Education for Sustainable Development in time of crises

Possibilities for learning concerning an unknown future

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Abstract

A new pedagogy that can manage an unknown future is needed in time of crises. Especially the western world needs a change in attitudes, behaviors, and lifestyles. The world has changed, with destructive consequences for many, will continue to change and will not return to the situation 'normal'. That is, it will not return to "normal" global temperatures or species abundance and fluctuations experienced by earlier generations of humans. The epoch has been labeled 'The Anthropocene'. With the pandemic, also our daily social life has changed and have an impact on us as human beings and our relation to nature. The planet is facing problems that are of such a kind that they cannot be looked upon as only technical problems. The pedagogy of today partly confirms and gives support to a kind of *status quo* in society - or business as usual. This paper aims to illuminate and discuss how a pedagogical model for education and teaching could be formulated that manages the challenges for education and pedagogy concerning an unknown future. For our discussion, keeping the Anthropocene in mind, we present the main ideas of *Wild pedagogies* [WP]. WP began as a graduate course at Lakehead University (Canada) and was later developed through an international network. WP tries to rethink education and re-examine relationships with places, landscapes, nature, more-than-human beings, and the wild. WP also tries to challenge recent trends towards increased control over pedagogy and education, and how this control is constraining and domesticating educators, teachers, and students. In WP six 'Touchstones' are intended to be reminders of what educators could do in teaching. We have used an abductive approach for the analysis and content analysis as method. We used constructive critical didactics as a theoretical framework. This gave possibilities to illuminate what perspectives and strategies educators and teachers can be aware of and how that could have an impact on theories, practices, and approaches in education. Our results show that educators can problematize the dominant versions of education that are enacted in powerful ways and turn to a practice that challenges a human-centered view and unecological *status quo.* Given the dominant current human relationship with the earth cannot be sustained we posit that any critique suggested must be paired with a vision - and corresponding educational tools. We discuss this through possible didactical concepts. A conclusion is how it allows for the possibility to enact a new relationship through education that also has an inexorable impact on how to understand learning and teaching.

Keywords: Abduction, Content Analysis, Education, Didactics, Sustainable Development, Wild Pedagogies

1. Introduction

Our point of view is that we are heading towards an unknown future with accelerating progress. The world has changed, with destructive consequences for many, will continue to change and will probably not return to the situation 'normal'. That is, it will not return to global temperatures or species abundance and fluctuations that fall within the kinds of background levels experienced by generations of humans. (ipcc.ch, 2014). The pandemic has changed our daily life and has an impact on our relationship with nature. We think that the problems the planet is facing are of such a kind that they cannot be looked upon as only technical problems. Generalists who can combine many different forms of knowledge need to be educated (Bhaskar et al., 2012). Today's problems cannot be handled by continuing on the same path we have chosen. We need other innovative ways of living and the joy of a more nature-friendly life.

The time we live in has been labelled 'The Anthropocene' (Jickling et al., 2018). It is used to describe how human activity has an impact on the physical processes of the earth and puts man in the center. This worldview has been heavily criticized by using a concept as Anti-Anthropocene. Anti-Anthropocene illuminates man’s responsibility for the situation and at the same time the impossibility to control how things develop. Learning to live within an unknown future then becomes important. Another important point is that the challenges we face require a critical approach to question the priority of knowledge on behalf of democratic values. The knowledge issue is instrumentalized and when what can be measured has become most significant (Englund et al., 2012). Economic interests and the labor market are at the forefront, where the benefits of education are valued concerning educating technocrats more than educating citizens for a democratic society (Forsberg & Wallin, 2006). The demands for clarity and an evidence base for how the school's objectives are achieved, which is often based on New Public Management [NPM] as logic, is a threat to moral considerations (Green, 2011). It is even more important than ever before to focus on values and the question of why in education (Biesta, 2009). There is a need to change attitudes and behaviors that can manage an unknown future. This is a pedagogical problem and important in education. But the dominant pedagogy of today confirms and gives support to a kind of status quo in society (Jickling et al., 2018). A time of crisis might need a radical new pedagogy.

