training-related factors. If these factors are taken into consideration in decision-making procedures, ESD can be integrated into teacher education programmes and educational success can be increased.

The study findings display certain similarities and differences with the previous findings in the relevant literature. To exemplify, the results of the study bear similarities with those of Gholami and Qurbanzada (2016) in terms of the importance and increased need of practical courses that are considered to prepare student teachers for real teaching environments and help them continue sustainability in their professional lives. In parallel

with Pehkonen and Turner (1999), contextual factors like the school setting, administration, student profile and parental involvement were found to affect professional skills of teachers but no participant mentioned the impact of contextual factors on research skills, which could be due to their lacking research skills or work overload to cover the curriculum. Similarly, in Corte, den Broka, Kamp and Bergen (2013), context was the determining factor for teachers' research skills. However, in this study no participant mentioned the positive or negative effect of the contextual differences on their research studies. Behaviour management and lack of stakeholder support were highlighted by some participants, which is in agreement with the findings of Kilgore, Griffin, Otis-Wilborn and Winn (2003). Similar to Ingvarson, Beavis and Kleinhenz (2007), some participants stated that they could disregard outer factors since they were well-equipped with certain professional knowledge and skills in terms of methodology but no participant touched upon their high-level knowledge or skill in terms of content, planning and assessment, which could result from the lack of content knowledge and practical experiences for planning a lesson and assessing real students.

Mastering content knowledge or pedagogical knowledge may not necessarily pave the way for student teachers to act in line with the principles of ESD in their future classes since they could come across unexpected situations during their lessons. The micro-teaching activities and presentations can create consciousness to some extent but nothing can prepare them for the real classroom dynamics except for practicum. In line with the coming flow of theoretical knowledge and practical experience, the student teacher could get the opportunity to build a bridge between theory and practice, begin to set a framework regarding his/her status as a teacher candidate and question his/her skills and knowledge. Self-efficacy beliefs come into play at this point because student teachers' perceived self-efficacy beliefs undergo changes in three different lanes, namely their experiences as a language learner, as a teacher candidate and as an in-service teacher. In light of the experiences and suggestions gathered, pre-service teachers can be taught about possible future educational situations and constraints, and in-service teachers can receive training in line with these contextual differences in order to ensure sustainability in their professional lives.

Coping with the needs and expectations of educational system and dealing with contextual factors bring a unique responsibility and workload on the shoulders of teachers. Keeping the principles of ESD, policy makers and authorities give priority to its implementation at schools and teacher education programmes. Only in this way can student teachers gain consciousness about a sustainable development and in-service teachers put effort into applying it in their classrooms.

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Student Improvement by Applying the Numbered Heads Together (NHT) Approach to Basic Subjects of Vocational Competence in a Vocational High School in Indonesia

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Abstract

This research aims to improve the learning activity and achievement of a 10th grade class made up of 30 students in a vocational high school located in the city of Surakarta, Indonesia, by applying the Numbered Heads Together (NHT) approach. The experiment was divided into two stages of four activities each: planning, implementation, observation, and reflection. The comparative descriptive procedure was then used to analyze the data. Prior to the researach implementation, the learning activity was relatively low in the pre-stage of the experiment. However, after the NHT approach, the percentage of active students increased in stage 1 and stage 2. The result of the test also suggested a similar trend in student achievement. From this it can be concluded that the application of the NHT learning model improves engagement within the learning activity as well as the level of achievement.

Keywords: Numbered Head Together, vocational education, student achievement, sustainability.

Introduction

Education plays an integral role in the progress of a nation as it develops students' knowledge, as well as shaping their characters. Therefore, education should incorporate new and contemporary approaches to teaching (Zimele-Steina, 2013). The quality of the teacher is an important part of this effort as it provides educational sustainability (Salīte, Gedžūne, & Gedžūne, 2009; Çoklar & Yurdakul, 2017). Teachers are the most instrumental part of the learning process, given that they control class activities, therefore they must be able to plan and create learning programs and implement and lead learning activities, as well as interpret and use gathered data in order to improve them. It goes without saying that teachers are most certainly important.

For the purposes of this study, the authors observed the conventional lecture method of a vocational high school in Surakarta City, Indonesia. This lecture method incorporates in the learning process the use of power point presentations and other forms of media. It was observed that while using this method, students were not actively involved in the learning process because they were not paying attention, and so their level of academic achievement was affected. A decision was made to trial a different learning model in the hope of overcoming this problem, and effectively improving student activeness and achievement. Several learning models have been developed for this purpose, cooperative learning being one of them. This method has been defined as pedagogy involving the use of groups whose members share interdependent goals and are assessed on individual outcomes (Ravenscroft, Buckless, & Zuckerman, 1997). There are two potential disadvantages to the traditional group work, namely the "hitchhikers" and "workhorses", but these are discouraged by the two characteristics previously mentioned: positive interdependence, and individual accountability (Cottell & Millis, 1992). Cooperative learning is also an effective teaching approach in achieving educational goals.

There have been various studies conducted on different methods of cooperative learning (Clinton & Kohlmeyer, 2005; de Leng, Dolmans, Jöbsis, Muijtjens & van der Vleuten, 2009; McMillen et al., 2016; Michael Nussbaum, 2008; O'Neal, McClellan & Jarosinski, 2016; Pawattana, Prasarnpanich, & Attanawong, 2014; Ruengtam, 2013; Siegel, 2005; Slavin, Hurley, & Chamberlain, 2001), including: Numbered Heads Together approach (Leasa & Corebima, 2017), Supplemental Instruction (Etter, Burmeister & Elder, 2001), Jigsaw method (Buhr, Heflin, White, & Pinheiro, 2014; Şengül & Katranci, 2014a, 2014b), cooperative problem-based learning (CPBL) (Aziz, Yusof, Udin & Yatim, 2013), and inquiry based science (Gillies, Nichols, Burgh, & Haynes, 2014; Iliško, 2016).

The cooperative learning method chosen within this intervention was the Numbered Heads Together (NHT) approach. This approach creates the opportunity to share ideas as well as considering what the most appropriate answer to a problem or a question is. Furthermore, this approach encourages students to increase their cooperation. The NHT approach is designed to create more active responses from the students while teaching (McMillen et al., 2016). This study seeks to examine the effect of NHT as a cooperative learning strategy on the academic performance of a 10th grade class in a vocational school located in Surakarta City, Indonesia. Its aim is to improve the student learning activeness and achievement in the Basic Vocational Competence subject.

Methodology

This research covers the study of student learning improvement by employing the NHT cooperative learning technique. The case study is a 10th grade class of 30 students in a vocational high school located in Surakarta, Indonesia, during the 1st semester of 2017 (April 2017 – May 2017). The technological teaching facilities and environment in the classroom were controlled using this technique throughout the entire duration of the study.

The NHT aproach

The NHT approach provides an opportunity for students to share ideas, as well as consider the most appropriate answer. The first step in this method is numbering the students and dividing the class into small groups. The number of groups depends on the number of concepts to be studied. For example, if a class consists of 30 students and there are 5 concepts to be studied, then there will be 5 groups of 6 people each, and each person in each group is numbered from 1 to 6. After the groups are formed, each one will be provided with questions by the teacher. After this is done, everyone brings their "heads together" to discuss and to think about the questions they were given.

For the second step, the teacher picks a number and then calls the student that corresponds to that number from each group to come forward and answer the questions previously posed. This is done continuously until every student has been given the opportunity to explain their point of view. Depending on the answers, the teacher can then develop a more in-depth discussion, developing the students' knowledge.

Instrument Validity Testing Technique

To ensure the validity of the data, the researcher employs two data validation techniques:

    a. Construct validity which is used to evaluate the student's learning activeness. This clarifies behavior by including the concept of ability. Since interest cannot be measured due to its abstractness, an indicator must be used. The indicator sheet showing pre-stage, stage 1 and stage 2 is presented in Table 1.

Table 1
Indicator Sheet Showing Pre-Stage, Stage 1 and Stage 2

No	Indicator	Outcome		
		Pre-Stage (%)	Stage 1 (%)	Stage 2 (%)
1	Paying attention when material is explained			
2	Listening when the material is explained			
3	Are calm when the material is explained			
4	Finding information needed to work on the given problem			
5	Practice the given problem			
6	Answering the questions the teacher has about the studied material			
7	Acting according to teacher guidance / direction			
8	Actively discussing within the groups			
9	Commenting and concluding on the learning process			
10	Summarizing learning materials in their own words			

    b. Content validity is used to evaluate the student learning achievement. The validity of the content refers to a test, therefore a set of questions is needed. This set of questions must be developed carefully, must be based on the knowledge and materials provided to the students and must be within their abilities.