Our interest touches on issues of democratic education in particular, as well as issues of knowledge and learning. We need new perspectives in education and teaching that give space for man's relationship to the environment and values, attitudes, and readiness for action. These notions need theoretical concepts that could help us to understand and examine this in a pedagogical and didactical context. This paper aims to illuminate and discuss how a pedagogical model for education and teaching could be formulated that manages the challenges for education and pedagogy concerning an unknown future.

Our argumentation about societal development has a background in critical realism and a Nordic eco-philosophical tradition (Bhaskar et al., 2012). According to Bhaskar critical realism distances itself from postmodern discourse and also questions the dualism between facts and values and emphasizes that values can be rationally reasoned. It questions the Western worldview that maintains regularity, predictability, and control (Jickling et al., 2018; Morse et al., 2021). In this paper, these perspectives give a possibility to critical interest and to focus on both questions of why, of values and practice (see e.g. Biesta, 2009).

We present the main ideas in the concept of Wild pedagogies [WP]. WP began as a graduate course at Lakehead University (Canada) and then later developed through an international network of engaged pedagogues. WP tries to rethink education and re-examine relationships with places, landscapes, nature, more-than-human beings, and the wild. WP also challenges recent trends towards increased control over pedagogy and education, and how this control is constraining and domesticating educators, teacher's engagement, and curiosity. We consider WP as an interesting alternative for shedding light on issues mainly discussed within education for sustainable development [ESD] and in outdoor education. In WP six 'Touchstones': Nature as a Co-Teacher, Complexity, the Unknown, and Spontaneity; Locating the Wild; Time and Practice; Socio-Cultural Change; Building Alliances and the Human Community, are formulated as reminders to help pedagogues what to do in teaching. To illuminate what perspectives and strategies teachers can be aware of and then discuss how it could have an impact on theories, practices, and approaches in ESD, we reconstruct WP within a didactical framework.

2. Method

Methodologically the study is based on an abductive approach and content analysis as method. The core of abduction is that a notion of something can be interpreted within the framework of other perspectives and theoretical frameworks to reach a more developed and in-depth understanding (Danermark et al., 2018). In an analysis, there are similarities with hermeneutics when it comes to the commute between part and whole. Creativity is emphasized and the ability to associate is central to how theoretical and empirical statements are related to each other as an ongoing process. Empirical data are used as an argument in a debate and in that case, need to be obvious rather than proven (Alvesson & Sköldberg, 2017). This requires a consistent and conscious interpretation. Furthermore, concept formation and theorizing are considered essential in abduction (Danermark et al., 2018). This opens up to discuss how a pedagogical model for education and teaching for sustainable development [SD] can be formulated to manage the challenges for education and pedagogy concerning an unknown future. In didactic research, practice is seen both as a starting point and a reference framework for didactic theory (Künzli, 2010).

We used qualitative content analysis for interpreting the six touchstones. Although content analysis can be both quantitative and qualitative (Krippendorff, 2019). Qualitative interpretative content analysis has roots in critical scholarship (Krippendorff, 2019; Neuendorf, 2017). The method used meant close reading and rearticulating interpretations of texts into new narratives (Krippendorff, 2019). The three stages, selection of text, coding text, and interpretations of the results were implemented (Krippendorff, 2019; Neuendorf, 2017). We reconstructed the six touchstones described in WP Jickling et. al (2018) by using five questions from constructive critical didactics as a theoretical framework (Klafki, 1995;2010a). As in hermeneutics, the relation to social and conditioned understandings was used to get a holistic impression of what the text was about.

Although science strives to be as value-free as possible and hardly can guide us on how we should act concerning nature, values and norms can be subject to rational justification or criticism (Bhaskar et al., 2012). We also posit that a continental didactical tradition and the assumptions found in critical constructive didactics [CCD] (Klafki, 2010b) are fruitful since it emphasizes that teaching practice is always subject to change and that it is dependent on societal changes. What happens in teaching always needs to be traced back to questions about the purpose and content of the education. Even in critical constructive didactics, an integration between hermeneutic, ideology-critical social science methods and empirical studies is advocated (Arfwedson, 1998; Klafki, 1997).