Data Analysis Technique

Data analysis serves to examine the data obtained through observation, documentation and examination. The data analysis used in this study is comparative descriptive analysis based on observation. This means that the data obtained from observing the student's learning activeness was analyzed by giving one point to the answers marked by the tick mark ($\sqrt{}$) and zero points to the answers marked by the dash (-) in their written tests. The percentage (*p*) of learning can be measured using this formula:

$$p = \frac{\text{achievement score}}{\text{maximum score}} \times 100$$

P = Student learning activity
Achievement score = Number of achievement scores in one stage
Maximum score = Maximum number of scores in one stage

In addition, any category is considered passed or completed if the percentage of students who passed is of at least 80%.

The data obtained from the examination measuring the students' learning achievement can be analyzed by using a comparative descriptive analysis to compare the initial conditions prior to the use of the NHT method using the results obtained from stage I and stage II, so that the difference can be noted.

Performance Indicators

Performance indicators are very useful when it comes to observing improvements in student achievement. The performance indicators used in this study are presented in Table 2.

Table 2
Performance Indicators

Attribute Measured	Percentage of Targeted Students	Method of measurement
Learning activeness in the subject of Basic Vocational Competence in 10th grade	80 %	The number of students who are active and able to solve the problem is observed during the process of discussions and presentations.
Student achievement in the subject of Basic Vocational Competence in 10th grade	80 %	It is measured from the results of basic tests and calculated from the number of students who are able to meet the required score.

Research procedure

The research procedure adopted in this study can be divided in two stages: stage I and stage II. Every classroom meeting during both of these stages lasted approximately 45 minutes. The approach consisted of four activities: (1) planning, (2) implementation, (3) observation, and (4) reflection. A diagram of the research procedure is presented in Fig. 1.
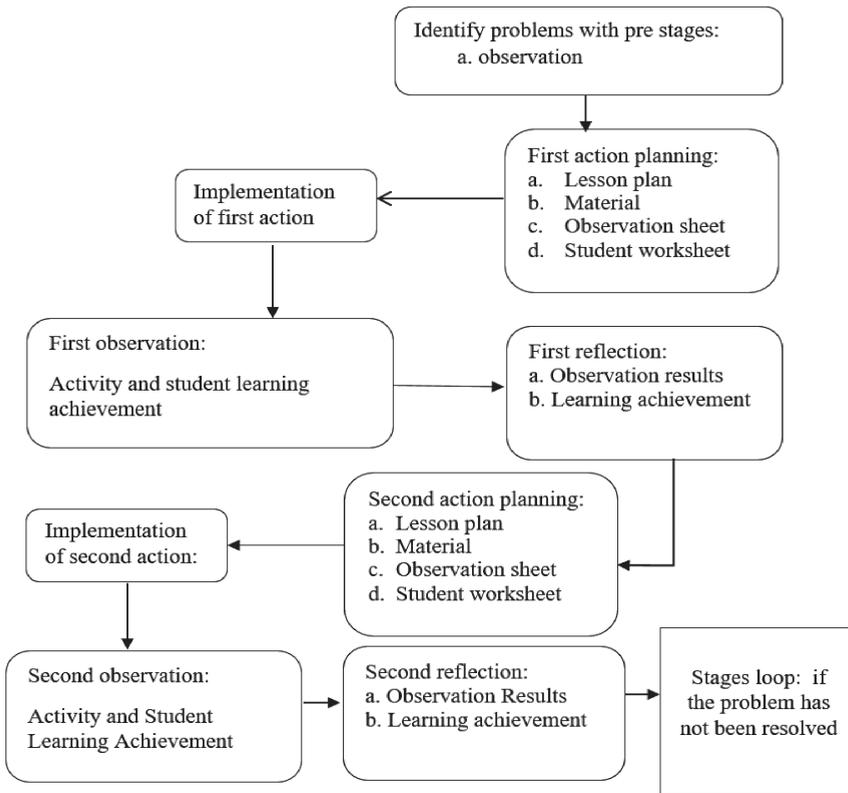
Figure 1. Schematic Showing the Research Procedures

Results and Discussion

The state of student activeness in the subject of Basic Vocational Competence can be seen in Table 3.

Table 3
The Activity of Student Learning in Pre-Stage, Stage 1 and Stage 2

Student Learning Activity		
Action	Number of Students Passed	Percentage %
Pre Stage	10	34.48
Stage 1	10	71.43
Stage 2	25	86.21

Table 3 presents the data on the student activeness, before and after Stage I and Stage II. There is visible improvement at each stage level.

The data presented in Fig. 2 shows that during Pre-stage 10 (34.48%) out of 29 students met the minimum requirements for activeness during the use of the conventional lecture method. On the other hand, 19 students (65.52%) out of 29 did not show activeness during the class. In the first stage of applying the NHT method, there was an

increase in student activeness, although the target of 80% was not achieved. This may be attributed to students who lack enthusiasm during discussions or are easily distracted. The results obtained from observation show that 10 (71.43%) out of 14 students were active during the learning activities, and the remaining 4 students (28.57%) were inactive during the process. This observation was taken into consideration and used for improving the next stage.
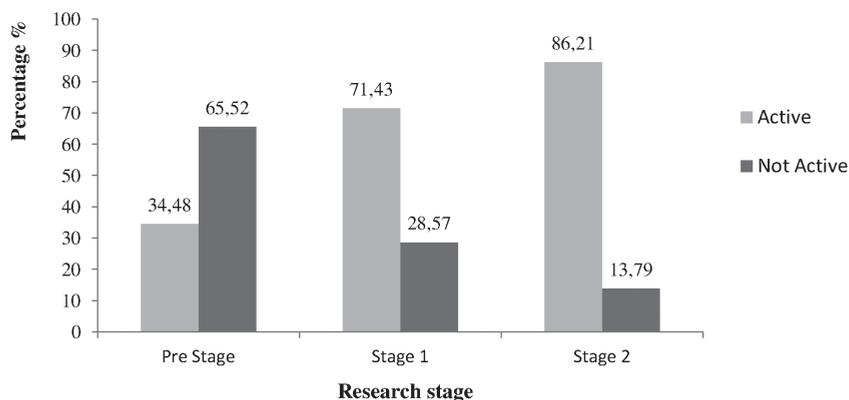

Figure 2. Comparison of student activity in pre-stage, Stage 1 and Stage 2

Results show that during Stage 2 25 (86.21%) out of 19 students showed activeness during the learning activities, while the remaining 4 (13.79%) students were still inactive. During the pre-stage, 34.48% of the students were active, the percentage raising to 71.43% in Stage 1 and to 86.21% in Stage 2. These results obtained on student achievement are presented in Table 4.

Table 4
Student Learning Achievement in Pre-Stage, Stage 1 and Stage 2

Action	Student achievement	
	Number of Students Passed	Percentage %
Pre Stage	11	37,93
Stage 1	10	71,43
Stage 2	25	86,21

In the pre-stage, 29 out of 30 students took the evaluation test and the results revealed that 11 students (37.93%) passed, while the remaining 18 students (62.07%) failed. After employing the NHT technique during Stage 1, 14 students took the written test. The results showed that 10 students (71.43%) passed the test, while 4 students (28.57%) failed. Although the 80% target was not achieved in Stage 1, there was a significant improvement. During Stage 2, 29 students took the test out of which 25 students (86.21%) passed and 4 students (13.79%) did not. This shows that the student learning levels in the subject of Basic Vocational Competence not only increased, but also exceeded the pre-set target of 80% from the beginning of the study (Fig. 3).
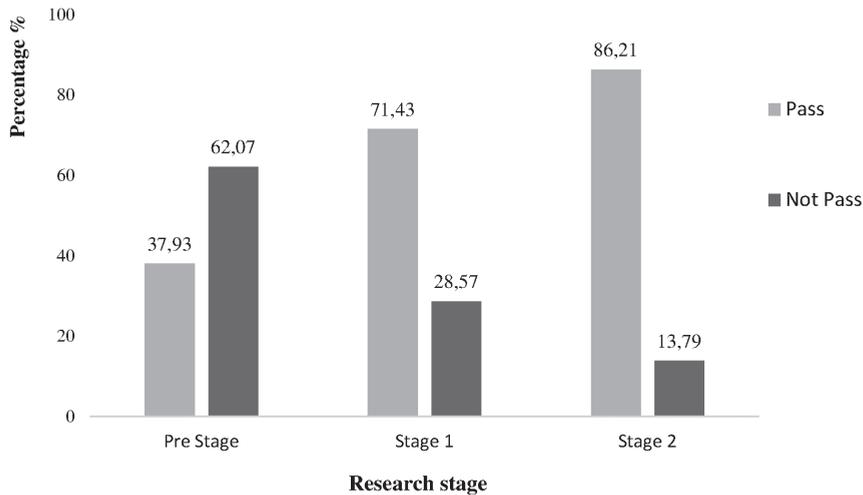
Figure 3. Comparison of Student Learning Achievements Pre-Stage, Stage 1 and Stage 2

Conclusion

The application of the NHT cooperative learning model improved the activeness as well as the learning achievement of the 10th grade students in the subject of Basic Vocational Competence in a vocational school in Surakarta, Indonesia. By applying this learning model, students are held accountable for their conclusions and it is easier for them to master the teaching materials because they have an active role in the process.

An increase in the student learning activity can be seen between all stages. Initially, 10 out of 29 students passed the test during the pre-stage. When NHT was applied in the first stage, 10 out of 14 students in attendance passed their test, as they began to be more active in the learning process. During the second stage, there was a further increase, with 25 out of 29 students passing the test. This suggests that NHT provides a more exciting learning environment as it is discussion based, making the students figure out a way to answer the questions posed by their teacher with the help of their classmates. This way, the learning process is not only more self-involved, but also more interesting to the students, which in turn contributes to increased activeness, a fact reflected by the students' test results.

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Meeting the Challenges of ESD Competency – Based Curriculum in a Vocational School Setting

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Abstract

Sustainability is becoming an integral part of vocational schools since schools are called to respond to the environmental crises and unsustainability issues in the community as well as to an unsustainable economic development. Vocational schools have to play a significant role is re-orienting students' frames of reference towards sustainability for a well-being of the Earth.

The aim of the article is to explore teachers' views on their gains of integrating sustainability and the use of sustainability pedagogies as a result of participation in three years long international project. The article reflects on teachers' efforts of reorienting the curriculum of a vocational school towards sustainability within the framework of the international Erasmus+ project *"Methods for ESD – competencies and curricula"* (MetESD), led by Vechta University.

Keywords: Competencies, curriculum, sustainability, system perspective, vocational school's venue.

The challenges of Incorporating Legislative Mandates into the Educational Curriculum

International awareness about sustainability was first introduced at the United Nations UNESCO-UNEP International Educational Program (1975). Since this initial step, a number of significant international documents have been ratified. Agenda 21 of the Rio Earth Summit prioritized the importance of Education for Sustainable Development (ESD). Those declarations have been endorsed by many universities and governments. Other important declarations such as the COPERNICUS Charter (COPERNICUS, 2002) and the Talloires Declaration in 1990 (*University Leaders for a Sustainable Future*, 2002) were realized by more than 291 higher institutions. *Global Action Program on Education for Sustainable Development* (GAP, ESD) (2014) was a follow-up program meant to commemorate the *Decade of ESD* (2005–2014). Its aim was to contribute to the goals of sustainable development of the 2030 agenda. The above documents are among the major legislative landmarks intended to re-orientate educational goals to integrating ESD knowledge, skills, and values into the education curriculum.

These landmark documents gave official sanction to the Goals of Sustainable Development (SDGs) and mandated that these goals be integrated into a quality program of education for sustainable development. The GAP programme (2014) outlined the following priorities for advancing the ESD agenda such as policy advancement, transformation of learning environments, capacity building of educators, empowering youth, and accelerating solutions at the local level. It was felt that at the local level new challenges would be revealed that needed to be included in a vocational education curriculum (Salīte, et. al. (2016); Salīte (2015); Iliško (2014)). The universities have actively responded to these legislative mandates and implemented them into their educational agendas. It therefore incumbent upon vocational school to recognize and act upon these policies.

Sustainability is rooted in the educational priorities set by the United Nation's Decade of ESD. The aim of the policy decision is to "encourage UNECE Member States to develop and incorporate ESD into their formal education systems to include all relevant subjects as well as non-formal and informal education" (UNECE, 2005, p. 2). The aim of the strategy is to equip educators with the competencies to include sustainable development in their teaching. Vocational schools are expected to take into account the priorities set in the Global Action Programme (GAP) on ESD that is endorsed by UNESCO Member States. These decisions require that the policies become a part of a planning process in vocational schools. In planning their strategies and future developments, a vocational school needs to work in line with the framework of Sustainable Development Goals (SDG) where education is considered to be one of the crucial factors to meet the requirements of the new SDG 2030 Agenda for Sustainable Development.

Mapping the Field: The Rationale of the Project

Daugavpils State Technical School provides vocational education and secondary vocational education. In total, 21 educational programmes are offered to students. These programmes are two or three years long and lead to Level II of vocational qualifications (theoretical and practical skills required for independent work as a skilled worker). These programmes include general secondary education requirements, but not the complete programme. It is for this reason; the school's graduates are not qualified to continue to higher education. The vocation school has opened a Competence Centre. In future this Competence Centre will have a strategic role in the sustainable development of the region. Considering the EU priorities and funds related to the development of the infrastructure for the vocational schools and raise quality education, this Competence Centre will play a significant role in a sustainable development of the city and vocational education. In the process of designing a strategy for the further development of this Centre, it is essential to integrate sustainability in the development of the vocational school.

The aim of the international project was to develop tools and competencies for integrating sustainability into a curriculum of a vocational school in order to raise the awareness among young people about sustainability issues. The project's activities were targeted to vocational students and teachers. During the project they were provided with diverse resources, weeks of training, and peer feedback. The aim of this study was to evaluate to what extent the project has been effective in promoting students' awareness of ESD as learned through sustainability pedagogies.

It was intended that one of the project's outcomes would be to equip teachers with knowledge on how to make a transition in their teaching from educating *about* sustainability to educating *for* sustainability. It was hoped that this change in the teaching approach would impact positively on students' values and behavior and encourage the agency among them to participate in a sustainable decision making process.

As a further goal was to develop teachers' understanding of ESD as a '*frame of mind*' while integrating sustainability into the curriculum. After mapping the field, it is apparent that ESD is gradually emerging as school policy; international projects are serving as an add-on in the curriculum of the vocational school.

Data Collection Methods

For the study, the authors carried out focus group and individual interviews with staff members of a partner vocational school. Two years into the project, the authors conducted five semi-structured interviews with the staff members of the partnering vocational school on their gains and concerns raised during the course of the project. For analyses of the interviews, the authors used interpretive methods by reviewing repeatedly interview notes and identifying common patterns. The reliability of the analysis was increased by the analyses of the interview data by four researchers. Interviews with the staff members focused on participants' previous experience, the potential to integrate ESD into curriculum design, and how work in the project modified their existing perceptions about learning.

In summary, the interview questions can be divided into four categories: What are your personal gains due to the participation at this project? What are the main gains from the participation in the project for your school? Which initiatives were the most effective for fostering innovations in the curriculum? How did participation in the project create change in your pedagogical approach? What barriers to implement new ideas did you encounter during the course of project? The interview data was analyzed in a detailed and a systemic way and the data was categorized.

Education for Sustainability as a Frame of Mind

Sustainability has multiple of meanings and various models that coexist and enrich one another. The notions of sustainability is interdisciplinary and includes, political, economic, environmental and cultural aspects. The core of ESD is to challenge unsustainable practices and to foster public awareness and knowledge about sustainability. It is intended to lead to the re-orientation of mindsets and dispositions of youth towards sustainability issues.