According to Klafki (1995), three questions illuminate the theoretically based norms: What is characteristic of the content and how is it related to the curriculum? What content can arouse students' commitment and learning? How can it contribute to their personal development and the future as citizens of society? Klafki (1995, 2010a) also formulates a didactical analysis for the preparation of teaching, a reflection about the content. The questions of why and what are in the foreground and particular methods to be chosen in teaching are guided by consideration of practical aspects. Planning for teaching is looked upon as a meeting between theoretical and practical perspectives (Künzli, 2010). It is an interpretive activity, not a technical one (Hudson, 2007). The five questions are mutually dependent, they do not have to be answered in order and the answers to each question are only understandable in the light of the other five answers (Klafki, 1995). The questions are:

> *What wider or general sense of reality do these contents exemplify and open up to the learner? What basic phenomenon or fundamental principle, what law, criterion, problem, method, technique, or attitude can be grasped by dealing with these contents as 'examples?*
>
> *What significance does the content in question or the experience, knowledge, ability or skill to be acquired through this topic already possess in the minds of the children in my class? What significance should it have from a pedagogical point of view?*
>
> *What constitutes the topic's significance for the children's future?*

How is the content structured? (which has been placed in a specific, pedagogical perspective by questions I, II, and III)?

What is the body of knowledge which must be retained ('minimum knowledge') if the content determined by these questions is to be considered 'acquired', as a 'vital', 'working' human possession?

The process of interpreting and our analysis occurred in steps: First, we read through the text that describes the six touchstones (Jickling et al., 2018), to get a sense of the content. Then we discussed Klafkis questions and slightly adapted them to be used in the analysis of touchstones. The questions were adjusted to be about a general student, rather than a specific group of students in mind. The questions based on Klafki (1995) was formulated as:

What key elements can be grasped by dealing with this content?

What significance does the content already possess in the minds of the children?

What constitutes the topic's significance for the children's future?

How is the content structured and how could it be situated in a pedagogical context?

What is the body of knowledge to be retained?

We used those questions as analytic tools and condensed the answers for the six touchstones on our own and then met to discuss the result of our analysis. This process ended with a consensus and further refinement of the result as a thematization based on the six touchstones. The reliability and validity of the analysis were confirmed by: a) comparisons of analyses and interpretations of the same data with each other (internal reliability), and b) in collaboration we discussed collected data against relevance for the aim of the paper (internal validity) (Krippendorff, 2019). Within abduction, the interpretations made should be corresponding to the empirical data and with the purpose of the study, this posits that they need to be tested through the conclusions made (Alvesson & Sköldberg, 2008). This is how the theoretical concepts, principles we formulated, give meaning to the empirical data according to our interest. The analysis corresponds with and gives essential meaning to the three suggested principles as theoretical concepts. Overall credibility has been strengthened by communicative validity (Kvale, 1997).

3. Results and Discussion of Didactical concepts

In the didactic analysis that Klafki (1995) proposes, the first question is about key elements. When analysing the touchstones (Jickling et al., 2018), nature is described to be everywhere, and is characterized by an unpredictable process, and is always changing. Furthermore, nature is complex and includes qualities that cannot be quantified. Key elements are how to understand nature as a co-teacher

and the importance for students to be present in nature to listen to voices other than the human ones. Another key element is that the rhythm of nature challenges a mechanistic view of time and space. Accepting and being able to grasp the moments are essential. Teachers' control over how the teaching proceeds is challenged. Teaching needs to be dynamic where the teacher's role is primarily to help the students focus their attention on the relationships between man and nature, as well as between people.

The second question for analysis is about the students 'prior knowledge'. An obvious result is that nature and the environment at the moment should be in the foreground. Here, the focus is on experience followed by reflection over what is experienced. Thereby meaningful moments could be created. Attention should be paid to the fact that nature has intrinsic value, is changeable, and offer surprises. It is emphasized that nature always is present and cannot be understood solely through human culture. Experiencing the rhythm of nature can contribute to another understanding of time and space than a mechanistic view.

The third question focus on what significance the content may have for the student's future. The importance of allowing the content to emerge and develop based on experiences at the moment is particular. Nature provides an opportunity as it is characterized by an ongoing process without any end. Life is characterized by coincidences and creativity. Sometimes small changes take place, sometimes more dramatic changes. The ability to see nuances and dimensions appears to be central and the possibility to see the unknown in the known, the known in the unknown. The students should develop the ability to ask questions from several different perspectives regarding one single experience.

The fourth question about structuring the content shows in the analysis to be closely related to the view of nature as changeable and with different rhythms compared to what usually characterize human existence. Nature cannot be structured and understood only with the help of previous human frames of understanding. This illuminates and grasps the challenge of humans not being able to control events. Instead, the focus is to be aware of and to try to understand the strengths and weaknesses in how we as humans try to structure our relation to nature. The teacher's role will be to help students formulate questions more unconditionally, from different perspectives, and challenge different ideas. The teacher also can help students to critically illuminate the background for the questions they ask. In interaction with other students and together with the teacher, students can create networks of understandings. Doing this is meant to help students to develop a curiosity for a network of relationships between the individual, common sense, and the environment. A complexity is maintained where different perspectives and contexts can form the basis for meaning.

The last question in the didactic analysis is about what body of knowledge to be retained. The idea that students can develop values where the intrinsic value of nature has a given place, emerges. Understanding the complexity and dynamics of nature illuminates the unpredictable. The fact that there are different views on nature is important. Students should be able to make choices based on conscious

ethical norms and change perspectives of a point of view. This opens up for students to understand that they are influenced by their cultural contexts and way of thinking. The ethical and moral readiness for action, in general, is important. Deliberative and relational skills between people and human relations to nature come to the fore. This is about belonging, authenticity, and responsibility for oneself and others as well as the voices of nature are valued.

The result shows how the enactment of a new relationship through education, placing values, attitudes, and readiness for action is possible. The importance of reflection on values, attitudes, and patterns of action in teaching emerge. When formulating principles as didactical concepts it seems that issues of change and the unknown can and should be in the foreground. To formulate theoretical concepts and a didactic model, it becomes important not to establish the overall objectives for education or provide restrictive methodological instructions. This view of teaching challenges the modern Western education system, which is characterized by control and standards. Although education needs to incorporate both stability and openness, in this case, stability becomes something else. With the results as a starting point, a pedagogical model for education and teaching can be formulated is discussed through three possible didactical concepts: the principle of order; the principle of questioning, and the principle of wild learning. Those concepts have a background in what Klafki describes as theoretical norms. In our case, this is about how to understand how values and the unknown emerges with interest in ESD in time of crises. Those concepts also correspond to what Klafki (1997;2010b) describes as the aim for the critical constructive didactics as developing relations between theory and practice. A didactical model aims to both a theoretical construction for analysis and planning of didactic action in teaching and learning (Jank & Meyer, 1997).

The principle of order – experiencing and being present in the situ: Just to be in nature becomes central. Participating in nature emerges to be prior and primarily, and to be experience-oriented, intuitive, and also presupposing a presence in situ. It becomes important to capture the moment and thereby develop the ability to ask questions, and searching for relationships. This makes it possible to create meaningful moments through reflection and the opportunity to be aware of the diversity of perspectives and points of view. In the foreground is the importance for students to spend time being in nature and to locate the wild without being forced into a logical rationale or a pre-defined interpretive framework for the experience. The starting point should be the student's prior knowledge from being in situ in a broad sense. This is without the teacher having assumed or being able to predict what the students will learn. It challenges views of knowledge and learning.

The principle of questioning - to understand the relationship between nature and culture: The intrinsic value of nature opens up to test one's actions based on moral and ethical norms concerning the environment and interpersonal relations. This, as well as to test the political and cultural expressions on which values and attitudes are based, is about the ability to ask the question of what could have been different. To constantly reconsidering the relationship between nature and culture becomes the focus.

It includes thinking of networks and challenges an unambiguity in favor of a dynamic and complex relationship between the individual and common sense. Understanding issues from different perspectives gives possibilities to pay attention to power relations. An opportunity that something could have been or understood in another way is essential. This strengthens the importance of acknowledging the unknown, in addition to curiosity when trying to challenge the explanations and answers given.

The principle of 'wild learning' - to understand and acknowledge the unknown: The relationship between experiences and the already known needs to be characterized by creativity as well as questioning from a critical perspective. Instead, the focus is to recognize our lack of knowledge and to be present in the moment that also becomes a prerequisite and basis for a long-term perspective. In the way by asking questions based on experiences in situ, the relationship between theory and practice becomes central not only for education but also in teaching. This challenges the common-sense view of knowledge and learning in education and teaching as it offers a different order and safety not based on control. It also contributes to challenging the notion of knowledge as something unambiguous, measurable, and definable in favor of something that can be altered by putting a changing world in the foreground. Furthermore, it contributes to providing space for the complexity and dynamics of learning by starting from nature as a co-teacher and what can thus be described in terms of "wild learning".