Sustainability pedagogies are considered to be innovative pedagogies that foster values that lead to behavior change and cause students to be more sustainability-oriented. Sustainability pedagogies are concerned with exploring moral questions and the values of students and developing ideas of sustainability as a frame of mind that may have far reaching educational implications (Bonett, 1999). Current pedagogies need to be reconsidered as a shift from the education *about* sustainability to education *in* sustainability and education *for* sustainability, allowing for alternative epistemologies and ways of knowing to emerge (Fien, & Tilbury, 2002). These pedagogies can foster sustainable

changes in students' mindsets. Sustainability pedagogies will help learners to evaluate critically their perspectives and behaviors in the context of sustainability. As Murray et.al., (2014) suggests, sustainability pedagogies may empower and equip students to move towards sustainability in their personal and professional lives.

First Blincoe (2009, p. 206) identified some critical tasks needed to achieve an *'education for transition'*. The starting point would be the rethinking of curriculum design by involving more intuition, imagination, wisdom, spirituality and more holistic approaches, as well as knowledge about the interdependence and interconnectedness of all things. This broad spectrum could involve teaching learners how to relate to other people and learn to become part of a community; thus, helping them to become more authentic as people by learning self-acceptance.

Defining ESD Competencies

In Latvia as in other nations the term *'competencies'* has become a social science buzzword that spans across many disciplines. ESD competencies were identified by the declaration of the United Nations *Decade on Education for Sustainable Development* (UNDESD) (2005–2014) at the ESD World Conference in Nagoya, Japan (2014). Currently, Latvia is undergoing a reform process to integrate competency–based learning into the curriculum. Under discussion are ESD competencies that are now the focus of many scholarly studies. Frisk and Larson (2011) provide a list of important ESD competencies, such as system thinking, long term thinking, stakeholder involvement, and action-oriented competencies. Similarly, Cabrian and Junyent (2014) have developed a theorethical framework of professional competencies, focused on future orientated skills that involve complexity strategies, critical thinking, decision making and the interconnectedness of disciplines (Cebrian & Junyen, 2014). Competencies are characterized as individual dispositions to self-organization that include cognitive, affective, intentional, and behavioral aspects to facilitate self-organizing actions in various complex situations (Rieckmann, 2012). It is essential to keep a holistic vision of competencies in mind, that contain cognitive, emotional, and social components; as well as behavioral aspects, and general aptitudes (Singh, 2015).

Development of ESD competencies are particularly important in a vocational school because vocational students need to become agents of change, both in their workplace and personal lives. They need to be able to identify unsustainability; thus, helping to bring about positive changes. Acquisition of sustainability knowledge and insight into these issues is not enough to create change. What is needed is a change of attitude and develop a sustainability as *'frame of mind'*. It means formulating competencies to enable students to participate in the societal process through testing sustainability issues. A functioning competency framework requires an intersecting, multifunctional and context-oriented set of skills and strategies. This requires transversal, multifunctional, and context-oriented competencies (Rieckmann, 2012).

The European Portfolio for Environmental Education offers a list of competencies, comprising cognitive and meta-cognitive competencies enabling one to learn about sustainability issues (awareness of environmental issues, awareness of complexity, uncertainty, application of knowledge, system thinking); action and behavioral competence enabling to involve students in solving environmental issues (change in a lifestyle, motivation,

decision-making, ICT skills, self-fulfillment); social and citizenship competencies (aware-ness of values, participation, responsibility, decision making, independence, respect for different views, team work, flexibility and optimism) (Pace, 2005).

Challenges for ESD Curriculum Design

Numerous attempts have been made to conceptualize a new curriculum as relevant for meeting the challenges of 21st century. Innovations are mostly related to designing new content by integrating ESD. Curriculum design begins with a philosophy aiming to see students become skillful professionals, problem solvers, and active players in building a sustainable community.

The curriculum planning begins with the formulation of purpose and willingness of the staff members to integrate sustainability as a concept as a frame of mind into the design of the current curriculum. The purpose of the curriculum is to offer integrated and coherent learning experiences that contribute to academic and professional learning development. The curriculum involves set of values and a contract between the institution and the society on what learners should acquire during their learning experience.

The design of the curriculum is supported by a theoretical way to view learning; whether it is student-directed and holistic, process-oriented and student-centered. It should be consistent with the pedagogies and strategies of delivery. A mistake that needs to be avoided is to claim that the lessons are holistic and student-centered but in reality are being delivered in a didactic way. This type of error can send mixed messages to learners. It is important that sustainability is defined not only as a theoretical concept but also is reflected in the content and delivery. Therefore, the teachers of a vocational school not only developed their theorethical understanding on building curricula via system perspective, but also have learned approaches and strategies to deliver a holistic curriculum.

Teachers were asked to reflect on a curriculum design from the system**s** perspective as a complex of interacting and interdependent processes that have a common purpose and that constitute a coherent whole. The health and the coherence of the system is determined by the fact that the system remains open and is intended to exchange energy with the community. The curriculum should be seen a coherent whole. The systems view does not prescribe or promote any particular teaching methodology. Rather it should be seen as a vehicle to think in a more systemic way. Briggs and Peat (1989) provided a description of systems as ultimately un-analyzable, irreducible into parts, because the parts are being folded into each other by iterations and feedback. Complex systems are often heterogeneous and made up of diverse elements (Larsen, Freeman & Cameron 2008). The interrelationships and connections among different elements of the system behave in a non-linear way (Larsen-Freeman & Cameron 2008). The com-plexity of curriculum development is determined by learners' differences and needs, the learning process, and various aspects of the school's management policy. Complex systems are open systems that allow energy flow, infusion and constant modification. It makes the system a self-organizing process after the initial chaos followed by the integr-ation of innovative elements in praxis. Briggs (1992) emphasizes that reflection and feedback allows the system to evolve.

Adopting ESD Pedagogies

Integration of sustainability issues in the curriculum is not enough. It requires innovative ideas and approaches on how to facilitate a learning process to prepare students for developing sustainable futures.

This approach requires the use of sustainable pedagogies characterized by the use of problem-oriented, participatory methods and used in combination with formal and informal learning. Students need to learn how to deal with increasingly growing amounts of information, complexity and uncertainties by the use of critical thinking and problem solving methods. The new curriculum requires ESD pedagogy that is collaborative, inquiry-based, practice-oriented and transdisciplinary. ESD content need to be adapted to a current traditional disciplinary-build curriculum. It needs to be built on all levels: policy level, organizational, power, cross-disciplinarity on classroom practice level. The classroom interaction needs to be built on such principles as openness and democracy in a decision-making. It also requires teachers' creativity and innovative thinking in redesigning their teaching practice. Teachers need to relearn ways of transdisciplinary knowledge governance by the involvement of multiple stakeholders. As Lansu et al. (2013) and Dloha et al. (2013) argue, vocational school needs to develop a close cooperation with stakeholders, thus expanding a space of the formal educational setting.

Data Gained During Research

Interview data: Personal context (learnings)

The authors interviewed staff members of the vocational school on the main gains during the project. Prior to that projects' leaders and experts in the field who conducted training sessions for the team of teachers provided a safe learning space for the teachers with a rich texture of optionality by leaving room for a continuous experimentation and revisions of current teachers' perceptions. The staff members who took part in this study reported that they had gained a lot as a result of being part of this study. They had broadened their teaching competence, learned new methods of teaching ESD, and developed a new perception of sustainability from a systems perspective. There are few highlights that are discussed below:

Epistemological shudders

After completing the first training sessions, the teachers felt a slight discomfort or skepticism after acquiring newly obtained knowledge. The seminars have enlarged the teacher's frame of reference and evoked new ways of looking at things. Somerville (2007) describes this process as disorientation or *'epistemological shudder'* (Charteris, 2014) that causes confusion before new understanding is being generated. As one of the project participants admitted: "*At the beginning I was not clear how to fit the obtained information within the busy current academic discourse. Afterwards, I reflected on it and found some space how it can be incorporated in my current practice.*" Data gained from the interviews indicated that the staff members payed more attention to processual learning. As one of the staff members commented: "*It was great to be a part of this international project when the experienced staff members demonstrated how sustainability methods work in practice and involved us in a participative learning process. It made a big difference to try the methods out rather than to read about them in a book.*"

Another participant commented that she had tried some of the methods in practice, and she noticed significant changes, such as students' increasing motivation to take an active role in learning. Participative pedagogy fostered an open and inclusive dialogue among the participants of the project.

Critical Reflection

The participants employed ***critical skills*** for integrating the new knowledge into current practice: *"Obtaining new ideas during all workshops encouraged me to try out the methods out in my practice. While trying out the new methods, I have made content revisions about the outcomes of the educational process."* Teachers were trying things out, they were ready to rebalance and move responsibly with what emerges. When developing practical skills, teachers "avoided putting all eggs into one basket." They were persistent in exploring and testing the new discourse and ideas as opposed to the current ones.

Within the framework of the project there were project partners and professors from other countries who provided critical feedback about their experiences that gave room for improvement and further reflections. The teachers from the vocational school in Latvia also had a chance to observe lessons conducted by the teachers from the other project countries. Afterwards, as one of the teachers commented: "From the international perspective of the critical friends' visits to the schools, provided an opportunity for us to see that the innovations that are introduced in the vocational school in Latvia are similar the ones in other countries. Considering differences in diverse locations, we could see evident differences as well as similarities in what we were doing." Critical friends' visits allowed the teachers to take a critical look at their practice as well as to gain a valuable learning experience on integrating sustainability in their curriculum.

Interview Data: Institutional Level (Changes in a curriculum design)

After mapping the field and evaluating the current approaches to a curriculum design, the teachers took part in several international workshops where they learned new strategies and methods for teaching sustainability issues. The teachers made a commitment to try out the ESD strategies and integrate them into their subject matter. Before the start of the project, international experts in the field invited teachers to reflect on the purpose of ESD education: that it not only trained competent employees, but that it also empowered flexible and creative human beings.

Prior to this, international experts in the field invited teachers to reflect on the purpose of education for ESD so as to train not only skillful employees but also empowering integral, flexible and creative human beings.

Newly acquired knowledge and theories on ESD, particularly, system approach was in a constant process of negotiation and modification as appropriate for the local context of the school. The extent to which ESD was integrated in a curriculum depended on each participant's initiative, interests and engagement with the ESD. The project leaders defined sustainability as a continuous exploratory pursuit through open-ended learning. Administrative support of school leaders and school's environment that was open for changes and innovations has also served as a motivating factor for integrating sustainability in the school environment. As the head of the school commented: "School is trying to be ahead of time by integrating contemporary technologies and approach to teaching."

Interview Data: Group Context

The benefit of the international project was a new learning experience gained by working in a team of motivated and enthusiastic teachers. Participation in the project was strictly voluntary. During the first year of the project, all workshop sessions were followed by critical reflections in the group on which strategies were most relevant for curriculum design in particular contexts and their particular schools. The main emphasis of the project was to integrate sustainability within the currently existing curriculum design. The current curriculum was based on a result-oriented approaches, emphasizing knowledge building; while integration of sustainability required a more process-oriented pedagogy. The project's experts equipped teachers with knowledge, methodologies and imagination necessary to achieve these results and act together as a learning community.

During several intensive one week workshops offered by the leading exerts in the field, the teachers were engaged in a process of exploration of their current understandings in an environment that was conductive to learning. The experts provided a space were divergent interests, values, and constructions of reality could meet in one spot. Teachers were learning from each other and, as a result, became individually and collectively more competent. The differences in their views and beliefs become the key to the learning process. Social learning has been designed by the organizations to involve teachers in the processes of changes (Cramer & Loeber, 2007). Still, the research shows that transformative change in the learning process depend upon the willingness of the staff members to engage in such a process (Hegarty, 2008).

Barriers of Integrating ESD in the Curriculum

As the main barriers for developing an ESD-oriented curriculum, the teachers felt that there was not enough time to implement the participatory methods and little willingness among the staff members to challenge existing approaches to teaching. Among the main barriers to integrate a sustainability identified by the teachers in a vocational school was a lack of teachers' expertise, a lack of time to introduce other innovations in an overcrowded curriculum, as well as a lack of commitment.

As one of the teachers' commented: *"Learning new ways to teach sustainability by student-centered methods is very exciting, but the curriculum is so overcrowded that I cannot spend extra time trying out the suggested methods."*

Another teacher maintained: *"While trying out some of the newly acquired methods, I see that students are very motivated and interested to learn new things, but, unfortunately, I cannot use those methods on a regular basis due to a lack of time."*

Involvement of Multiple Stakeholders

The Vocational school has developed a cooperative relationship with sustainability oriented stakeholders from the diverse sectors. These relationships developed students' competencies to deal with complex regional issues. EC (2017) has issued the document stating the importance of multiple stakeholders' engagement on implementing Sustainable Development Goal.

Conclusions

There were a number of significant documents and declarations ratified by the governments of Latvia on ESD but they alone cannot ensure implementing sustainability at the institutional and the level of practice. Politicians have managed to put sustainability issues on the political agenda and raised awareness on sustainability concerns. Sustainability issues are complex and multidimensional, lately defined as "wicked ". They seek a long term thinking and acting by addressing the social, environmental and value aspects of human practices. Still, education for sustainable development is a gradual process and cannot be speeded up.

Sustainability challenges and approaches vary from institution to institution, and the definition of sustainability is variously interpreted as well as the definitions of sustainability are contested. Schools and higher institutions have always played a major role in introducing innovations and are ahead in thinking and acting for a well-being for all. While vocational school serves the globalizing market economy, it also serves as a source of innovations in sustainability.

Higher education institutions and schools are the appointed leaders of innovation in the society. Vocational education has played a special role in the global market economy and has often helped to realize innovations for sustainability.

The commitment to sustainability should be central to vocational schools to reflect more closely the statements of purpose and mission that are their stated guides. On a practical level, it should be reflected through the sustainable practices of an institution.

On the curricular level, change involves identifying current practices, framing learning outcomes, and designing appropriate learning activities and assessment tasks. After three years of continuous reflection and improvement related to this project, the teachers introduced some positive changes in their practices in regard to what and how they teach. As a result of their participation in the project, the involved teachers developed capacities to engage with sustainability issues and determine for themselves the ways in which sustainability can be introduced into their teaching and other activities.

The aim of the international project was to develop the tools and competencies for integrating sustainability into a vocational school curriculum in order to raise awareness of young people about sustainability development. The Project's activities were targeted to vocational school students.

The most important result of the project on Education for Sustainable Development (ESD), was the identification of key competencies that are required for a successful program in sustainable development. The individual and focus group interviews indicated how teaching practices had been changed and restructured to integrate these key competencies for sustainable development. The change and restructuring process had been invaluably assisted by feedback from colleagues and students.

The experience of participating in the international ESD project gave teachers insight into sustainability theories and concepts. The training seminars created opportunities for the teachers to apply their knowledge in a practical way. On a personal level, participation in the project provided teachers with a broader understanding of sustainability issues and enhanced their competencies to reflect on ESD practices.

Systems thinking become the approach of the project to link methods with content and give participants the opportunity to reflect on complexity and uncertainty of issues

and outcomes that ESD entails (Barth & Rieckmann, 2012). Systems thinking is understood as networked thinking, involving holistic and cybernetic thinking as well as complex problem solving.

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Education for Sustainable Development and Multidimensional Implementation.
A Study of Implementations of Sustainable Development in Education with the Curriculum of Upper Secondary School in Sweden as an Example

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Abstract

This article discusses different interpretations of sustainable development in education and if different interpretations of the concept are implemented in Curriculum, with the Swedish Curriculum of Upper Secondary School as an example. According to Agenda 21 sustainable development should be implemented in a multidimensional way. In 2011, a new school reform of upper secondary school was implemented in Sweden which further strengthened the position of sustainable development in school by inserting the term into more syllabuses. However, the multiple instances of the concept do not necessarily mean that a multidimensional interpretation of the concept is implemented in accordance with the objectives of Agenda 21. By using Laclau and Mouffe's (2008) idea of discursive struggle as a theoretical framework it is possible to discern how descriptions of sustainable development essentially give rise to one discursive formation in the curriculum. The articulations of sustainable development in the curriculum rests on an idea of the ecosystem that seem to enforce the natural scientific rationality instead of letting different rationalities contribute to the meaning. The descriptions of sustainable development in the curriculum can be interpreted as a hegemonic expropriation of elements of other discourses, such as the social and economic, into the environmental (ecological) dimension. These results are consistent with other international studies, and emphasises the importance of taking a critical stance to the writings of Curriculum when putting them into practice.

Keywords: Sustainable development, education, politics, implementation, upper secondary school.