4. Conclusions

To challenge the dominant versions of education and the current dominant relationship with the planet and nature, our conclusions are based on the need for a vision and corresponding educational tools that could enact a new relationship with the planet through education. The results and discussion of didactical concepts show that educators need, but also how they can problematize the dominant versions of education that are enacted in powerful ways and thus turning outcomes towards a human-centered and unecological *status quo.* This 'new' relationship presupposes that the three didactical principles: The principle of order; The principle of questioning and; The principle of 'wild learning', need to be combined with a perspective that challenges attempts to predict and control knowledge and learning and, in the end, also the future. There has been a dream – more or less – to predict the future based on a false idea to control nature and the future like a machine that can be started stopped and started again, by a human being. This is perhaps the most disastrous mistake made. In giving up this idea, we have to accept that the future is unknown. One conclusion is that there is a need to challenge the hierarchical view between teachers and students. As a leader, the teacher needs to be curious and with a first-hand interest to understand students' experiences and then helping them to understand based on diverse perspectives and a variety of ways. The teacher becomes the co-teacher to nature. This understanding might be demanding and may require a re-conceptualization of what learning and knowledge are about in ESD. The simplified individualistic and instrumentalist views on knowledge do not correspond with nature as a co-teacher and learning in a setting as per se. This also challenges the use of nature for an

explicit objective and that might support the idea that nature should be used for excursion based on the perspective of man's master and control. WP offers a perspective that puts nature itself in the foreground making questions of different perspectives and values central.

Another conclusion is that WP provides a view of knowledge as complex and dynamic and learning characterized by creativity and critical questioning gives support to living and learning concerning an unknown future. Knowledge and learning are uncontrollable and need to be given a direction that constantly is reconsidered. Although some kind of assessment is necessary, however, if this has the result that the content and meaning of knowledge are reduced and the complexity of the knowledge and the different notions minimalized, the assessment practice has to be questioned.

When educating young people, the principles we formulated could be a start and contribute to new strategies in education. But without approaches, theories and practices understood as theoretically based norms as important guidelines for our ability to act and handle future challenges, they fail. First, this seems to presuppose approaches that illuminate values as central and counteract defined objectives for education. It thereby also challenges SD as a concrete defined goal for education and also the relation between SD and ESD needs to be critically analyzed. This is something else than nature as a study object and used for a predetermined goal, regardless goals are intrinsic or instrumental ones as traditions in outdoor education and ESD. Dewey (1997) emphasizes that the objectives need to be open but that a direction is needed that links to the role of education in society. Nature's value as equivalent is underlined and emerges to be consistent with the way the question of values in our lives appears to be the “keel and rudder” (Faarlund, 2015, s. 131). Second, it seems to has an impact on how to understand learning and teaching theoretical. Traditional views of nature, regardless of intrinsic or instrumental views are used in education are challenged. To start with experience and then develop meaning in different ways includes critically examine the relationship between culture and nature. Etymologically, "wild" is related to the old English "wilde", which refers to a natural and uncontrolled state (“Wilderness”, 2021). According to the same source, Wild has a connection with the old Old Norse "villr" which means "will". In this way, wild learning includes something uncontrollable but also can have a will-direction. Thereby the relation between knowledge and values becomes an objective itself. Third, in practice, the role of the teacher changes. When defining goals and opportunities to set the agenda becomes a goal per se, it changes relations between teachers and students and illuminates power relations in education and teaching. Overall, this is closely related to democratic values and that nature itself has its own value that needs to be understood, encompassed, and included.

SD includes many important aspects and activities. As a concept, it has been criticized for being too ambiguous. Regardless of this, we conclude that SD is not radical enough and in a pedagogical perspective and could conserve a kind of continuance of status quo – business as usual. We posit there is a need in education and teaching to talk about a more nature-friendly approach instead of SD as commission. The principles we discussed underline the need for openness in education and teaching

corresponding with being in nature, experience, and sensing nature. One important side of this is a change in the relationship between man and nature. This is an opportunity to leave the anthropocentric worldview and slowly move towards a more equivalent relation between man and nature.

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