Introduction

The discussion, sometimes debate, on what sustainable development is and how it should be depicted in education is a good example of what the political scientists

Ernesto Laclau and Chantal Mouffe (2008) calls a discursive struggle. The struggle is not only about what sustainable development is and how education for sustainable development (ESD) should be implemented in education (Feinstein, Læssøe, Blum, & Chambers, 2013); it is also about politics, about worldviews, about meaning making, and about power.

There are those who argue that ESD is crucial for democracy and pluralism (Breiting, Mayer & Mogensen, 2005; Lundegård & Wickman, 2007; Öhman, 2006), since the concept sustainable development has been implemented as a concept that encompasses several dimensions; environmental, social and economic. Others argue that such education rather is an expression of globalization, homogenization, and ideological power (Jickling & Wals, 2008; Bonnett, 2013a; Knutsson, 2011), since different dimensions of the concept has been enmeshed into only one discourse in the implementation of ESD. According to the international agreement Agenda 21 the multidimensional implementation is what characterizes ESD (UNCED, 1992). Research shows, however, that different national curricula seem to be dominated by a single discourse (Bagoly-Simó, 2014; Chatzifotiou, 2006; Iyengar & Bajaj, 2011). This could mean that the curriculum mainly enforces one way of perceiving reality, one worldview, in contrast to the intention of Agenda 21. The connection between sustainable development and worldview has not been studied at any length so far and Sweden is an interesting example for that.

Sweden is becoming an increasingly pluralistic country. Sweden is also one of the countries committed to the Agenda 21 from the beginning. This should pave the way for a pluralistic implementation of ESD. In 2011, a new school reform of upper secondary school was implemented in Sweden which further strengthened the position of sustainable development in school by inserting the term into more syllabuses. By introducing the concept of 'sustainable development' in several syllabuses, sustainable development becomes integrated into more upper secondary education in Sweden. In contrast, the multiple instances of the concept do not necessarily mean that a multidimensional interpretation of the concept is implemented in accordance with the objectives of Agenda 21 (Jóhannesson, Norðdahl, Óskarsdóttir, Pálsdóttir & Pétursdóttir, 2011). An analysis of how ESD has been incorporated in the new Swedish curriculum is interesting both for comparison with similar international studies and as a contribution to the wider discussion on ESD and pluralism. The overall purpose of this article is therefore to make an overview of different interpretations according to research and then examine how education for sustainable development (ESD) is implemented in the curriculum of secondary school in Sweden in relation to this overview.

Overview of the Research

In 2008 Landorf, Doscher and Rocco noted that very few countries have integrated ESD into their educational curriculum. Much has happened since then, but the research on different comprehensions of sustainable development in curriculum is not extensive. Grice and Franck (2014) found a variation of possible interpretations of the concept in the new curriculum of secondary school in Sweden, but without exploring the interpretations further. Hillbur (2013) says that five syllabuses are central in the implementation of ESD in the new curriculum of Swedish compulsory school, but without any further discussion of how. Chatzifotiou (2002) investigated the curriculum in the UK and concludes that the concept of sustainable development is not clearly defined and that it

is sparsely scattered in the curriculum without control measures. In a later study Chatzi-fotiou (2006) argues that there seem to be two parallel course-tracks in the curriculum, but that Environmental Education (EE) discourse, focusing on the environmental dimension, tends to override the ESD discourse, focusing on both the environmental, economic and social dimension.

Beyond Europe, Iyengar and Bajaj (2011) analysis of state and national syllabi in India indicates a focus on conventional, natural sciences approaches to the environment, thus neglecting the social science aspects of ESD across all grade levels. Bagoly-Simó (2014) examined the lower secondary geography curricula in Germany, Romania and Mexico and found that the implicit conceptualizations of sustainable development focus on the environment and the protection thereof, and that elements of ESD are subject to neoliberal or post-colonial ideological interpretation.

The findings of Grice and Franck support scholars in ESD that argue that ESD consists of several different interpretations of sustainable development. This stance is further illustrated by Wals (2010, p. 388), who defines ESD as the creation of space for pluralism, consensus, disagreement, and counter-hegemonic thinking. Læssøe (2010) is on the same track when he argues that all approaches to ESD are part of an ongoing discursive struggle.

Other researchers argue that there are essentially two understandings of ESD, but they appear to merge into one. This might be what the results of Chatzifotiou's study (2006) indicate. Knutsson (2011) argue that it is distinctive to the understanding of ESD in Sweden. Although ESD started as an area comprising several discourses in Sweden, the urgency of setting the education in motion resulted in the conflicting understandings being downplayed (Knutsson 2011, 204), a tendency confirmed also in other countries. For instance, Jabardeen (2008), Selby (2006), and Stables (2001) identified two discourses in ESD, the ecological and the economic, but Selby claimed that the ecological understanding was absorbed by the economic discourse. Sustainable development therefore came to be about identifying and measuring sustainability of the ecosystem, in order to calculate how much resource extraction, it would withstand (Selby, 2006). Also Bonnett (2013b) elaborates on two discourses: the sustainability discourse where preservation is the centre and the developmental discourse where progress is the core. This is so, he argues, because ESD has been enmeshed in scientism unifying the two. Furthermore, Korfiatis (2005) identified two other discourses in ESD: the modern science and the ecological discourse, and stated that in reality, the hegemonic role of science causes them to merge.

Finally, some researchers regard sustainable development and ESD as essentially consisting of a single discourse. The results of Bagoly-Simó (2014) and Iyengar and Bajaj (2011) seem to point in this direction. Fergus and Rowney (2005) acknowledged that a scientific-economic paradigm, attained through scientific methodologies, dominated the interpretation of sustainable development. Læssøe (2010), on the other hand, identified ecological modernization as the dominant discourse of sustainable development in northern Europe. This discourse is characterized by a market driven economy, moving towards an environmentally sound practice. There is no conflict between ecology and economy in this single discourse; they support each other's perspectives. The homogenization, harmonizing of conflicting understandings, is occasionally linked to neoliberalism as a globalizing force (Ideland & Malmberg, 2014; Jickling & Wals, 2008; Öhman & Öhman, 2012).

These different argumentations show that the question of how sustainable development is/should be interpreted and ESD implemented is not settled. As in Bagoly-Simó (2014) study (unlike Grice's and Franck's study), this study will focus on how sustainable development is understood and ESD implemented in the curriculum. Chatzifotious, Bagoly-Simo's and Iyengar and Bajaj's results show that although different interpretations of sustainable development exist in the curriculum, they may coincide in a single dominant discourse.

A Theoretical Framework

To be able to analyse the comprehensions of sustainable development in the curriculum as a matter of possibly different ESD discourses (worldviews), the theories of the political scientists Chantal Mouffe and Ernesto Laclau are well suited. In the curriculum sustainable development might manifest itself as an expression of what Mouffe (2014; 2012) calls 'the political' (antagonistic pluralism) or as an expression of 'politics' (hegemonic practice).

The political (pluralism) is according to Mouffe characterized by being antagonistic with several discursive formations existing and struggling over meaning. The interpretation of sustainable development is then implemented by several competing discourses. Politics (consensus), on the other hand, is characterized by hegemony where a set of practices seek to establish a certain order. The interpretation of sustainable development is then implemented by one, dominant, discourse. Antagonism means that an idea, or an assertion, is contradicted by another, opposite, idea. It is therefore negative and represents the limit of a given order (Laclau and Mouffe, 2008, 183–186). This means that an interpretation not is able to dominate: the discourses 'remind' each other about the limit of what can be claimed. A discourse becomes hegemonic when, through articulated practice, it succeeds to expropriate and redefine one or more of the other discourse's elements in accordance to its own centre (Mouffe, 2000, 148). One interpretation dominates over the others; it spreads out and becomes limitless. The words 'politics / political' could lead to the idea that some people are responsible for discourse / -s, but that is not the case. Discourses are deeply rooted systems of meaning in a culture which structure individual's worldview and change slowly and often unexpected (Svalfors, 2008).

Some of the ideas of Laclau and Mouffe will be used as analytical concepts. Laclau and Mouffe describe *discourse* as an articulate practice, which constitutes and organizes social relations around a concept that will thus represent an idea and through that process ascribes meaning to the concept (Laclau & Mouffe, 2008, 169f). An *articulation* is accomplished by establishing chains of *equivalence*, i.e., *linking* an idea with elements creates contingent relationships. A *social phenomenon* is organized when linkages instils meaning in a disputed concept.

Materials and Methods

This study focuses on national policy documents – the curriculum and syllabuses – of upper secondary school in Sweden. They are central normative documents for education by setting goals for teaching and for students. In the knowledge requirements the goals of the students are related to various grades. The analysis comprised all texts in

Curriculum for the upper secondary school in Sweden 2011: the fundamental values and tasks of the school, overall goals and guidelines (Skolverket, 2011a), all 247 subjects of the secondary school and their syllabuses (in total c. 990; Skolverket, 2011b), with focus on parts that describes the meaning of sustainable development.

The analytical steps consisted of first searching for instances of 'sustainable development', second scrutinizing what elements that was linked to the concept and third to find out the meaning that articulations instils in 'sustainable development' and thus organizing it into a meaningful social phenomenon. The intention is not to give an exhaustive description of sustainable development in the Curriculum, but to highlight the relations that mainly organize the term into meaningful social phenomenon.

References in this study are made by subject and page according to the downloadable documents on the website of the National Agency of Education in Sweden (http://www.skolverket.se). 'Science studies: 3' hence means page three in the document of the subject Science studies. All titles of the courses and the content of subjects common to upper secondary school and its programs are translated into English by the National Agency. The texts of optional subjects and courses are translated by the author.

Research Results

The result is structured as follows. First the meaning of sustainable development is presented, received through the articulation of sustainable development. Then the meaning through the articulation of sustainable society is studied. Finally, the two articulations are compared and the question of one or several discourses is treated.

The expression 'sustainable development' was found in 55 of approximately 250 subject syllabuses, but was in most cases not organized as a social phenomenon. Sustainable development is something that a subject's knowledge as well as models needs to be related to, but its precise implication is not determined in the formulations. A quite common use of the notion is found in Business Economics, which states that the subject should give the students the opportunity to develop:

> *The ability to reflect on the responsibility of business for sustainable development and on democratic values, ethics and gender when financial decisions are made* (Business Economics)

The quote concerns the social and economic dimensions of sustainable development, but not the environmental dimension. Sustainable development is linked to democratic values, ethics and gender and thus it becomes something that primarily concerns the core values of the school. Sustainable development is further said to be something that the student is expected to reflect on in the context of economic decision-making. However, no further description of what the social and economic dimensions of sustainable development concretely mean in business terms exists. Thus, the formulation does not constitute an articulation in discursive terms. In some subject syllabuses, however, articulations of sustainable development are expressed.

Sustainable Development

In this section, linkages that primarily organize the sustainable development concept into a meaningful social phenomenon will be discussed. The analysis will show that

sustainable development is equated with the ecosystem, characterized by harmony and immanent development.

In the subject Science, the denotation of sustainable development is articulated in the following course objectives:

> *Issues concerning sustainable development: energy, climate and impact on the ecosystem. Ecosystem services, utilisation of resources and the viability of ecosystems.* (Science studies, 3).

A recital like this might seem unproblematic at first sight, but each recital is preceded by a choice situation where some parts have been selected, while others have been discarded. In the recital above, the denotation of sustainable development is formed by its constitutive parts being recited after the colon sign. The colon is important here since it contributes to the organization of the discursive, it 'accomplishes' the equivalence. Energy, climate, and impact on ecosystem clarify what sustainable development 'is' without being identical with it, and ecosystem services, utilisation of resources, and the viability of ecosystems illustrate it further. These parts will represent the whole; these elements represent sustainable development. The recital is hence not a transcription of reality as such, but is performative; it creates actuality, and equates sustainable development with ecosystem.

Biology is in several aspects the 'mother' of the Science subject – Biology enhances the comprehension of concepts as well as the knowledge and capabilities that in the Science subject are introduced at a more simplistic level. Sustainable development is in Biology even stronger articulated, particularly in association with ecosystems, and ecology is constructed as 'the logics' of the ecosystem. The phrase 'ecologically sustainable development' clearly establish the relation between the two (Biology, 3). The subject syllabus furthermore states that biology is important in society because it protects 'the Earth's ecosystem through the ecology' (Biology, 1), and sustainable development is what constitutes this protection. Expressions like 'ecologically sustainable solutions' (Construction, 9) and 'ecologically sustainable way' (Fishery, 1) further enforce the equivalence between sustainable development and ecosystem, even though the expressions not explicitly concern sustainable development or ecosystem. It might seem awkward to bring together different writings in this way. In reality they belong to different subjects and therefore might become totally different concepts in education. In this study, however, the curriculum and syllabi is regarded as one coherent meta-text enabling one or more perceptions of reality.

The equivalence between sustainable development and ecosystems is further strengthened in the curriculum. Concepts established in Sustainable society are related to concepts of the ecosystem: 'The subject treat […] environmental challenges, management of natural resources, ecosystem sustainability, technology development, community planning and environmental policy' (Sustainable society, 1). This text presents two dimensions – the ecological and the social – but the ecological dimension dominates. And the expression 'ecosystem sustainability' re-establish sustainability as something related to the ecosystem again.

Other elements listed in relation to sustainable development are 'climate changed world, access to water and arable land, natural hazards and abandoned threats, natural resource use and resource conflicts' (Geography, 1). These elements enforce the equivalence between sustainable development and ecosystem in an indirect way. They are not

as strictly organized as in the examples before, but rather described as 'examples' of what matters concerning sustainable development might involve. Still the elements are partly the same as in the articulation in Science studies and Biology as described.

What is more – the Biology subject establish a linkage between sustainable development and religion. The core content includes:

> *Issues concerning religion, ethics and sustainable development linked to different working approaches of biology and its areas.* (Biology, 6)

The formulation relates Biology to Religious studies, where religion and ethics mainly are processed in the curriculum. However, the subject plan of Religious studies does not contain the concept of sustainable development. This means that scientific rationality (biology working approaches and areas) instills meaning, also in the concept of religion in terms of sustainable development.

Sustainable Society

Another articulation that contributes to the meaning of sustainable development is 'sustainable society'. This section shows how sustainable society is characterized as a vision of the curriculum and requires an active person who causes the development.

Articulations relating sustainable development to values, often appraise sustainable development in terms of sustainable society. The expression 'sustainable society' is used in only six subject syllabuses in the curriculum of upper secondary school (Architecture, Physics, Production philosophy, Social science, Sustainable society, Technology), thus occurring considerably less than the expression 'sustainable development'. It is nevertheless of major import in the curriculum, in constructing the meaning of sustainable development.

In the Sustainable society syllabus, sustainable society is established as a specific subject in which education is carried out: 'The teaching of the subject sustainable society should aim to develop the students understanding of the conditions, motivations and values underpinning work with sustainable development' (Sustainable society, 1). This stance distinguishes sustainable society from sustainable development. Sustainable society is furthermore described as comprehending all three dimensions of sustainable development: '[t]he subject of sustainable society is interdisciplinary and illustrates the concept of sustainable development from ecological, social and economic perspectives' (Sustainable society, 1). The expression differs from sustainable development, which is instead described as a field that contains concepts: 'The teaching of the subject sustainable society should give students opportunities to develop following: […] [a]bility to apply concepts in the field of sustainable development' (Sustainable society, 1). Sustainable society is also depicted as a phenomenon that is linked to lifestyle issues: 'Associations between lifestyle patterns and the design of a sustainable society' (Sustainable society, 2). Sustainable society is in summary established as an idea that encompasses different perspectives and values regarding sustainable development. What really sets the two apart is this: In sustainable development, nature stands in the centre, but the sustainable society places mankind in the centre: 'It [the subject Sustainable society] deals with the interaction between humans and their environment' (Sustainable society, 1).

The sustainable society is in a sense constructed as the social and economic dimensions of sustainable development. At the centre of its articulation, the active, community-

building human is moulded. The teaching should give the students opportunities to develop '[k]nowledge of various conditions and opportunities for achieving sustainable development […] [a]bility to identify, analyze and define the problems and propose and compare alternative courses of action […] [a]bility to plan, implement and interpret their own inquiries and suggestions' (Sustainable society, 1). Sustainable society is articulated as a social phenomenon with an active human that plan, implement, interpret and value different actions at the centre.

Sustainable Society in Technology

Besides the subject Sustainable society, Technology is the subject most prominently using the term 'sustainable society'. Technology is depicted as a subject balancing between natural and humanistic sciences in the curriculum, as it is focusing on human exploitation and transformation of nature's resources: '[t]echnology involves fulfilling human needs and preferences by transforming the physical resources of nature or immaterial assets in products, processes, facilities and systems.' (Technology, 1). This constitutive part of the subject Technology makes it coincides with the subject Sustainable society.

Sustainable development, as it is understood in the natural science subjects, mainly involved preservation of the balance or harmony of the system as discussed. In contrast, sustainable society is in Technology equated with a vision of something that provides perspective on the subject. The vision of a sustainable society may affect and change the meaning of technology. The students are expected to develop: '[t]he ability to analyse and assess technological solutions taking into account sustainable societies' (Technology, 1).

The Technology subject is thus harbouring another kind of critical facet than the subjects of natural sciences: the own subject's results (obtained by the subject's methods and knowledge) should be assessed from the view of a sustainable society. The goal is that students will be able to assess the solutions obtained with the subject methods based on a vision – the vision of a sustainable society. The Technology subject then turns more 'ethical' in character in the sense that the articulation establishes value judgement as constituent of the subject. According to the general description of the subject, this is also the case: 'Teaching should prepare students to actively take part in and influence technological development from an ethical perspective' (Technology, 1).

Antagonism or Consensus?

Are these two articulations (1. ecosystem – nature – immanent development and 2. vision – human – intentional development) antagonistic? In other words, do they generate different discursive formations with diverging comprehensions of sustainable development, competing with each other? The answer is yes – and no.

Yes, they do compete. As already discussed above, their focus and approach to development differ. The focus in sustainable development is nature, the ecosystem, and maintaining balance. This is accomplished by allowing as few disturbing elements as possible. In this articulation, development is depicted as immanent, interwoven with evolution. The focus in sustainable society is instead the human and her vision of a better future. To be able to achieve this state of affairs, man needs to be active, adopting

a critical approach to knowledge, and valuing different actions. In this articulation, development is depicted as intentional.

But the opposite answer is also legitimate: No, they don't compete. What links the two viewpoints is a central position of resources and resource distribution in both. In relation to sustainable development: "Issues concerning sustainable development: […] utilisation of resources […]" (Science studies, 3) and in relation to sustainable society: "[t]he subject […] deals with issues of […] management of natural resources" (Sustainable society, 1). Both articulations presume that a balance exists (or should exist), and that it must be maintained by mankind. In the one case, this must be attained by not disturbing the natural order and in the other case by acquiring a deliberate standpoint at a global level. The idea of a system in balance is shared by the two different types of articulation. This perception, we argue, rests on the articulations harbouring the same idea of the ecosystem.

The curricular account of sustainable development's history of ideas supports this interpretation:

> The [Science] *subject covers health, energy and sustainable development, knowledge areas that have emerged in the intersection between science and social science* (Science studies, 1).

Sustainable development emerged in the tension between nature and mankind/culture, between laws of nature and the needs and sociality of humans, i.e. between biophysical causal systems and socio-cultural contextual systems, a fact that explains its double focus – nature and mankind. Effectively, the double focus is not double. Sustainable development centres on a system in balance, where development displays different expressions depending on whether mankind or nature is highlighted in the articulation. We therefore argue that the two articulations generate one discursive formation with one comprehension of sustainable development.

Discussion

The overall aim of the present study was to uncover how sustainable development can be comprehended in the curriculum of upper secondary school in Sweden with a discourse perspective and thus understand how ESD has been implemented in the text. Focusing on the relation that mainly organized the term into meaningful social phenomenon, the readings disclosed that the curriculum contains two articulations: sustainable development and sustainable society. These discursive articulations constructed one discursive formation with mainly one comprehension of sustainable development. In this section these results will be related to earlier research and to the discussion on politics/the political.

The ongoing discursive struggle that no ESD can avoid (Læssøe, 2010) is not visible on the surface of the curriculum of upper secondary school in Sweden. Bonnett's (2013a) understanding of ESD seems to closely resemble what can be discerned in the texts – the articulation of sustainable development centres on preservation, and the articulation of sustainable society centres on progress. In the Swedish curriculum they are however part of the same discursive formation, based on the ecosystem. This is in congruence with Bonnett's argument that the two discourses have been enmeshed in ESD, sanctioned

by modern science (Bonnett, 2002, p. 17). The articulated practice establishes a certain order, the order of natural scientific rationality.

As an alternative approach to natural scientific rationality, Bonnett suggests an eco-centric approach to sustainable development. Korfiatis argues that the ecological science is no alternative to modern science, since science appropriates its categories in a hegemonic gesture (Korfiatis, 2005, p. 236). This is one way to interpret the implementation of ESD in the curriculum – sustainable development substantially enables only one worldview. The articulations of sustainable development in the curriculum rests on an idea of the ecosystem that seem to enforce the natural scientific rationality instead of letting different rationalities contribute to the meaning, according to our analysis.

Even if the curriculum is presenting sustainable development as emerging in the tension between nature and humankind, between 'physical science and humanities', as Stables (2001) put it, the term sustainable development does not appear as a 'paradoxical compound policy slogan' (2001, 252) in the curriculum. On the contrary, it appears to be relatively consistent. The ecological modernization discourse, which is the dominating discourse in northern Europe according to Læssøe (2010), is visible in the descriptions of sustainable development in the curriculum and syllabuses. The formulation of sustainable development may therefore in the curriculum be understood as a hegemonic expropriation of elements of other discourses, such as the social and economic, into the environmental (ecological) dimension. The identified two articulations were not found to be antagonistic – they did not represent the limit of each other's order.

This result is consistent with the results from the Chatzifotiou's (2006), the Baoly-Simó's (2014) and Iyengar and Bajaj's (2011) studies. As in the British, Indian, German, Romanian and Mexican curriculum, the environmental dimension tends to appropriate the other dimensions of the concept. Without drawing any further conclusions from these few and limited studies, it is still interesting given that they represent three different continents.

Excluded from the Swedish curriculum is hence an equally thorough understanding of the social and economic dimensions of sustainable development that might challenge and balance the natural scientific. They are not absent, but they do not permeate the understanding of sustainable development in an equally significant way. They are not part of the central linking processes and do not thus construct sustainable development as a social phenomenon in a discursive sense. This means that the social and economic dimensions have little impact on ideas of what sustainable development is. Consequently, and in accordance with Badjanova and Ilisko (2015) argumentation, it is up to the individual teacher to apply a more holistic understanding of sustainable development in their class. The curriculum and the syllabuses do not seem to promote socio-cultural competence, so vital for sustainable development (Zygmunt, 2016).

Transferring such analytical categorizations to the ambiguous context that school and society constitute is not easily accomplished. It is nonetheless possible to deliberate over the interests arising as a result of students becoming overdetermined within the framework of the policy documents of the secondary school. In line with the reasoning of Laclau and Mouffe (2008), one could say that the technicians in the society are the ones conveying the discourse, making it manageable, with the ambition to perfect it as a societal vision. Following the thought of Popkewitz (2008, 32ff), one might argue that to the technician, 'reasonability' and 'science' overlap in such a fashion that it forms communal belonging and salvation themes. The articulations pave the way for the techno-

crat in the vision of a sustainable society (Greek: techne – skill, kratos – exercise of power). Through knowledge, and capability of managing sustainable development, the engineer becomes the expert in the field. The findings of Biasutti and Surian (2012) seem to point at the same direction: engineering students at the university level have a more pro-sustainability attitude than students in for instance health sciences and social sciences.

We conclude that this consensus of sustainable development constitutes the comprehension of sustainable development in the curriculum of upper secondary school in Sweden as politics – the environmental perspective dominates. Since these results are congruent with international studies, it emphasises the importance of taking a critical stance to the writings of Curriculum when putting them into practice. Not the least to be aware of if the natural rationality excludes other rationalities and by that excludes a multidimensional implementation. In the Swedish Curriculum it appeared to be the technology student that acquires the needed competence to for contributing to a sustainable development. This is not that surprising, since Sweden has a long history of engineer entrepreneurship. Further research on implementation in other countries may reveal other rationalities.

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